

## Syllabus for

### Ability Enhancement Compulsory Course (AECC – Environment Studies)(2 credit) for under graduate

#### (For All Faculties - Second Year - Semester III)

#### It is as per UGC guidelines and framing -

#### **Unit 1 : Introduction to environmental studies**

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

(2 lectures)

#### **Unit 2 : Ecosystems**

- What is an ecosystem? Structure and function of ecosystem ; Energy flow in an ecosystem : food chains, food webs and ecological succession. Case studies of the following ecosystems :

a) Forest ecosystem

b) Grassland ecosystem

c) Desert ecosystem

d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(8 lectures)

#### **Unit 3 : Natural Resources : Renewable and Non-renewable Resources**

- Land resources and land use change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water : Use and over-exploitation of surface and ground water, floods, droughts conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

(10 lectures)

#### **Unit 4 : Biodiversity and Conservation**

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services : Ecological, economic, social, ethical, aesthetic and Informational value.

(10 lectures)

#### **References :**

1. Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.

3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science*, 339 : 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. *Environmental and Pollution Science*. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8<sup>th</sup> edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M.L. 2001. *Environmental law and policy in India*. Tripathi 1992.
14. Sengupta, R. 2003. *Ecology and economics : An approach to sustainable development*. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology : Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York : Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

## Syllabus for

Ability Enhancement Compulsory Course (AECC – Environment Studies)(2 credit) for under graduate

(For All Faculties - Second Year - Semester IV)

It is as per UGC guidelines and framing -

### **Unit 5 : Environmental Pollution**

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

(10 lectures)

### **Unit 6 : Environmental Policies & Practices**

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

(9 lectures)

### **Unit 7 : Human Communities and the Environment**

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g. CNG vehicles in Delhi).

(6 lectures)

### **Unit 8 : Field work**

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.

- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

(Equal to 5 lectures)

**References :**

1. Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
4. Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339 : 36-37.
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12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8<sup>th</sup> edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M.L. 2001. Environmental law and policy in India. Tripathi 1992.
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**VOCATIONALIZATION OF UNDERGRADUATE COURSES**

**FUNCTIONAL ENGLISH**

**F. Y. B. A. Functional English**

**(w. e. f. 2019-2020)**

**(Choice Based Credit System)**

**(70-Semester-End Exam & 30-Internal Evaluation)**

**Course Content**

**FYFE Paper 1- An Introduction to English Language and Writing Skills in English**

**Aims and Objectives**

1. To introduce students to Spoken English
2. To create awareness about using language according to the situation/context
3. To create an awareness among students about mispronunciation
4. To reinforce grammar studied up to std. XII
5. To help learners acquire the basic skills of effective writing

**Semester I**

**Unit 1- Orientation**

- 1) Definition of Language, Levels of Linguistic Analysis, Verbal and Non Verbal Communication
- 2) Difference between Phonetics and Phonology
- 3) Organs of Speech and Speech Mechanism
- 4) Developing language habits listening, speaking, reading and writing

**Unit II- Remedial Grammar**

- 1) Parts of Speech
- 2) Tenses and Concord
- 3) Active and Passive Voice
- 4) Common Indian Errors

**Unit III- Language Skills**

- 1) Understanding a passage-its content and structure
- 2) Building Vocabulary
  - a) Synonyms and Antonyms
  - b) Lexical Web
  - c) Collocation
  - d) Use of a Dictionary and Thesaurus
- 3) Dialogue Writing

## **Semester II**

### **Unit I- Introduction to English Phonology**

- 1) Vowels, Consonants and Consonant Clusters
- 2) Syllable, Stress, Word Accent and Sentence Accent
- 3) Weak Forms, Rhythm and Intonation

### **Unit II- Writing Skills**

- 1) Paragraph Writing
- 2) Email Writing

### **Unit III- Information Transfer**

- 1) Converting information from charts, tables, diagrams etc verbally and vice-a-versa
- 2) Summerising, Note making and Note taking

### **Internal Evaluation 30 Marks**

- Mid Semester Examination – 20 Marks
- Home Assignments / Presentation / Field Visit Report / Library Work/ Class Tests- 10 Marks

#### **❖ Books Recommended**

- 1) Bansal and Harrion: Spoken English for India
- 2) Augustine, A.E. Joseph, K.V.: Macmillan Grammar, A Handbook, Macmillan India Ltd, Delhi 1986
- 3) Green, David: Contemporary English Grammar, Structure and Composition, Macmillan India Ltd, Madras, 1971
- 4) Narayan Swami, K.R.: Success with grammar and Compositon, Orient Longman, Hyderabad, 1995
- 5) Freeman, Serah: Written Communication in English, Orient Longman
- 6) Home Crofton: Essay, precise, composition and Comprehension Macmillan
- 7) Intyhira, S R. Saraswathi, S: Enrich Your English CIEEL OUP
- 8) Balasubramanian, T. (1981), a Text book of English Phonetics for Indian Students, Macmillan

**Question Paper Pattern**  
**FYBA Functional English**  
**(Choice Based Credit System-2019)**  
**(70-Semester-End Exam & 30-Internal Evaluation)**

**Paper I: An Introduction to English Language and Writing Skills in English**

**Internal Evaluation 30 Marks**

- Mid Semester Examination – 20 Marks
- Home Assignments / Presentation / Field Visit Report / Library Work/ Class Tests- 10 Marks

**Semester I**

**Marks: 70**

Que. 1	Attempt the following in about 100 words each (2 out of 3) (On Unit I)	14
Que 2	Short notes (2 out of 3) (On Unit I)	14
Que 3	a) Fill in the blanks (any 7) (On Unit II)	07
	b) Do as directed (any 7) (On Unit II)	07
Que 4	a) Attempt the following (On Unit III) (Synonyms and Antonyms, Lexical web and collocation)	07
	b) Practical exercises on the use of dictionary	07
Que 5	a) Read the following passage and answer the questions given below (any 7) (On Unit III)	07
	b) Write a dialogue on the following situations (Any one) (On Unit III)	07

**Question Paper Pattern**  
**FYBA Functional English**  
**(Choice Based Credit System-2019)**  
**(70-Semester-End Exam & 30-Internal Evaluation)**

**Paper I: An Introduction to English Language and Writing Skills in English**

**Semester II**

**Marks: 70**

Que. 1 a) Short notes (2 out of 3) (On Unit I)	07
b) Attempt the following in about 100 words each ( 2 out of 3) (On Unit I)	07
Que. 2 a) Transcribe the following words (any 7)	07
b) Mark appropriate intonation in the following sentences (any 7)	07
Que. 3 Write a paragraph on the given topics (any 2 out of 3)	14
Que 4 Write an email on the following situations (any 2 out of 3)	14
Que 5 a) Read the following diagram and write a paragraph about it	07
b) Practical question on summarising or note making - taking	07



**VOCATIONALIZATION OF UNDERGRADUATE COURSES  
FUNCTIONAL ENGLISH**

**F. Y. B. A. Functional English**

(w. e. f. 2019-2020)

(Choice Based Credit System)

(70-Semester-End Exam & 30-Internal Evaluation)

**Course Content**

**FYFE Paper II- Oral Communication in English**

**Aims and Objectives**

1. To introduce students to Oral Skills in English
2. To introduce students to basics of computer
3. To introduce students to various conversational situations

**Semester I**

**Unit I- Conversational Skills I**

- 1) Greetings and Response to Greetings
- 2) Introducing Yourself
- 3) Introducing Others
- 4) Joining and Leaving a Conversation

**Unit II- Conversational Skills II**

- 1) Simple oral descriptions: describing familiar things, places, persons, pictures etc.
- 2) Describing simple events, routine activities of oneself and others

**Unit III- Key Competency Modules I**

- 1) Basics of Computer
- 2) MS Office: Word, Excel and Power Point Presentation

**Semester II**

**Unit I- Conversational Skills III**

- 1) Telling stories with the help of Points / Pictures
- 2) Asking questions to get Information
- 3) Agreeing, Partly Agreeing and Disagreeing
- 4) Inviting, Accepting and Declining Invitation

**Unit II- Conversational Skills IV**

- 1) Oral Presentation Skills
- 2) Group Discussion
- 3) Telephonic Communication

**Unit III: Key Competency Modules II**

- 1) Use of Internet – surfing, searching and downloading
- 2) Use of Mobile Apps for Improving Conversational Skills in English

**Internal Evaluation 30 Marks**

- Mid Semester Examination – 20 Marks
- Home Assignments/Presentation/ Field visit Report/Library Work/Class Tests/ Participation in activities of practical conversation - 10 Marks

**FYBA Functional English**  
**(Choice Based Credit System-2019)**  
**(70-Semester-End Exam & 30-Internal Evaluation)**

**Paper II: Oral Communication in English**  
**(This is entirely a Practical Paper)**

**Internal Evaluation 30 Marks**

- Mid Semester Examination – 20 Marks
- Home Assignments / Presentation / Field visit Report / Library Work/ Class Tests/  
Participation in activities of practical conversation - 10 Marks

**Semester One**

**Marks: 70**

Que. 1	Practical Questions (From Conversational Skills I)	14
Que. 2	Activities Question (From Conversational Skills I)	14
Que. 3	Practical Questions on Unit Two (From Conversational Skills II)	14
Que. 4	Activities on Unit Two (From Conversational Skills II)	14
Que. 5	Practical Questions on Unit Three (From Key Competency Modules I)	14

**FYBA Functional English**  
**(Choice Based Credit System-2019)**  
**(70-Semester-End Exam & 30-Internal Evaluation)**

**Paper II: Oral Communication in English**  
**(This is entirely a Practical Paper)**

**Internal Evaluation 30 Marks**

- Mid Semester Examination – 20 Marks
- Home Assignments / Presentation / Field visit Report / Library Work/ Class Tests/ Participation in activities of practical conversation - 10 Marks

**Paper II: Oral Communication in English**

**Semester Two**

**Marks: 70**

Que. 1	Practical Questions on Unit One (Conversational Skills III)	14
Que. 2	Activities Question on Unit One (Conversational Skills III)	14
Que. 3	Practical Questions on Unit Two (Conversational Skills IV)	14
Que. 4	Activities on Unit Two (Conversational Skills IV)	14
Que. 5	Practical Questions on Unit Three (Key Competency Modules II)	14

**Note: 1. Practical Questions should involve tasks such as listening, describing, conversations and role playing.**

**2. Activities should be aimed at testing conversational and computer skills.**



## सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

### F. Y. B. A. मराठी

मराठी विषयाचा पुनर्रचित अभ्यासक्रम- जून २०१९ पासून

### Choice Based Credit System [CBCS]

निवड आधारित श्रेयांक पद्धत

सत्र	विषयाचे नाव
नियमित अभ्यासक्रम	
पहिले	मराठी साहित्य : कथा आणि भाषिक कौशल्यविकास [CC-1 A]
दुसरे	मराठी साहित्य : एकांकिका आणि भाषिक कौशल्यविकास [CC-1 A]
पर्यायी अभ्यासक्रम	
पहिले	व्यावहारिक व उपयोजित मराठी - भाग १ [CC-1 A]
दुसरे	व्यावहारिक व उपयोजित मराठी - भाग २ [CC-1 A]

## F. Y. B. A. मराठी विषयाचा पुनर्रचित अभ्यासक्रम- जून २०१९ पासून

१. Title of the course: B.A. (मराठी)

२. Preamble of the syllabus:

उच्च शिक्षणासाठी प्रवेश घेणाऱ्या विद्यार्थ्यांची शैक्षणिक पार्श्वभूमी ही ज्ञानरचनावादाची आहे. या विद्यार्थ्यांचे पूर्वानुभव, पूर्वज्ञान हे जिज्ञासा, निरीक्षण, प्रयोग, सर्जनशीलता, उपाययोजना व समस्या निराकरण अशा अध्ययन – अध्यापन सूत्रांतून निर्माण झाले आहे.

हा अभ्यासक्रम तयार करित असताना काही आधारभूत तत्त्वे स्वीकारली आहेत. राष्ट्रीय शैक्षणिक धोरणाची उद्दिष्टे प्रत्यक्षात आणताना, विद्यार्थीकेंद्री, आंतर्विद्याशाखीय, रोजगाराभिमुख, कौशल्याधिष्ठीत असे भाषा व साहित्याचे अभ्यासक्रम अनुसरणे, निर्माण करणे आवश्यक आहे. तसेच जीवन कौशल्य विकासासाठी भाषा, साहित्य, कला ही माध्यमे अधिक परिणामकारकतेने समजावून घेणे आवश्यक झाले आहे. साहित्यिक क्षमता, भाषिक क्षमता वाढीसाठी, जीवनाच्या आकलनासाठी आणि प्रगल्भतेसाठी विद्यार्थी सिद्ध करणे; ही आजची गरज बनली आहे.

**उद्दिष्टे :**

१. मराठी भाषा, मराठी साहित्य आणि मराठी संस्कृती यांचे अध्ययन करणे.
२. साहित्यविषयक आकलन, आस्वाद आणि मूल्यमापन क्षमता विकसित करणे.
३. साहित्याभ्यासातून जीवनविषयक समज विकसित करणे.
४. मराठी भाषेची उपयोजनात्मक कौशल्ये विकसित करणे.

मराठी विषयाचा अभ्यासक्रमाची पुनर्रचना खालील क्रमाने करण्यात येणार आहे.

१. First Year B.A. 2019-20.
२. Second Year B.A. 2020-21.
३. Third Year B.A. 2021-22.

B. A. (मराठी) हा पुनर्रचित अभ्यासक्रम तीन वर्षांचा आणि सहा सत्रांत विभागलेला निवड आधारित श्रेयांक पद्धतीचा (Choice Based Credit System) [CBCS] आहे. हा अभ्यासक्रम F. Y. B. A. (सत्र १ आणि सत्र २), S. Y. B. A. (सत्र ३ आणि सत्र ४), T. Y. B. A. (सत्र ५ आणि सत्र ६) अशा १३२ श्रेयांकांचा आहे.

३. Pattern: निवड आधारित श्रेयांक पद्धत (Choice Based Credit System) [CBCS]

४. Eligibility : (Circular No. 100 of 2017)

### Faculty of Humanities

#### (1) Arts & Fine Arts Bachelor's Degree

1. First Year B.A.

- (a) Higher Secondary School Certificate (10+2) or its equivalent Examination with English as a passing subject.
- (b) Three Years Diploma Course (after S.S.C. i.e. 10th Standard), of Board of Technical Education conducted by Government of Maharashtra or its equivalent.
- (c) Three Years Diploma in Pharmacy Course (after S.S.C. i.e. 10th), of Board of Technical Education conducted by Government of Maharashtra or its equivalent.
- (d) S.S.C. of 10 years or 11 years with English and Indian Air Force Educational Test for promotion to the rank of Corporal.
- (e) Trained Teachers Certificate Course, of Inter-State Board of Anglo Indian Education, New Delhi.
- (f) Intermediate Commerce/Arts examination from the Recognized Board of Secondary Education, M.P. Bhopal with 4 subjects including General English.
- (g) Diploma in Education with English, of Bureau of Government of Maharashtra.
- (h) MCVC (minimum competency Vocational Course Government of Maharashtra)

५. Examination:

१. Pattern of examination:

१. Semester

२. Pattern of the question paper:

विद्यापीठ सत्र परीक्षा	७० गुण
अंतर्गत मूल्यमापन	३० गुण
एकूण	१०० गुण

२. Standard of passing: उत्तीर्ण होण्यासाठी विद्यापीठ सत्र परीक्षेत ७० पैकी २८ गुण अनिवार्य, अंतर्गत मूल्यमापनामध्ये ३० पैकी १२ गुण अनिवार्य.

३. Award of class:

#### 1. Percentage to Grades and Grade Points

The following formula may be used to convert marks (%) into letter grades.

Let  $\bar{X}$  = mean of % age marks of all student appeared in the paper.

$\sigma$  = Standard deviation

m = % of marks obtained

Letter grade	Numerical grade	Formula
O (outstanding)	10	$m \geq \bar{X} + 2.5 \sigma$
A+ (Excellent)	9	$\bar{X} + 2.0 \sigma \leq m < \bar{X} + 2.5 \sigma$
A (Very Good)	8	$\bar{X} + 1.5 \sigma \leq m < \bar{X} + 2.0 \sigma$
B+ (Good)	7	$\bar{X} + 1.0 \sigma \leq m < \bar{X} + 1.5 \sigma$
B (Above average)	6	$\bar{X} \leq m < \bar{X} + \sigma$
C (Average)	5	$\bar{X} - 0.5 \sigma \leq m < \bar{X}$
D (Pass)	4	$\bar{X} - \sigma \leq m < \bar{X} - 0.5 \sigma$
F (Fail)	0	$m < \bar{X} - \sigma$
Ab (Absent)	0	

\* Minor variations may be adjusted by the individual institution.

६ Structure of Course:

Year	Semester	Core Courses (CC)	Discipline Specific Elective Courses (DSE)	Generic Elective(GE)
F.Y.B.A.	1	CC – 1 A (3)		
	2	CC – 1 B (3)		
S.Y.B.A.	3	CC – 1 C (2)	DSE 1 A (3) DSE 2 A (3)	
	4	CC – 1 D (2) CC – 3 D (1)	DSE 1 B (3) DSE 2 B (3)	
T.Y.B.A.	5	CC – 1 E (2)	DSE 1 C (3) DSE 2 C (3)	
	6	CC – 1 F (2)	DSE 1 D (3) DSE 2 D (3)	GE 2 B (2)

७ Work Load:

१. १ श्रेयांक : १५ तास
२. १ तास : ६० मिनिट
३. १ सत्र : ३ श्रेयांक

८ Subject wise Detail Syllabus & Recommended books:



## F.Y.B.A. (प्रथम वर्ष कला)

निवड आधारित श्रेयांक पद्धत (Choice Based Credit System)

### पहिले सत्र

#### विषयाचे नाव : मराठी साहित्य : कथा आणि भाषिक कौशल्यविकास [CC-1 A]

#### अभ्यासक्रमाची उद्दिष्टे :

१. कथा या साहित्यप्रकाराची ओळख करून देणे.
२. कथा या साहित्यप्रकाराचे स्वरूप, घटक आणि प्रकार यांची ओळख करून देणे.
३. विविध साहित्यप्रवाहांमधील कथा या साहित्यप्रकारातील निवडक कथांचे अध्ययन करणे.
४. भाषिक कौशल्यविकास करणे.

#### पहिले सत्र :

घटक	तपशील	श्रेयांक	तासिका
१	कथा : स्वरूप आणि वाटचाल कथा : घटक कथा : प्रकार (रचनाप्रकार आणि प्रवाह)	१	१५
२	अभ्यासपुस्तक : <b>समकालीन मराठी कथा</b> अक्षरबंध प्रकाशन, पुणे संपादक : प्रा. डॉ. शिरीष लांडगे, प्रा. डॉ. दिलीप पवार, प्रा. डॉ. संदीप सांगळे	१	१५
३	भाषिक कौशल्यविकास नैसर्गिक : आकलनासह श्रवण अर्जित : संभाषण, वाचन, लेखन, इ-संवाद कौशल्य प्रगत : सारग्रहण, सारांशलेखन	१	१५

#### संदर्भ ग्रंथ

१. मराठी साहित्य : प्रेरणा आणि स्वरूप, संपादक डॉ. गो. मा. पवार, डॉ. म. द. हातकणंगलेकर
२. साहित्यमूल्य आणि अभिरुची, डॉ. गो. मा. पवार
३. काही साहित्यिक : काही साहित्यकृती, डॉ. भीमराव कुलकर्णी
४. साहित्य अध्यापन आणि प्रकार, वा. ल. कुलकर्णी गौरव ग्रंथ, संपादक श्री. पु. भागवत, डॉ. सुधीर रसाळ
५. कथा : संकल्पना आणि समीक्षा, सुधा जोशी, मौज प्रकाशन
६. मराठी कथा : विसावे शतक, संपादक के. ज. पुरोहित, सुधा जोशी

७. व्यावहारिक मराठी, पुणे विद्यापीठ प्रकाशन, पुणे.
८. व्यावहारिक मराठी, डॉ. कल्याण काळे, डॉ. दत्तात्रय पुंडे, निराली प्रकाशन, पुणे.
९. व्यावहारिक मराठी, डॉ. लीला गोविलकर, डॉ. जयश्री पाटणकर, स्नेहवर्धन प्रकाशन, पुणे.
१०. व्यावहारिक मराठी, डॉ. सयाजीराजे मोकाशी, प्रा. रंजना नेमाडे
११. व्यावहारिक, उपयोजित मराठी आणि प्रसारमाध्यमांची कार्यशैली, संपादक डॉ. संदीप सांगळे, डायमंड पब्लिकेशन, पुणे.
१२. मराठी भाषेची संवाद कौशल्ये (पुस्तक क्र.१ ते ८) य. च. म. मुक्त विद्यापीठ, नाशिक.
१३. व्यावहारिक मराठी, डॉ. ल. रा. नसिराबादकर, फडके प्रकाशन, कोल्हापूर.
१४. नवभारत, व्यावहारिक मराठी विशेषांक, ऑगस्ट – सप्टेंबर, १९८२, प्राज्ञ पाठशाला, वाई.
१५. प्रसारमाध्यमांसाठी लेखन कौशल्ये, य. च. म. मुक्त विद्यापीठ, नाशिक.
१६. कहाणी वर्तमानपत्राची, चंचल सरकार, अनुवाद, दिनकर गांगल, नॅशनल बुक ट्रस्ट.
१७. वैखरी, भाषा आणि भाषा व्यवहार, अशोक केळकर
१८. प्रसारमाध्यमे आणि मराठी भाषा, संपादक डॉ. भास्कर शेळके.
१९. व्यावहारिक मराठी भाषा, शरदिनी मोहिते
२०. व्यावहारिक आणि उपयोजित मराठी, डॉ. मनोहर रोकडे
२१. व्यासपीठ, डॉ. महादेव वाळुंज, अक्षरमानव प्रकाशन, पुणे.
२२. मराठी भाषा उपयोजन आणि सर्जन, प्रा. सुहासकुमार बोबडे
२३. पारिभाषिक संज्ञा कोश (इंग्लिश - मराठी ) डॉ. स्नेहल तावरे.
२४. भाषांतर मीमांसा, कल्याण काळे, अंजली सोमण, प्रतिमा प्रकाशन, पुणे.
२५. व्यावहारिक मराठी, संपादक डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे.
२६. उपयोजित मराठी, डॉ. केतकी मोडक, प्रा. सुजाता शेणई, संतोष शेणई
२७. व्यावहारिक मराठी, प्रकाश परब, मिथुन प्रकाशन, १८८९,डोंबिवली (पूर्व)
२८. भाषा संचालनालय, महाराष्ट्र शासनाने प्रकाशित केलेले विविध कोश
२९. साहित्यिक गौरी देशपांडे, महादेव वाळुंज.
३०. बाबुराव बागुलांच्या कथेतील दलित स्त्री, राजाभाऊ भैलुमे.
३१. दलित व दलितेतरांची कथा : एक अभ्यास, श्रीराम गडकर
३२. <https://www.maayboli.com/node/62738>

३३. [https://m.maharashtratimes.com/editorial/samwad/predictive-reviews-of-rural-problems/amp\\_articles/68120291.cms](https://m.maharashtratimes.com/editorial/samwad/predictive-reviews-of-rural-problems/amp_articles/68120291.cms)
३४. <https://marathi.pratilipi.com/>
३५. <https://www.youtube.com/watch?v=uMMRRXj-54Q&feature=youtu.be>
३६. [https://mr.m.wikipedia.org/wiki/%E0%A4%97%E0%A5%8C%E0%A4%B0%E0%A5%80\\_%E0%A4%A6%E0%A5%87%E0%A4%B6%E0%A4%AA%E0%A4%BE%E0%A4%82%E0%A4%A1%E0%A5%87](https://mr.m.wikipedia.org/wiki/%E0%A4%97%E0%A5%8C%E0%A4%B0%E0%A5%80_%E0%A4%A6%E0%A5%87%E0%A4%B6%E0%A4%AA%E0%A4%BE%E0%A4%82%E0%A4%A1%E0%A5%87)
३७. <https://www.bbc.com/marathi/india-43021905>
३८. <https://www.loksatta.com/lekh-news/indian-women-authors-gauri-deshpande-chaturang-anniversary-issue-1761601/>
३९. [https://mr.m.wikipedia.org/wiki/%E0%A4%AD%E0%A4%BE%E0%A4%B8%E0%A5%8D%E0%A4%95%E0%A4%B0\\_%E0%A4%9A%E0%A4%82%E0%A4%A6%E0%A4%A8%E0%A4%B6%E0%A4%BF%E0%A4%B5](https://mr.m.wikipedia.org/wiki/%E0%A4%AD%E0%A4%BE%E0%A4%B8%E0%A5%8D%E0%A4%95%E0%A4%B0_%E0%A4%9A%E0%A4%82%E0%A4%A6%E0%A4%A8%E0%A4%B6%E0%A4%BF%E0%A4%B5)

## दुसरे सत्र

### विषयाचे नाव : मराठी साहित्य : एकांकिका आणि भाषिक कौशल्यविकास [CC-1 A]

#### अभ्यासक्रमाची उद्दिष्टे :

१. एकांकिका या साहित्यप्रकाराची ओळख करून देणे.
२. एकांकिका या साहित्यप्रकाराचे स्वरूप, घटक आणि प्रकार यांची ओळख करून देणे.
३. मराठी साहित्यातील निवडक एकांकिकांचे अध्ययन करणे.
४. भाषिक कौशल्यविकास करणे.

घटक	तपशील	श्रेयांक	तासिका
१	एकांकिका : स्वरूप एकांकिका : घटक एकांकिका : संहितामूल्य व प्रयोगमूल्य	१	१५
२	अभ्यासपुस्तक : मराठी एकांकिका (विठ्ठल तो आला आला – पु. ल. देशपांडे, हंडाभर चांदण्या – दत्ता पाटील) पद्मगंधा प्रकाशन, पुणे संपादक : प्रा. डॉ. शिरीष लांडगे, प्रा. डॉ. बाळकृष्ण लळीत, प्रा. डॉ. भास्कर ढोके	१	१५
३	भाषा उपयोजनाची विविध आविष्कार रूपे संवादलेखन कल्पनाविस्तार घोषवाक्य लेखन भाषांतर	१	१५

**संदर्भ ग्रंथ**

१. एकांकिका वाटचाल, संपादक श्री. रं. भिडे व इतर, सोमय्या पब्लिकेशन, मुंबई, १९६९.
२. निवडक मराठी एकांकिका, संपादक सुधा जोशी, साहित्य अकादमी, दिल्ली, १९८३.
३. निवडक एकांकिका, वि.भा. देशपांडे, १९७७.
४. सर्वोत्कृष्ट मराठी एकांकिका, प्रभाकर नारायण परांजपे, सुपर्ण प्रकाशन, पुणे, १९४८.
५. मराठी एकांकिका तंत्र व विकास, श्री. रं. भिडे, सुपर्ण प्रकाशन, पुणे.
६. एकांकिका विचार आणि सर्वोत्तम एकांकिका, जयंत पवार व इतर, नेहरू सेंटर प्रकाशन, मुंबई १९९३.
७. टॅक्स फ्री आणि इतर एकांकिका (प्रस्तावना), चंद्रशेखर फणसळकर, कॉन्टिनेन्टल प्रकाशन, पुणे १९९५.
८. समग्र एकांकिका भाग १ व २, विजय तेंडुलकर, पॉप्युलर प्रकाशन, मुंबई, २००४.
९. चतुरंग सवाई एकांकिका, संपादक चतुरंग परिवार, १९८८-२०१२ रौप्यमहोत्सवी वाटचाल विशेषांक.
१०. <https://www.youtube.com/watch?v=0fnZMG8zdpk>

**प्रश्नपत्रिकेचे स्वरूप : पहिले आणि दुसरे सत्र**

<b>विद्यापीठ सत्र परीक्षा</b>		
<b>वेळ : ३ तास</b>	<b>घटकनिहाय प्रश्न तपशील</b>	<b>गुण : ७०</b>
<b>प्रश्न क्रमांक</b>		<b>गुण</b>
प्रश्न १ ला	२ पैकी १ प्रश्नाचे उत्तर प्रत्येकी १५० शब्दांपर्यंत (घटक १)	१०
प्रश्न २ रा	४ पैकी २ प्रश्नांची उत्तरे प्रत्येकी १५० शब्दांपर्यंत (घटक २)	२०
प्रश्न ३ रा	२ पैकी १ प्रश्नाचे उत्तर प्रत्येकी ३०० शब्दांपर्यंत (घटक २)	२०
प्रश्न ४ था	४ पैकी २ प्रश्नांची उत्तरे प्रत्येकी १५० शब्दांपर्यंत (घटक ३)	२०
<b>सत्र परीक्षा एकूण गुण</b>		<b>७०</b>
<b>अंतर्गत मूल्यमापन</b>		
<b>लेखी परीक्षा (घटक २)</b>		<b>२०</b>
<b>प्रकल्प / गटचर्चा / गृहपाठ / चर्चासत्र / उपक्रम सहभाग / अभ्यासभेट (घटक ३)</b>		<b>१०</b>
<b>अंतर्गत मूल्यमापन एकूण गुण</b>		<b>३०</b>
<b>सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण</b>		<b>१००</b>
अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे. विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.		
विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.		

**F.Y.B.A. (प्रथम वर्ष कला)**

निवड आधारित श्रेयांक पद्धत (Choice Based Credit System)

पहिले सत्र

पर्यायी अभ्यासक्रम

**विषयाचे नाव : व्यावहारिक व उपयोजित मराठी भाग १ [CC-1 A]**

अभ्यासक्रमाची उद्दिष्टे :

१. संज्ञापनातील भाषेची भूमिका, विविध भाषिक आविष्कारांचे स्वरूप समजावून घेणे. भाषिक कौशल्यांची क्षमता विकसित करणे.
२. भाषिक कौशल्यांचे विविध आविष्कार आणि संपर्कमाध्यमे यांचा परस्परसंबंध समजावून घेणे व उपयोजन करणे.
३. मराठीचा कार्यालयीन, व्यावसायिक कामकाजात भाषेचे उपयोजन, गरज व स्वरूप या विशेषांची माहिती करून घेणे.
४. कार्यालयीन, व्यावसायिक भाषाव्यवहारासाठी आवश्यक लेखनकौशल्याचे संपादन व उपयोजन करणे.

घटक	तपशील	श्रेयांक	तासिका
१	१. जीवन व्यवहारातील भाषेचे स्थान : भाषा स्वरूप व व्याख्या, आविष्करणाचे प्रकार, मौखिक व लिखित.जीवनक्षेत्रे व भाषा उपयोजन २. भाषिक कौशल्ये : १. नैसर्गिक - आकलनसह श्रवण, २. अर्जित - संभाषण, वाचन व लेखन	१	१५
२	१. अर्जलेखन- विनंती अर्ज, नोकरीसाठी अर्ज, तक्रार अर्ज, माहितीच्या अधिकारातील अर्ज. २. निबंध लेखन - वर्णनात्मक, चर्चात्मक आणि ललित (प्रत्यक्ष निबंधलेखन करणे अपेक्षित )	१	१५
३	प्रगत भाषिक कौशल्ये : १. सारांश लेखन २. सारग्रहण ३. भाषांतर (प्रत्यक्ष लेखन करणे अपेक्षित)	१	१५

**दुसरे सत्र**  
**पर्यायी अभ्यासक्रम**

**विषयाचे नाव : व्यावहारिक व उपयोजित मराठी भाग १ [CC-1 A]**

घटक	तपशील	श्रेयांक	तासिका
१	संवाद लेखन : १. विविध माध्यमांसाठी होणारे संवाद. २. सुचविलेल्या प्रसंगावर आधारित संवाद लेखन ३. ई-संवाद (ई-मेल)	१	१५
२	भाषांतर : १. भाषांतर म्हणजे काय ? भाषांतर शास्त्र की कला ? २. भाषांतराची आवश्यकता, भाषांतर करताना येणाऱ्या अडचणी. ३. भाषांतर आणि रूपांतर, लक्ष्यनिष्ठ आणि मूलनिष्ठ भाषांतर. ४. इंग्लिश उताऱ्याचे मराठी अथवा हिंदी भाषांतर.	१	१५
३	उपयोजित मराठीची आविष्कार रूपे : १. टिप्पणी लेखन २. इतिवृत्त लेखन ३. घोषणा पत्रक ४. हस्तपत्रक ५. घडीपत्रक ६. स्मरणपत्र ७. स्मरणिका निर्मितीचा आराखडा ८. आशयलेखन (Content Writing) ९. जाहिरात लेखन.	१	१५

**संदर्भ ग्रंथ**

१. व्यावहारिक मराठी, पुणे विद्यापीठ प्रकाशन, पुणे.
२. व्यावहारिक मराठी, डॉ. कल्याण काळे, डॉ. दत्तात्रय पुंडे, निराली प्रकाशन, पुणे.
३. व्यावहारिक मराठी, डॉ. लीला गोविलकर, डॉ. जयश्री पाटणकर, स्नेहवर्धन प्रकाशन, पुणे.
४. व्यावहारिक मराठी, डॉ. सयाजीराजे मोकाशी, प्रा. रंजना नेमाडे
५. व्यावहारिक मराठी, डॉ. ल. रा. नसिराबादकर, फडके प्रकाशन, कोल्हापूर
६. प्रसारमाध्यमांसाठी लेखन कौशल्ये, य.च.म.मुक्त विद्यापीठ, नाशिक.
७. कहाणी वर्तमानपत्राची, चंचल सरकार अनुवाद, दिनकर गांगल, नॅशनल बुक ट्रस्ट
८. द्विभाषी व्यावहारिक शब्दकोश (इंग्लिश - मराठी) गणेश ओतुरकर
९. प्रसारमाध्यमे आणि मराठी भाषा, संपादक डॉ. भास्कर शेळके.

१०. व्यावहारिक मराठी भाषा, शरदिनी मोहिते
११. भाषांतर मीमांसा, डॉ. कल्याण काळे
१२. व्यावहारिक, उपयोजित मराठी आणि प्रसारमाध्यमे, संपादक डॉ. संदीप सांगळे
१३. व्यावहारिक आणि उपयोजित मराठी, डॉ. मनोहर रोकडे
१४. मराठी भाषा उपयोजन आणि सर्जन, प्रा. सुहासकुमार बोबडे
१५. उपयोजित मराठी, डॉ. केतकी मोडक, प्रा. सुजाता शेणई, संतोष शेणई
१६. व्यावहारिक मराठी, प्रकाश परब
१७. व्यावहारिक मराठी, संपादक डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे.
१८. निबंध : शास्त्र व कला, डॉ. प्र. न. जोशी
१९. निबंध व लेखन, निर्मला किराणे.
२०. भाषांतरमीमांसा, संपादक डॉ. रमेश वरखेडे, य. च. म. मुक्त विद्यापीठ, नाशिक.

प्रश्नपत्रिकेचे स्वरूप : पहिले आणि दुसरे सत्र

विद्यापीठ सत्र परीक्षा		
वेळ : ३ तास	घटकनिहाय प्रश्न तपशील	गुण : ७०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	४ पैकी २ प्रश्नांची उत्तरे लिहिणे. (घटक १)	२०
प्रश्न २ रा	४ पैकी २ प्रश्नांची उत्तरे लिहिणे. (घटक २)	२०
प्रश्न ३ रा	४ पैकी २ प्रश्नांची उत्तरे लिहिणे. (घटक ३)	३०
सत्र परीक्षा एकूण गुण		७०
अंतर्गत मूल्यमापन		
लेखी परीक्षा		२०
प्रकल्प / गटचर्चा / गृहपाठ / चर्चासत्र / उपक्रम सहभाग / अभ्यासभेट		१०
अंतर्गत मूल्यमापन एकूण गुण		३०
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		१००
अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे. विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.		
विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.		



**SAVITRIBAI PHULE PUNE UNIVERSITY**

(formerly University of Pune)

**F.Y.B.A. in Economics**

**SYLLABUS**

**(Credit and Semester System)**

**(To be implemented from the Academic Year, 2019-20)**



# **F.Y.B.A. Economics**

## **G-1 Indian Economic Environment**

### **Annexure –II**

1) Title of the course:

**Class:** F.Y.B.A.

**Subject:** Economics.

**Title: Year of Implementation:** From June - 2019

2) Preamble of the syllabus:

The proposed curriculum is with an objective to enhance the existing syllabus, make it contextual as well as applicable and to incorporate all the latest changes in the national economy. The board examined the short comings of the existing syllabus and expressed the need to change it. While doing so the board analyzed other curricula of existing universities in respective subjects in terms of content, relevance, quality and pattern of teaching that has been synthesized in the present proposal. While framing the draft of syllabus, guidance from industrial experts and professionals was sought.

The present era is that of structural transformation especially within the country. Moreover fast changing international scenario and approach of other countries towards our human resource makes it mandatory for the educational system to impart latest knowledge to our students, so that they are prepared to merge themselves in the challenging economic and corporate environment.

Hence, a change in the paper and restructuring of syllabus becomes imperative. The syllabus needs to be holistic in nature. It should be contextual and clear the basics of economics but at the same time it should teach application of the theories in day to day life.

In the modern world, competition is an inseparable part of our lives. To inculcate a competitive spirit among the students, the syllabus should include all the recent advancement with in and out of the country with its pros and cons.

3) Objectives of the paper

- To familiarize the students with the recent developments in the Indian Economy
- To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment.
- To help the students to prepare for varied competitive examinations
- To enable students to understand and comprehend the current business scenario, agricultural scenario and other sectorial growth in the Indian context. To make the student aware of the developments such as MSMEs, Digital Economy, E-Banking, BPO & KPO, etc.

Programme Outcome:

- Ability to develop an understanding of the economic environment and the factors affecting economic environment.
- Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.
- Ability to compare and contrast Indian Economy with other world economies.
- At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.

#### 4) Introduction:

Semester system with the pattern of 70:30

#### 5) Eligibility:

Students who have passed 12<sup>th</sup> standard from any stream with minimum 35% of marks in all the subjects. (as per the rule of affiliating SPPU)

#### 6) Examination:

A) Pattern of examination: 70:30

i) Internal university examination of 70 marks with internals of 30 marks

ii) Pattern of question paper: pattern for 70 marks

- Question Number 1: 8 questions to be answered out of 10 with total marks 16
- Question Number 2: 4 questions to be answered out of 6 with total marks of 16
- Question Number 3: 3 questions to be answered out of 4 with total marks of 18
- Question Number 4: 2 questions to be answered out of 3 with total marks of 20

iii) Duration for 70 marks: 3 Hrs

iv) Pattern for 30 marks:

- Internal exam (20 marks)
- PPT (oral or poster)/ Project work/Assignments/visits (10 marks)

v) Unit wise classification of marks

Unit	Name of the Chapter	Distribution of marks
<b>Semester 1</b>		
Unit 1	Introduction	23
Unit 2	Agricultural Environment	23
Unit 3	Industrial Environment	24
<b>Total</b>		<b>70</b>
<b>Semester 2</b>		
Unit 1	Service Sector Environment	20
Unit 2	Banking Environment	25
Unit 3	Overview of Indian economy	25
<b>Total</b>		<b>70</b>

B) Standard of Passing:

To pass, the candidate must obtain at least 40% in individual subjects, in internal assessment and in university examination each in all the papers.

C) ATKT rules

As per the rules of SPPU, a student can have maximum two papers as backlog and go to second year.

D) Award of Class:

- Those successful candidates who obtained 40 % and above of the total aggregate marks in all subjects for internal assessment and university examination taken together at one and same sitting, shall be placed in Pass Class.
- Those successful candidates who obtained 50 % and above of the total aggregate marks in all subjects for internal assessment and university examination taken together at one and same sitting, shall be placed in Second Class.
- Those successful candidates who obtained 55 % and above of the total aggregate marks in all subjects for internal assessment and university examination taken together at one and same sitting, shall be placed in Higher Second Class.

iv. Those successful candidates who obtained 60 % and above of the total aggregate marks in all subjects for internal assessment and university examination taken together at one and same sitting, shall be placed in First Class.

v. Those successful candidates who obtained 70 % and above of the total aggregate marks in all subjects for internal assessment and university examination taken together at one and same sitting, shall be placed in First Class with

E) External students:

The students who appear for the examinations without attending any college and take admission in the university as external students will be considered as external students.

F) Setting of question paper/pattern of question paper

Question papers will be set by the panel of paper setters appointed by Savitribai Phule Pune University.

G) Verification/ revaluation

Verification and or revaluation will be done by panel appointed by Savitribai Phule Pune University.

7) Structure of the course

a) Compulsory paper:

Only one paper will be given without and optional subject

b) Optional paper

No subjects are optional.

c) Medium of instructions:

Medium of instruction for the paper will be both Marathi and English.

### **Structure of the entire course**

BA Economics			
FY	G1	Indian Economic Environment	2019-20
SY	G2	Financial System	2020-21
SY	S1	Micro Economics	2020-21
SY	S2	Macro Economics	2020-21
TY	G3	Public Finance	2021-22
TY	S3	International Economics	2021-22
TY	S4	Economics of Development	2021-22

8) Equivalence of previous syllabus with the proposed syllabus

The revised syllabus has changes in the name of the paper, topics and sub topics offered as compared to the old syllabus. The paper will make the syllabus more comprehensive and modified to suitably align with the changing Indian scenario. The paper will set an apt background for students to comprehend knowledge of economics in their academic career and apply the knowledge in their life.

9) University terms

Academic calendar of the affiliating university will be followed.

10) Subject wise detail syllabus

<b>Semester 1</b>		
<b>Units</b>	<b>Name and sub titles of the Chapter</b>	<b>No of lectures</b>
<b>Unit 1</b>	<b>Introduction</b>	<b>16</b>
	1.1 Meaning, Factors affecting Economic Environment- Economic, Political, Technological, Social & Cultural	08
	1.2 Challenges to Indian Economy: Natural Resources, Energy Resources, Education, Health, Environment	04
	1.3 Comparison of Indian Economy with the World Economy- Population, Agriculture, Industry and Service Sector	04
<b>Unit 2</b>	<b>Agricultural Environment</b>	<b>16</b>
	2.1 Role of Agriculture in Indian Economy	04
	2.2 Challenges to Indian Agriculture-Productivity, Rural Credit, Marketing, Rural Entrepreneurship	08
	Recent Trends in Indian Agriculture: Cropping pattern, Technology, Crop Insurance, Water Management, Agri-Business	04
<b>Unit 3</b>	<b>Industrial Environment</b>	<b>16</b>
	3.1 Role of Industry in Indian Economic Development	04
	3.2 Industrial Policy Resolution, 1991- Liberalization, Privatization and Globalization (LPG)	03
	3.3 Challenges to Indian Industry-Labour & Employment, Regional Imbalance, Finance, Technology	03
	3.4 Micro, Small and Medium Enterprises (MSME)- Definition & Role	03
	3.5 Recent trends in Indian Industry- Indian Multinationals & New Policies	03
<b>Semester 2</b>		
<b>Unit 1</b>	<b>Service Sector Environment</b>	<b>12</b>
	1.1 Role and Growth of Service Sector in Indian Economy	02

	1.2 Challenges to Indian Service sector- Business-based & Knowledge-based Sector, Education sector, Health sector, Insurance, Tourism, Banking	06
	1.3 Recent Trends in Indian Service Sector- Digital Economy, E-Commerce, E- Finance	04
<b>Unit 2</b>	<b>Banking Environment</b>	<b>18</b>
	2.1 Banking- Definition, Functions, Changing Structure of Banking in India- New Private Banks, Small Banks, Payment Banks	08
	2.2 Bank Accounts- Types, Procedure and Operation of Accounts	05
	2.3 Recent Trends in Indian Banking Environment- E-Banking, E- Wallets, Bank Mergers and Amalgamations	05
<b>Unit 3</b>	<b>Overview of Indian economy</b>	<b>18</b>
	3.1 Challenges of Indian Economy- Poverty, Employment, Inequality, Informal Sector	09
	3.2 Policy Measures (Two-Three recent Programmes)- Poverty Alleviation Programmes; Employment Generation Programmes; Agriculture Development Programmes, Skill Development Programmes .....	09

## 11) Recommended books

### Semester I: Basic Reading List

- Agrawal A.N., Problems of Development & Planning, (Latest Edition)
- Ashwani Mahajan, 'Indian Economy' S. Chand & Company Ltd., New Delhi.
- Cherunilam Francis, 'Business Environment-Text and Cases' Himalaya Publishing House(Latest Edition)
- Faisal Ahmed 'Business Environment: Indian and Global Perspective' PHL Learning Pvt. Ltd. (Latest Edition)
- Fernando A.C. (2014) 'Business Environment' Pearson Education,
- Misra & Puri, 'Business Environment', Himalaya Publication House, Mumbai. (Latest Edition)
- Misra & Puri, 'Indian Economy', Himalaya Publication House, Mumbai. (Latest Edition)

### Recommended Reading

- Asian Development Bank (2009) 'Urban Poverty in India' BS Books

- Amit Kumar (2013) 'SMEs in India in post-1990s Era: Challenges and Opportunities, LAP Lambert Academic Publishing
- Das Keshab (2011) 'Micro and Small Enterprises in India: The Era of Reforms' Routledge India
- Gopal and Suman Banhri (2013) Indian Economy Performance and Policies. Pearson Publication Delhi.
- C.S.Prasad(2006) 'Sixtyyears of IndianAgriculture'New Century Publication, NewDelhi
- Indian Institute of Banking and Finance (2011) 'Small and Medium Enterprises in India' Taxmann
- Jaya PrakashPradhan (2008) 'Indian Multinational in the World Economy: Implications for Development', Bookwell Publications
- JagdishBhagwati, ArvindPangariay (2013) 'Reforms and Economic Transformation in India' OUP
- MohantyPrasanna (2014) 'Cities and Public Policy' Sage Publications
- Prakesh B.A. (2011) The Indian Economy Since 1991 Economic Reforms and performance, Pearson Publication Delhi.
- Thorat S. K (2008) 'Reservation in Private Sectors' Rawat Publications, ND

### **Semester II: Basic Reading List**

- Agrawal A.N., Problems of Development & Planning, (Latest Edition)
- Ashwani Mahajan, 'Indian Economy' S. Chand & Company Ltd., New Delhi.
- Cherunilam Francis, 'Business Environment-Text and Cases' Himalaya Publishing House(Latest Edition)
- Faisal Ahmed, 'Business Environment: Indian and Global Perspective' PHL Learning Pvt. Ltd. (Latest Edition)
- Fernando A.C. (2014) 'Business Environment' Pearson Education,
- Misra& Puri, 'Business Environment', Himalaya Publication House, Mumbai. (Latest Edition)
- Pathak, Bharati [2009] 'The Indian Financial System', 'Pearson Education Publication, New Delhi.

### **Recommended Reading**

- Bhasin, Niti (2006) “Banking Developments in India 1947 to 2007” New Century Publications.
- Bhadane Jaywant R. (2018) ‘Cashless India and Digital Economy’ International Publications, Kanpur
- Dasgupta Sukti, Sher Singh Verick (2016) ‘Transformation of Women at Work in Asia: An Unfinished Development Agenda, Sage
- Paul Justin (2010) ‘Business Environment-Text and Cases’ Tata McGraw Hill
- Khanna Tarun (2008) ‘Billions of Entrepreneurs: How India and China are Reshaping their Future and Yours’ Penguin India
- Kapila Uma (ed) Indian Economy Since Independence, Academic Foundation(2003)
- Panagariya Arvind (2010) ‘India: The Emerging Giant’ Oxford University Press
- Sobhan Rehman (2010) ‘Challenging the Injustice of Poverty: Agendas for inclusive Development in South Asia’ Sage
- Samanta R.K. (2000) “New Vista in Rural Development Strategies and Approaches” B.R. Publishing Corporation New Delhi
- Spana Newar, Tanvi Gaur (2015) ‘Economic Environment in India, Think Tank Publications, Jaipur

### 12) Qualification of teachers:

Qualification of teachers as per norms of SPPU will be masters in Economics and SET/NET/Ph.D.





**SAVITRIBAI PHULE PUNE UNIVERSITY**

(formerly University of Pune)

**F. Y. B. A. Political Science**

**Syllabus**

(Semester & Choice Based Credit System)

**(To be implemented from the Academic Year, 2019-20)**

**Savitribai Phule Pune University**  
**F. Y. B. A. Political Science**  
**(CBCS pattern to be implemented from 2019-2020)**  
**G-1 General Paper**  
**INTRODUCTION TO INDIAN CONSTITUTION**  
**Total Credits : 03**

**Objectives**

The contents of this course are designed with the following objectives:

1. To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
2. To familiarize students with the working of the Constitution of India.

<b>Semester-I</b>	<b>Period</b>
<b>Unit 1: Making of the Indian Constitution</b>	<b>12</b>
a) Historical Background	
b) Constituent Assembly	
c) Preamble	
d) Salient Features	
<b>Unit 2: Fundamental Rights, Duties and Directive Principles</b>	<b>12</b>
a) Fundamental Rights	
b) Fundamental Duties	
c) Directive Principles of State Policy	
<b>Unit 3: Federalism</b>	<b>12</b>
a) Salient Features of Indian Federalism	
b) Centre –State Relations	
c) Issues of Conflict (Water and Border Issues)	
<b>Unit 4: Constitutional Amendments: Scope and Limitations</b>	<b>12</b>
a) Constitutional Provisions	
b) Major Constitutional Amendments (42, 44 & 86)	
c) Basic Structure of the Indian Constitution	
<b>Semester- II</b>	
<b>Unit5: Legislature</b>	<b>12</b>
a) Union Legislature – Structure, Powers and Role	
b) State Legislature – Structure, Powers and Role	
<b>Unit6: Executive</b>	<b>12</b>
a) Union Executive – i) President and Vice President– Powers, Functions and Role	
ii) Prime Minister - Powers, Functions and Role	
iii) Council of Minister – Powers and Functions and Role	
b) State Executive- i) Governor - Powers, Functions and Role	
ii) Chief Minister – Powers, Functions and Role	
iii) Council of Minister – Powers and Functions and Role	

**Unit7: Judiciary****12**

- a) Supreme Court : Powers and Functions
- b) High Court : Powers and Functions
- c) Judicial Review and Judicial Activism

**Unit8: Electoral System****12**

- a) Election Commission:Composition, Functions and Role
- b) Chief Election Commissioner
- c) Electoral reforms

**References:**

- 1) Austin Granville, 1999, *The Indian Constitution: Cornerstone of a Nation*, Oxford, Oxford University Press.
- 2) Austin Granville, 2003, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press.
- 3) आवटे श्रीरंजनव राही श्रुती गणेश, 2019, *आपलं आयकार्ड*, पुणे, द युनिक अॅकॅडमी पब्लिकेशन,
- 4) Basu D.D., 2018, *Introduction to the Constitution of India*, New York, LexisNexis.
- 5) Brass Paul., 1994, *The Politics of Indian Since Independence*, Cambridge, Cambridge University Press,
- 6) बाचल वि. म., 2004, *भारतीय राज्यघटना आणि राजकीय व्यवहार*, पुणे, के सागर पब्लिकेशन.
- 7) भोळे भा.ल., 2015, *भारतीय गणराज्याचे शासन आणि राजकारण*, नागपूर, पिंपळापुरे प्रकाशन,.
- 8) चपळगावकर नरेंद्र, 2002, *राज्यघटनेचे अर्धशतक*, मुंबई, मौज प्रकाशन.
- 9) जाधव तुकारामवशिरापुरकर महेश, 2012, *भारतीय राज्यघटना व घटनात्मक प्रक्रिया*, पुणे, द युनिक अॅकॅडमी पब्लिकेशन
- 10) घांग्रेकरचिं. ग . 1997, *भारतीयराज्यघटना*, नागपूर, मंगेश प्रकाशन.
- 11) Jha Rajesh, 2012, *Fundamentals of Indian Political System*. Delhi, Dorling Kindersley (India) Pvt Ltd, Pearson Education Society.
- 12) कांबळे बाळ, वकील अलिम वदेवरे पी. डी., 2012, *भारताची राज्यघटना, राजकारण व कायदा*, पुणे, डायमंड प्रकाशन.
- 13) कश्यप सुभाष, (अनुवाद न. ब. पाटील) , 2001, *आपली संसद*, नॅशनल बुक ट्रस्ट इंडिया.
- 14) नांदेडकर व. गो., 2011, *भारतीय राज्यघटना आणि राज्यव्यवहार*, पुणे, डायमंड प्रकाशन.
- 15) पाटील बी.बी., 2016, *भारतीय शासन आणि राजकारण*, कोल्हापूर, फडके प्रकाशन.
- 16) साठे सत्यरंजन, 1998, *भारताच्या राज्यघटनेची ५० वर्षे*, पुणे, कॉन्टिनेन्टल प्रकाशन.
- 17) व्होरा राजेंद्र व पळशीकर सुहास, 2010, *भारतीय लोकशाही: अर्थ आणि व्यवहार*, पुणे, डायमंड प्रकाशन.

**Savitribai Phule Pune University**  
**F. Y. B. A. Political Science**  
**(CBCS pattern to be implemented from 2019-2020)**  
**G-1 General Paper (Optional)**  
**AN INTRODUCTION TO THE CONSTITUTION OF UNITED STATES OF**  
**AMERICA**  
**Total Credits : 03**

**Objectives**

To acquaint students with the important features of the Constitution of the United States of America and the basic framework of government of the USA

<b>Semester – I</b>	<b>Period</b>
<b>Unit: 1 Making of the U.S. Constitution</b>	<b>12</b>
a) Historical Background	
b) Preamble	
c) Salient Features	
<b>Unit: 2 Federal System</b>	<b>12</b>
a) Features	
b) State Autonomy	
c) Relations between the Federal Government and the States	
<b>Unit: 3 Fundamental Rights</b>	<b>12</b>
a) Nature of Fundamental Rights	
b) Development of Fundamental Rights	
<b>Unit: 4 Constitutional Amendments</b>	<b>12</b>
a) Constitutional Provisions	
b) Important Amendments (15 & 22)	

## Semester - II

<b>Unit: 5 Legislature</b>	<b>12</b>
a) Structure	
b) Powers	
c) Role	
<b>Unit: 6 Executive</b>	<b>12</b>
a) President: Powers and Functions	
b) Vice President: Powers and Functions	
c) Secretary: Powers and Functions	
<b>Unit: 7 Judiciary</b>	<b>12</b>
a) Structure i) Federal Court ii) State Court	
b) Powers and Functions	
c) Judicial Review	
<b>Unit: 8 Federal Election Commission</b>	<b>12</b>
a) Structure	
b) Functions	
c) Role	

### Readings

1. काळे अशोक, 1984, अमेरिकेची राज्यव्यवस्था, नागपूर विश्वभारती प्रकाशन.
2. पळशीकर सुहास व सुमंतयशवंत, 1988, अमेरिकेचे शासन, पुणे, निराली प्रकाशन
3. Wheare.K.C, 1980, Federal Government, 4th edn., Oxford and New York, Oxford University Press.
4. Wilson. James., 2014, *American Government*, 14th edn., Wadsworth Publishing Boston Massachusetts, USA.
5. घांग्रेकर चिं. ग. व धनवटे अरुण, 1996, आधुनिक राजकीय व्यवस्था, (इंग्लंड-अमेरिका-स्विट्झर्लंड) नागपूर, मंगेश प्रकाशन

## **F.Y.B.A. Compulsory English**

### **Prescribed Text: Literary Gleam: An Anthology of Prose and Poetry (Board of Editors: Orient BlackSwan)**

#### **Prose:**

1. Engine Trouble — R. K. Narayan
2. On Saying 'Please' — A. G. Gardiner
3. The Gift of the Magi — O. Henry
4. In Sahyadri Hills, A Lesson in Humility — Sudha Murthy
5. The Model Millionaire — Oscar Wilde
6. The Eyes are not Here — Ruskin Bond

#### **Poetry:**

1. A Red, Red Rose — Robert Burns
2. Leave this Chanting and Singing — Rabindranath Tagore
3. The Felling of a Banyan Tree — Dilip Chitre
4. My Heart Leaps Up — William Wordsworth
5. Ozymandias — P. B. Shelley
6. Success is Counted Sweetest — Emily Dickinson

#### **Grammar:**

1. Articles
2. Prepositions
3. Verbs
  - Regular and Irregular Verbs
  - Auxiliary Verbs: Primary and Modal
4. Punctuation
5. Tenses
6. Subject–Verb Agreement
7. Vocabulary

#### **Communication Skills:**

1. Greeting and Taking Leave
2. Introducing Yourself
3. Introducing People to One Another
4. Making Requests and Asking for Directions
5. Making and Accepting Apology
6. Inviting and Accepting/Declining Invitations
7. Making a Complaint
8. Congratulating, Expressing Sympathy and Offering Condolences
9. Making Suggestions, Offering Advice and Persuading



**Savitribai Phule Pune University**  
(Formerly University of Pune)

**Three Year B.A. (Bachelor of Arts) Degree Program in Psychology**  
(Faculty of Humanities)

**F.Y.B.A. PSYCHOLOGY**

**Choice Based Credit System**

**Syllabus**

**To be implemented from Academic Year 2019-2020**

## 1: Title of the course: B. A. with Psychology

## 2: Background:

Ministry of Human Resource Development (HRD), Govt. of India, has already initiated the process for developing New Education Policy (NEP) in our country to bring out reforms in Indian education system. University Grants Commission (UGC) participates more actively in developing National Education Policy, its execution and promotion of higher education in our country. The UGC has already initiated several steps to bring equity, efficiency and academic excellence in National Higher Education System. The important ones include innovation and improvement in course- curricula, introduction of paradigm shift in learning and teaching pedagogy, examination and education system.

The education plays enormously significant role in building of a nation. There are quite a large number of educational institutions, engaged in imparting education in our country. Majority of them have entered recently into semester system to match with international educational pattern. However, our present education system produces young minds lacking knowledge, confidence, values and skills. It could be because of complete lack of relationship between education, employment and skill development in conventional education system. The present alarming situation necessitates transformation and/or redesigning of education system, not only by introducing innovations but developing “learner-centric approach in the entire education delivery mechanism and globally followed evaluation system as well.

Majority of Indian higher education institutions have been following marks or percentage based evaluation system, which obstructs the flexibility for the students to study the subjects/courses of their choice and their mobility to different institutions. There is need to allow the flexibility in education system, so that students depending upon their interests and aims can choose inter-disciplinary, intra-disciplinary and skill-based courses. This can only be possible when choice based credit system (CBCS), an internationally acknowledged system, is adopted. The choice based credit system not only offers opportunities and avenues to learn core subjects but also exploring additional avenues of learning beyond the core subjects for holistic development of an individual. The CBCS will undoubtedly facilitate us bench mark our courses with best international academic practices. The CBCS has more advantages than disadvantages.

This course aims at enriching the minds of students and it has aims to develop a holistic and multidimensional understanding of the topics. It attempts to approach new areas of learning, develop competencies in the students thereby opening various avenues for self-discovery, academic understanding and employment. Students would be encouraged to develop an understanding of real life issues and participate in the programs and practices in the social context. Use of ICT and mass media and web based



sources is highly recommended to make the teaching-learning process interactive and interesting.

### 3: Structure of the course:

Year	Semester	Paper No.	Title of the Paper	Lectures per week	Credit for semester
First Year	1	DSC-PSY-1A	Foundations of Psychology	03	03
	2	DSC-PSY-1B	Introduction to Social Psychology	03	03

### 4: Implementation of UG course structure:

- 1: This is 6 semester 132 credit degree course.
- 2: Each theory credit is equivalent to 15 clock hours of teaching and each practical credit is equivalent to 30 clock hours of laboratory teaching in a semester.
- 3: There is 15 to 18 weeks (90 days) of teacher-student interaction during the semester.

Each semester shall have 3 credits for teaching. Each credit is equal to 15 hours, so this course shall have 45 teaching hours. In addition to that there shall be three hours allotted to internal evaluation. Changes as per the university guidelines shall be communicated from time to time.

F.Y.B.A. Psychology  
(w.e.f. 2019-2020)  
(Choice Based Credit System) 70:30-Pattern  
(70-Semester-End Exam & 30-Internal Evaluation)

**Course DSC-PSY- 1A: Foundations of Psychology**

**Course objectives and learning outcomes:**

After the completion of this course students will be able to demonstrate the following competencies:

- a) Understand the basic psychological processes and their applications in day to day life.
- b) Develop the ability to evaluate cognitive processes, learning and memory of an individual.
- c) Understand the importance of motivation and emotion of the individual.
- d) Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials.

**Unit 1: Psychology -Introduction: (12 lectures)**

- 1.1 Psychology : a Science, goals of psychology
- 1.2 The brief history & perspective of Psychology: (Structuralism, Functionalism, Gestalt, Psychoanalysis, Behaviorism)
- 1.3 Career Avenues in Psychology & Fields of Psychology: (Clinical, Industrial & Organizational, Educational, Social, Developmental, Health, Criminal & Forensic, Military, Sports, Neuropsychology, Environmental, Positive, Spiritual and Women & Child psychology.)
- 1.4 The Indian Psychology: Past and present
- 1.5 Application: Understanding Behaviour through Methods in Psychology

**Unit 2: Cognitive processes: (12 lectures)**

- 2.1 Sensation, Attention and Perception, nature of perception, laws of perceptual organization
- 2.2 Learning- Classical and Operant conditioning, observational learning
- 2.3 Memory-processes, information processing model(s)
- 2.4 Forgetting: Theories of forgetting
- 2.5 Application: Techniques for improving memory.

### **Unit 3: Motivation and Emotion:**

**(12 lectures)**

- 3.1 Motivation: Definition, Concept of Homeostasis & Maslow's Hierarchy of Motivation
- 3.2 Types of Motivation: Physiological, Psychological & Social
- 3.3 Motivational Conflicts: Intra-Conflicts & Inter-Conflicts
- 3.4 Emotion: Definitions, Nature & Importance, Basic Emotions (Joy, Excitement, Tenderness, Sadness, Anger, Fear & Love)
- 3.5 Application: Conflict Resolving Skills

### **Unit 4: Personality and Intelligence:**

**(12 lectures)**

- 4.1 Personality – Definitions, Nature
- 4.2 Personality as a set of traits: Cattell's, Allport's & Big Five Theory of Personality
- 4.3 Freud's Psychoanalytical Theory of Personality and Transactional Analysis
- 4.4 Intelligence: Definitions, Theories of Intelligence (Gardner's Theory, Cattell's Theory of Intelligence)
- 4.5 Applications: Testing and enhancing Emotional intelligence.

#### **References:**

1. Ciccarelli, S. K.; White J. N. Adapted by Girishwar Misra (2018). Psychology (5<sup>th</sup> Edition). Pearson.
2. Chadha, N.K. & Seth, S. (2014). The Psychological Realm: An Introduction. Pinnacle Learning, New Delhi.
3. Carole, W. and Carol, T. (2007). Psychology (7th Edition). Pearson Education, India.
4. Feldman S. R.(2009). Essentials of understanding psychology ( 7th Ed.) New Delhi : Tata Mc Graw Hill.

#### **Books in Marathi Language:**

1. बच्छाव, बडगुजर आणि शिंदे (२००१). सामान्य मानसशास्त्र. स्वयंभू प्रकाशन, नाशिक
2. मुंदडा आणि खलाने (२०१३). मानसशास्त्राची मूलतत्त्वे. अथर्व प्रकाशन, जळगांव
3. अभ्यंकर, ओक आणि गोलविलकर (२०१४). मानसशास्त्र: वर्तनाचे शास्त्र. पिअर्सन
4. देशपांडे चंद्रशेखर आणि सहकारी (२०१४). सूक्ष्म कौशल्ये: मानसशास्त्रीय समुपदेशन प्रक्रियेचा गाभा. उन्मेष प्रकाशन

घटक १ : मानसशास्त्र ओळख

(१२ तास)

- १.१ मानसशास्त्र : विज्ञान, मानसशास्त्र विषयाची उद्दिष्ट्ये
- १.२ मानसशास्त्राचा थोडक्यात इतिहास आणि विचार प्रवाह (रचनावाद, कार्यवाद, गेस्टाल्ट, मनोविश्लेषणवाद, वर्तनवाद)
- १.३ भारतातील मानसशास्त्र : भूतकाळ आणि वर्तमान
- १.४ मानसशास्त्रातील करीयरच्या संधी आणि क्षेत्रे (चिकित्सा, औद्योगिक आणि संघटन, शैक्षणिक, सामाजिक, वैकासिक, आरोग्य, गुन्हेगारी व न्यायसहाय्यक, सैनिकी, क्रीडा, चेतामानसशास्त्र, पर्यावरण, सकारात्मक, अध्यात्मिक, स्त्री आणि बाल मानसशास्त्र)
- १.५ उपयोजन : मानसशास्त्रीय पद्धतीद्वारा वर्तन समजावून घेणे

घटक २ : बोधनिक प्रक्रिया

(१२ तास)

- २.१ वेदन, अवधान आणि संवेदन, संवेदनचे स्वरूप, संवेदन संघटनाची तत्वे
- २.२. अध्ययन – अभिज्ञान आणि साधक अभिसंधान, बोधानिक आणि निरीक्षणात्मक अध्ययन
- २.३ स्मृती- प्रक्रिया, माहिती संस्करण प्रारूपे
- २.४ विस्मरण : विस्मरणाचे सिद्धांत
- २.५ उपयोजन : स्मृती सुधार तंत्रे

घटक ३ : प्रेरणा आणि भावना

(१२ तास)

- ३.१ प्रेरणा : व्याख्या, शरीर तापमान नियमन संकल्पना आणि मॅस्लो यांचे प्रेरणा विषयक अधिश्रेणी
- ३.२ प्रेरणांचे प्रकार : शारीरिक, मानसिक आणि सामाजिक
- ३.३ प्रेरणा संघर्ष : व्यक्ती अंतर्गत आणि आंतरव्यक्तिक संघर्ष
- ३.४ भावना : व्याख्या, स्वरूप आणि महत्व, मुलभूत भावना (आनंद, उत्साह, प्रेमळपणा, खिन्नता, राग, भीती आणि प्रेम)
- ३.५ उपयोजन : संघर्ष निराकरण कौशल्ये

घटक ४ : व्यक्तिमत्व आणि बुद्धिमत्ता

(१२ तास)

- ४.१ व्यक्तिमत्व – व्याख्या, स्वरूप
- ४.२ व्यक्तिमत्व गुणविशेषांचा संघात : व्यक्तिमत्वाचे कॅटल, आलपोर्ट आणि पंच घटक सिद्धांत
- ४.३ फ्राइड यांचा व्यक्तिमत्व विषयक मनोविश्लेषणात्मक सिद्धांत आणि आंतरक्रिया विश्लेषण
- ४.४ बुद्धिमत्ता : व्याख्या, बुद्धिमत्ता सिद्धांत (गार्डनर चा सिद्धांत, कॅटल चा बुद्धिमत्ता सिद्धांत)
- ४.५ उपयोजन : चाचणी, भावनिक बुद्धिमत्ता वाढविणे

F.Y.B.A. Psychology  
(w.e.f. 2019-2020)  
(Choice Based Credit System) 70:30-Pattern  
(70-Semester-End Exam & 30-Internal Evaluation)

**Course DSC-PSY- 1B : Introduction to Social Psychology**

**Course objectives and learning outcomes:**

After the completion of this course students will be able to demonstrate the following competencies:

- a) Understand the basics of social psychology.
- b) Understand the nature of self, concept of attitude and prejudice of the individual.
- c) Assess the interactional processes, love and aggression in our day today life. .
- c) Understand group dynamics and individual in the social world.

**Unit 1: Introduction:**

**(Total 12 Lectures)**

- 1.1 Definition, Brief history of social psychology (special emphasis on India),
- 1.2 Scope of social psychology
- 1.3 Levels of social behaviour
- 1.4 Approaches towards understanding social behaviour
- 1.5 Application: Community mental health

**Unit- 2.Individual Level Processes**

**(Total 12 Lectures)**

- 2.1 Difference between Social Cognition & Social Perception.
- 2.2 Self –Concept: Nature, Self-regulation and self-presentation.
- 2.3 Attitude: Definition, components, Dimensions and formation of attitude
- 2.4 Prejudice: Causes.
- 2.5 Application: Formation of attitude and Prejudice eradication

### **Unit 3: Interpersonal processes:**

**(Total 12 Lectures)**

- 3.1 Interpersonal attraction, love
- 3.2 Pro-social behaviour
- 3.3 Locus of control, increasing our helping nature.
- 3.4 Aggression: Meaning, Nature and causes of Aggression
- 3.5 Application: Prevention and reducing aggression

### **Unit- 4.Group Dynamics**

**(Total 12 Lectures)**

- 4.1 Groups: When we join and when we leave, The benefits of joining
- 4.2 Cooperation and Conflict
- 4.3 Conformity; Factors affecting Conformity, Obedience & Authority
- 4.4 Group decision making
- 4.5 Application: Team Building

#### **Books for Reference**

1. Baron, R. A., Branscombe, N. R., & Byrne, D. Bhardwaj, Gopa. (2008). Social Psychology. (12th ed.). New Delhi: Pearson Education, Indian subcontinent adaptation 2009
2. Aronson, E., Wilson, T. D., & Akert, R. M. (2007). Social Psychology. (6th edi.), New Jersey: Pearson Education prentice Hall
3. Baumeister, R. F., & Bushman, B. J. (2008). Social Psychology and Human Nature. International student edition, Thomson Wadsworth USA
4. Myers, D. G. (2006). Social Psychology. (8th edi.), Tata McCraw- Hill Publication.

#### **Books in Marathi Language:**

1. नातू, वैद्य आणि राजहंस (२००८). सामाजिक मानसशास्त्र. पिअर्सन
2. गाडेकर, पाटील, इनामदार (२००७). प्रगत सामाजिक मानसशास्त्र. डायमंड, पुणे.
3. तडसरे, तंबाके, पाटील, दरेकर (२००३). सामाजिक मानसशास्त्र. फडके प्रकाशन, कोल्हापूर.
4. ढोरमारे आणि रसाळ (२०१५). सामाजिक मानसशास्त्र. उन्मेष प्रकाशन, पुणे.

घटक १ : ओळख

(१२ तास)

- १.१ सामाजिक मानसशास्त्र ची व्याख्या, थोडक्यात इतिहास (भारतीय संदर्भ)
- १.२ सामाजिक मानसशास्त्र विषयाची व्याप्ती
- १.३ सामाजिक वर्तनाचे स्तर
- १.४ सामाजिक वर्तन समजावून घेताना दृष्टीकोन
- १.५ उपयोजन : लोकसमुहाचे मानसिक आरोग्य

घटक २ : व्यक्ती स्तरावरील प्रक्रिया

(१२ तास)

- २.१ सामाजिक बोधन आणि सामाजिक संवेदन यातील फरक
- २.२ स्व संकल्पना : स्वरूप, स्व-नियमन आणि स्व सादरीकरण
- २.३ अभिवृत्ती: व्याख्या, घटक, अभिवृत्ती चे घटक आणि निर्मिती
- २.४ पूर्वग्रह : कारणे
- २.५ उपयोजन : अभिवृत्ती निर्मिती आणि पूर्वग्रह निर्मुलन

घटक ३ : आंतरव्यक्तिक प्रक्रिया

(१२ तास)

- ३.१ आंतरव्यक्तिक आकर्षण, प्रेम
- ३.२ समाज-अनुकूल वर्तन
- ३.३ नियंत्रण केंद्र, सहकार्य वर्तन वाढविणे
- ३.४ आक्रमकता : अर्थ, स्वरूप आणि आक्रमकतेची कारणे
- ३.५ उपयोजन : आक्रमकता प्रतिबंधन आणि कमी करणे

घटक ४ : समूह गतिमानता

(१२ तास)

- ४.१ समूह : आपण समुहात केव्हा दाखल होतो आणि केव्हा सोडून देतो, समूह सदस्य होण्याचे फायदे
- ४.२ सहकार्य आणि संघर्ष
- ४.३ अनुपालन : अनुपालन वर परिणाम करणारे घटक, आज्ञाधारकता आणि अधिकार
- ४.४ सामुहिक निर्णय घेणे
- ४.५ उपयोजन : संघभाव वाढविणे

# Question Paper Pattern for Each Semester (2019-20)

## (Choice Based Credit System)

F Y B A Psychology:

(70-Semester-End Exam & 30-Internal Evaluation)

Hours: Three

Marks: 70

Q1 Answer the following questions in 100 words each (any four)

Ask six questions- each question for 5 marks 5X4 =20

Q2 Answer the following questions in 200 words each (any two)

Ask four questions -each question for 10 marks 10X2 =20

Q3 Answer the following questions in 400 words each ( any one)

Ask two questions -each question for 20 marks 20X1 =20

Q4 write short notes ( any Two)

Ask four short notes -each short note for 5 marks 5X2 =10

-----**Total = 70 Marks**

### **Pattern for Internal Evaluation:**

- |  |   |            |
|--|---|------------|
| 1. Internal Mid-Semester Examination–          | - | - 20 Marks |
| 2. Home Assignments/Oral/Lecture Notes/Project |   | – 10 Marks |

**TOTAL–30 Marks**



**पुणे विद्यापीठ**  
**पुनर्रचित अभ्यासक्रम**  
**एम. ए. भाग 1 – विषय मराठी**  
**जून 2013–14 पासून**

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**पुणे विद्यापीठ**  
**एम.ए. (मराठी ) भाग 1 साठी श्रेयांक व श्रेणी पध्दतीवर आधारित अभ्यासक्रम**  
**सत्र पहिले व दुसरे**  
**श्रेयांक व श्रेणी पध्दतीवर आधारित पुनर्रचित अभ्यासक्रम**  
**शैक्षणिक वर्ष 2013–14 पासून पुढे**

• प्रास्ताविक –

एम.ए. मराठीला येणा-या विद्यार्थ्यांचा बी. ए. पातळीवरील विशेषतः विशेषस्तराच्या पातळीवरील मराठीचा अभ्यास झालेला असतो. त्यांच्या या पूर्वज्ञानाचा विचार करता भारतीय साहित्यशास्त्र, प्राथमिक पातळीवरील भाषाविज्ञान, साहित्यकृतीचा संहितानिष्ठ अभ्यास या विषयाशी विद्यार्थी परिचित असतो. वाङ्मयप्रकाराची संकल्पना त्यांना माहित नसली तरी वाङ्मय प्रकारांशी त्यांची तोंड ओळख झालेली असते. समकालीन वाङ्मय प्रवाहांची विद्यार्थ्यांला बरीचशी समज आलेली असते. या गोष्टी लक्षात घेतल्या म्हणजे एम.ए.च्या दान वर्षांच्या अभ्यासक्रमाची उद्दिष्टे पुढीलप्रमाणे ठरविता येतात.

1. विद्यार्थ्यांला आपल्या आवडीचे, संशोधनाचे क्षेत्र निश्चित करता येणे.
2. मराठी भाषा आणि वाङ्मयाचे प्रगत ज्ञान होणे.
3. समकालीन वाङ्मयीन प्रवाहांचे नीट आकलन होणे.
4. वाङ्मयीन प्रश्नासंबंधी विचार करण्याची जाण येणे.
5. वाङ्मयीन आणि जीवनविषयक जाणीव प्रौढ होणे.
6. विद्यार्थ्यांच्या लेखनगुणांना उत्तेजन मिळणे.
7. चिकित्सक अभ्यासाची क्षमता वाढविणे.

8. साहित्याभ्यासाच्या संदर्भात विवेच्य विषयांची आणि त्यांच्या प्रस्तुताप्रस्तुततेची जाण निर्माण करण्यास मदत करणे अशा विषयाच्याचिकित्सेची समज वाढविणे.
  9. विशिष्ट कालखंडातील साहित्याच्या व्याप्तीबद्दल जाण निर्माण होण्यास मदत करणे, अशा विषयांच्या चिकित्सेची समज वाढविणे.
  10. लेखकाच्या समग्र लेखक म्हणून अभ्यासाची समज निर्माण होण्यास मदत करणे, अशा अभ्यासाची क्षमता वाढविणे.
  11. साहित्यकृतीच्या, साहित्यप्रकाराच्या तौलनिक अभ्यासाबाबत दिशा, व्याप्ती आणि मर्यादा यांची समज निर्माण होण्यास मदत करणे, अशा अभ्यासाची क्षमता वाढविणे.
  12. साहित्याविषयीच्या प्राचीन, मध्ययुगीन, आधुनिक भारतीय व पाश्चात्य विचारांबाबत समज वाढविण्यास मदत करणे. अशा विचारांचा सूक्ष्म विश्लेषक व चिकित्सक अभ्यास करण्याची क्षमता वाढविणे.
  13. साहित्याच्या व्यवच्छेदक लक्षणांबाबत विचारांची आणि वाङ्मयीन मूल्यमापनाच्या दृष्टीची समज वाढविणे.
  14. साहित्याभ्यासाच्या संदर्भातील विषयांची ,त्यांच्या प्रस्तुताप्रस्तुततेची जाण निर्माण करणे.
  15. समीक्षा आणि उपयोजित समीक्षा याविषयी, उचित सनद निर्माण होण्यास मदत करणे अशा पध्दतीला समीक्षा करण्याची क्षमतावाढविणे.
  16. भाषेचे विविध व्यवहार आणि साहित्याच्या संदर्भातील भाषाव्यवहार याविषयी आकलनाची क्षमता वाढविणे.
  17. लेखन-संपादन, लेखन-विद्या, भाषांतर, रूपांतर प्रक्रियांविषयी आणि त्यासंबंधीच्या समस्यांविषयी माहिती देणे, या सर्व विषयांच्या संदर्भात-समज वाढविणे. वरील सर्व प्रकारचे लेखन करता यावे म्हणून प्रात्यक्षिके करून घेणे आणि जागतिकीकरणात निर्माण झालेल्या विविध नोकरी-व्यवसायांच्या संधींना सामोरे जाण्याची क्षमता निर्माण करणे.
  18. एकंदरीत विद्यापारंगत एम.ए. ;मराठी या पदवीला विद्यार्थ्यांने पात्र होणे.
- एम.ए. च्या अभ्यासाची वरील उद्दिष्टे व विद्यार्थ्यांचा बी.ए.च्या विशेषस्तरावर झालेला अभ्यास लक्षात घेवून एम.ए.;मराठीच्या अभ्यासक्रमाची रचना जून 2013-14 पासून पुढीलप्रमाणे केली आहे.

**एम.ए. (मराठी ) भाग 1 (सत्र एक व सत्र दोन )**  
**श्रेयांक व श्रेणी पध्दतीवर आधारित पुनर्रचित अभ्यासकम**  
**शैक्षणिक वर्ष 2013 – 2014 पासून पुढे**  
**अभ्यासकम आराखडा**

- **एम.ए. (मराठी ) भाग 1**
  - 1 Oयावहारिक आणि उपयोजित मराठी
  - 2 मध्ययुगीन मराठी वाङ्मयाचा इतिहास ( प्रारंभ ते 1818)
  - 3 भाषाविज्ञान – वर्णनात्मक आणि सामाजिक भाषाविज्ञान
- **एम.ए. (मराठी ) भाग 2**
  - 4 प्रसारमाध्यमे आणि साहित्य व्यवहार
  - 5 साहित्य : समीक्षा व संशोधन
  - 6 विशेष लेखकाचा अभ्यास – ( मध्ययुगीन / आधुनिक )

याशिवाय पुढे निर्देशिलेल्या ऐच्छिक विषयामधून प्रत्येक वर्षी एक याप्रमाणे दोन विषयांची निवड विद्यार्थ्यांस करता येईल.

- **भाग एक साठी**
  - 1- ग्रामीण साहित्य आणि दलित साहित्य
  - 2- मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी ( प्रारंभ ते 1818)
  - 3- तौलनिक साहित्याभ्यास आणि भाषांतर मीमांसा
  - 4- वाङ्मयेतिहासलेखनविद्या
  - 5- अलंकार व छंद आणि व्याकरण
- **भाग दोन साठी**
  - 6- सौंदर्यशास्त्र
  - 7- लोकसाहित्य व मराठी लोकसाहित्य
  - 8- लेखनविद्या व निबंधलेखन
  - 9- मराठीतील वैचारिक साहित्य
  - 10- साहित्य : सर्जन व उपयोजन



## एम.ए. (मराठी ) भाग 1 श्रेयांक व श्रेणी पध्दतीवर आधारीत अभ्यासक्रम

I= 1

अभ्यासपत्रिका क्र.1 – व्यावहारिक आणि उपयोजित मराठी भाग-1

अभ्यासपत्रिका क्र.2 – मध्ययुगीन मराठी वाङ्मयाचा इतिहास( प्रारंभ ते 1600 ) )

अभ्यासपत्रिका क्र.3 – भाषाविज्ञान-वर्णनात्मक

अभ्यासपत्रिका क्र.4 – ऐच्छिक विषय

1 ग्रामीण साहित्य

2 मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी ( प्रारंभ ते 1818)

3 तौलनिक साहित्याभ्यास

4 वाङ्मयेतिहासलेखनविद्या

5 अलंकार व छंद

सत्र 2

अभ्यासपत्रिका क्र.1- व्यावहारिक व उपयोजित मराठी भाग-2

अभ्यासपत्रिका क्र.2- मध्ययुगीन मराठी वाङ्मयाचा इतिहास (1600 ते 1818)

अभ्यासपत्रिका क्र.3- भाषाविज्ञान-सामाजिक

अभ्यासपत्रिका क्र.4 –ऐच्छिक

1- दलित साहित्य

2- मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी (1818 ते 1960)

3- भाषांतर मीमांसा

4- वाङ्मयेतिहासलेखनविद्या भाग : 2

5- व्याकरण

वरील अभ्यासक्रम दोन विभागात विभागलेला असून प्रत्येक सत्राशेवटी अंतर्गत परीक्षा होणे आवश्यक आहे. त्यासाठी एकूण 64 श्रेयांक असतील प्रत्येक सेमीस्टरसाठी 16 श्रेयांकाचा

अभ्यासकम असेल. प्रत्येक श्रेयांकासाठी एकूण 15 घडयाळी तासिका असतील. एका अभ्यासपत्रिकेसाठी 60 तासिका आवश्यक आहेत.



## पुणे विद्यापीठ

शैक्षणिक वर्ष 2013–14 पासून पुढे

एम.ए. (मराठी ) भाग 1 श्रेयांक व श्रेणी पद्धतीवर आधारीत अभ्यासकम

अभ्यासपत्रिका क्रमांक – 1 : व्यावहारिक आणि उपयोजित मराठी

उद्दिष्टे :

1. विविध स्तरावरील भाषिक कौशल्ये व क्षमता विकसित करणे.
2. भाषाव्यवहाराचे औपचारिक आणि अनौपचारिक क्षेत्रनिहाय स्वरूप समजावून देणे.
3. व्यक्तिमत्त्व विकासासाठी भाषिक कौशल्ये आत्मसात करणे.
4. प्रसार माध्यमांचे स्वरूप व त्यासाठी भाषाव्यवहाराचे स्वरूप समजावून देणे.
5. वाङ्मयीन व्यवहार व प्रकाशन व्यवसायाचे स्वरूप समजावून देणे.
6. मराठीच्या प्रमाणभाषेचे लेखन व मृद्वितशोधन या संकल्पना समजावून प्रत्यक्ष उपयोजनकरता येणे.
7. मुलाखत लेखनाची तंत्रे व कौशल्ये यांचा वापर करता येणे.
8. अर्जलेखन व पत्रलेखनाचा व्यावहारिक वापर करता येणे.
9. भाषांतर आणि अनुवादप्रक्रिया यांची तात्त्विक व व्यावहारिक माहिती देणे.
10. निवेदन कौशल्याची तात्त्विक व व्यावहारिक माहिती देणे.
11. जनसंपर्क कौशल्याची आवश्यकता समजावणे व त्याच्या वापराची तंत्रे अंगीकृत करणे



एम.ए. (मराठी ) भाग 1 – प्रथम सेमीस्टर – श्रेयांकने 04

**I= 1**

अभ्यासपत्रिका क्र.1– व्यावहारिक आणि उपयोजित मराठी भाग–1

घटक 1 मराठीच्या प्रमाण भाषेचे लेखन व मुद्रितशोधन

अ

शुद्धलेखनाची संकल्पना,  
शुद्धलेखनाची आवश्यकता,  
शुद्ध लेखनाचे नियम दिलेला उतारा शुद्ध करून लिहिणे.

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मुद्रितशोधनाची संकल्पना आणि स्वरूप  
मुद्रितशोधनाच्या खुणा, चिन्हे आणि त्यांचा वापर  
मुद्रितशोधनाची आवश्यकता,  
दिलेल्या उता-याचे खुणांच्या साहाय्याने मुद्रितशोधन करणे.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

घटक 2 वाङ्मयीन व्यवहार व प्रकाशन व्यवसाय

अ

विविध साहित्यसंस्था व त्यांचे वाङ्मयीन काय  
साहित्य संस्था व त्यांची मुखपत्र  
साहित्य संस्थांकडून आयोजित केली जाणारी साहित्य संमेलने.

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वाङ्मयीन नियतकालिके व अनियतकालिक,  
दिवाळी अंक, विशेषांक, स्मरणिका इ. चे संपादन.  
मांडणी ,जाहिरात आणि आय.एस.एस.एन. ची माहिती,

क

प्रकाशन संस्था, पुस्तक प्रकाशन , प्रकाशन व्यवसाय,

संहिता निवड, ग्रंथमांडणी व सजावट, मुखपृष्ठ, मलपृष्ठ, बांधणी जाहिरात ,वितरण आणि आय.एस.बी. एन.ची माहिती.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

घटक 3 मुलाखत

- 1 मुलाखतीचे स्वरूप, तंत्र व कौषल्ये
- 2 मुलाखतीचे प्रकार
- 3 माध्यमनिहाय मुलाखती,विषयनिहाय मुलाखती
- 4 मुलाखतीची पूर्वतयारी, मुलाखतीची प्रश्नसूची,
- 5 मुलाखत लेखन

• यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

घटक 4 अर्जलेखन व पत्रलेखन

- 1 अर्जाचे स्वरूप व प्रकार
- 2 पत्रलेखनाचे विविध प्रकार
- 3 प्रशासनिक पत्रव्यवहार
- 4 प्रशासनिक परिभाषा

• यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी. पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा कमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

कमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05

<b>4</b>	वस्तुनिष्ठ परीक्षा (Short Quizzes)	<b>05</b>
<b>5</b>	विस्तार कायZ (Extension work)	<b>05</b>
<b>6</b>	खुले पुस्तक परीक्षा (Open book Test)	<b>05</b>
<b>7</b>	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	<b>05</b>
<b>8</b>	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	<b>05</b>
<b>9</b>	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	<b>05</b>





अभ्यासपत्रिका क्र.1 –व्यावहारिक व उपयोजित मराठी,  
भाग-2 ( 4 Credit)

सत्र २

?kVd % 5 भाषांतर व अनुवादलेखन

- १ भाषांतराचे स्वरूप
- २ भाषांतराची आवश्यकता व महत्त्व
- ३ भाषांतराचे विविध प्रकार
- ४ भाषांतर, अनुवाद,भावानुवाद आणि रूपांतर यातील साम्य-भेद
- ५ इंग्लिश उता-याचे मराठीत भाषांतर करणे
- ६ हिंदी उता-याचे मराठीत भाषांतर करणे.

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?kVd 6 & fuosnu dkSS'kY;

- १ निवेदनाचे स्वरूप, निवेदनाची आवश्यकता
- २ निवेदनाची तंत्रे, निवेदनाची शैली
- ३ विविध कार्यक्रमांचे आयोजन-नियोजन
- ४ विविध कार्यक्रमांचे निवेदन आणि सूत्रसंचालन
- ५ आकाशवाणी, दूरदर्शन वरील सांस्कृतिक कार्यक्रम, जाहीर कार्यक्रम इत्यादी,
- ६ प्रभावी निवेदनाची गुण वैशिष्ट्ये

;klkBh 15 O;k[k;kus ?;kohr o ,d Js;kadu ns.ks- ( 1 Credit)

?kVd 7 & tulaidZ dkS'kY;

१. जनसंपर्काचे स्वरूप व आवश्यकता
२. जनसंपर्क कौशल्याची तंत्रे,जनसंपर्क कौशल्याची भाषा

३. माहिती व जनसंपर्क अधिकारी
४. शासन, विद्यापीठे, शैक्षणिक संस्था, बँका, कंपन्यांसाठी जनसंपर्काचे महत्त्व

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

## ?kVd 8 & प्रकल्पलेखन

- 1 विद्यार्थ्यांच्या अंगी असेलेली विविध कौशल्ये व तंत्रे समजून घेणे
- 2 कौशल्यांच्या प्रभावी उपयोजनासाठी प्रात्यक्षिक आवश्यक घेणे
- 3 प्रकल्पलेखनास 10 गुण असतील प्रकल्पलेखनासाठी नमुना सूची :

१. आकाशवाणीवरील प्रमुख कार्यकम,
२. दूरदर्शनचे सांस्कृतिक क्षेत्रातील कार्य.
३. आकाशवाणी/दूरदर्शन/नियतकालिकासाठी प्रत्यक्ष मुलाखत घेणे.
४. शैक्षणिक सहल आयोजित करणे.
५. प्रसारमाध्यमांच्या कार्यालयांना, प्रकाशन संस्थांना यांचे कार्यालयीन कामकाज
६. संगणकाचा वापर

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सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semester Pattern) for colleges या पुस्तिकेतील मुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05

4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



● संदर्भ ग्रंथ –

- :
- व्यावहारिक मराठी पुणे विद्यापीठ प्रकाशन
  - व्यावहारिक मराठी डॉ.कल्याण काळे, डॉ.दत्तात्रय पुंडे पुणे
  - व्यावहारिक मराठी संपा. डॉ.स्नेहल तावरे, पुणे-30
  - व्यावहारिक मराठी डॉ.लीला गोविलकर,डॉ.जयश्री पाटणकर,
  - व्यावहारिक मराठी डॉ.सयाजीराजे मोकाशी,प्रा.रंजनानेमाडे,
  - व्यावहारिक मराठी ल.रा.नशिराबादकर, फडके प्रकाशन, कोल्हापूर.
  - व्यावहारिक मराठी विशेषांक नवभारत ,आ. सप्टेंबर 1982 ,प्राज्ञ पाठशाळा, वाई
  - मराठी शुध्दलेखन प्रदीप मो.रा.वाळंबे ,जुनी आ, नितीन प्रकाशन, पुणे-30
  - मराठी शुध्दलेखन प्रदीप मो.रा.वाळंबे, संपा. अरुण फडके,पुणे-30
  - शुध्दलेखन विवेक डॉ. द.न.गोखले, सोहम प्रकाशन, पुणे-30
  - मराठी भाषेची संवाद कौशल्ये य.च.म.मुक्त विद्यापीठ, नाशिक, पुस्तक क. 1 ते 8.
  - प्रसार माध्यमांसाठी लेखनकौशल्ये य.च.म.मुक्त विद्यापीठ, नाशिक
  - संपादन : स्वरूप व कौशल्ये य.च.म.मुक्त विद्यापीठ, नाशिक
  - प्रशासनिक मराठी भाषेचा विकास गीता भागवत,राज्य मराठी विकास संस्था,प्रशासन, मुंबई
  - मुद्रित शोधन वाय.ए.धायगुड,दि.पूना प्रेस ओनर्स असोसिएशन
  - शोधविज्ञान कोश डॉ. दु.का.संत,पुणे विद्यार्थी गृह, पुणे-30
  - भाषांतर मीमांसा संपा. डॉ.कल्याण काळे,डॉ. अंजली सोमण
  - भाषा : स्वरूप, सामर्थ्य व सौंदर्य डॉ. वा. के. लेले,राजहंस प्रकाशन, पुणे-30

19. अनुवाद : स्वरूप और विवेचन य.च.म.मुक्त विद्यापीठ, नाशिक
20. साहित्य संवाद प्रा.वि.शं. चौघुले,प्रतिमा प्रकाशन, पुणे-30
21. संवाद शास्त्र श्रीपाद जोशी,संभव प्रकाशन, नागपूर
22. माध्यम चित्रवाणी आकाशानंद,ग्रंथकार प्रकाशन, मुंबई
23. विवेकमंडळ श्री.म.माटे,व्हीनस प्रकाशन, पुणे-2
24. महाराष्ट्र साहित्य पत्रिका;साहित्यसंस्था विशेषांकद्वएप्रिल-मे-जून 1986,अंक 237
25. म.सा.पत्रिका ;शताब्दी महोत्सव 1906-2006, एप्रिल-सप्टेंबर2006:अंक 317, 318
26. म.सा.पत्रिका एप्रिल-मे-जून 2005वृत्तपत्र चित्रवाणी डॉ.सुधाकर पवार ,नागपूर
28. माहितीमय समाजाचे समाजशास्त्र य.च.म.मुक्त विद्यापीठ, नाशिक
29. व्यक्तिमत्व विकास य.च.म.मुक्त विद्यापीठ, नाशिक
30. साहित्याची भूमी श्री.पु.भागवत,ग्रंथाली प्रकाशन,दादर,मुंबई
31. भाषा : अंतःसूत्र आणि व्यवहार संपा.मु.ग.पानसे
32. भाषांतर विद्या : स्वरूप आणि समस्या डॉ. रमेश वरखेडे. आणि चंद्रकांत पाटील
34. भाषा: मातभाषा आणि परभाषा रा.सो. सराफ
35. चिंतन आणि चर्चा श्री.ना. बनहट्टी
36. शासन व्यवहारात मराठी भाषा संचालनालय, महाराष्ट्र,शासन;
37. महाराष्ट्र साहित्य परिषद म श्री.दीक्षित,राज्य मराठी विकास संस्था, मुंबई
38. साहित्याची भाषा डॉ. भालचंद्र नेमाडे
39. साहित्य संभेलनाचे महाभारत डॉ. भीमराव कुलकर्णी,सुपर्ण प्रकाशन, पुणे
40. शतकाची विचारशैली ;खंड 1,2,3, डॉ.रमेश धोंगडे,दिलीपराज प्रकाशन, पुणे
41. संवाद संपा. अरुण शेवते,मुळा एज्य. सोसायटी, सोनई
42. संमेलनस्मृती - संपा. डॉ. विश्वास गायकवाड, डॉ.बाळासाहेब गुंजाळ,डॉ. वेदश्री थिंगळे,
43. सामाजिक संशोधन पध्दती डॉ. पु.ल. भांडारकर,विद्या बुक्स,औरंगाबाद.
44. समाजशास्त्रीय संशोधन : प्रा. रा.ना. घाटोळे, मंगेश प्रकाशन,
45. संशोधन पध्दतीशास्त्र व तंत्रे डॉ. प्रदीप आगलावे,विद्या प्रकाशन, नागपूर
46. दलितांची नियतकालिके हरिश्चंद्र निर्मळे,सुगावा प्रकाशन, पुणे
47. सुगम मराठी व्याकरण लेखन मो.रा.वाळंबे,नितीन प्रकाशन, पुणे
48. मराठी नियतकालिकांचा वाङ्. अभ्यास, डॉ.उषा मा देशमुख,अभ्यास खंड 1त 3.,
49. मराठी लेखनकोश अरुण फडके,ढवळे प्रकाशन, मुंबई
- 50.भाषांतर चिकित्सा, डॉ. मधुकर मोकाशी

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**?kVd 1 &**

- 1 महाराष्ट्र , मराठी भाषा : उगम , विकास
- 2 मराठी भाषेचे स्वरूप व स्थित्यंतरे ,
- 3 कोरीव लेख आणि इतर ग्रंथ यांमधून आलेल्या मराठी वाङ्मयपरंपरेचा अभ्यास
- 4 संत काव्याच्या प्रेरणा, स्वरूप , संत कवी व कवयित्री आणि संत वाङ्मय समाजप्रबोधनाचे केलेले कार्य.

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**?kVd 2 &**

- 1 मुकुंदराजाची काव्यनिर्मिती : प्रेरणा व स्वरूप,
- 2 आद्यत्वासंबंधीच्या वादाची स्थूल कल्पना
- 3 महानुभवांची वाङ्मयनिर्मिती : प्रेरणा, स्वरूप, ऐतिहासिक महत्त्व
- 4 महानुभवांचे वाङ्मयाचे मराठी वाङ्मयपरंपरेतील स्थान

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## कVd 3 &

- 1 संत ज्ञानेश्वरांची भावडे/संत नामदेवांची वाङ्मयनिर्मिती – प्रेरणा, प्रवृत्ती स्वरूप आणि कार्ये
  - 2 संत मेळा साहित्यनिर्मिती – प्रेरणा, प्रवृत्ती स्वरूप आणि कार्ये
  - 3 संत काव्याचे मध्ययुगीन मराठी वाङ्मयपरंपरेतील स्थान
  - 4 संत प्रभावळोतील कवींच्या वाङ्मयाचा स्थूल परिचय
- यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

## ?kVd 4 &

- 1 संत एकनाथांची काव्यनिर्मिती : प्रेरणा, स्वरूप, कार्ये,
- 2 जैनांचे मराठी वाङ्मय : प्रेरणा, स्वरूप, कार्ये,
- 3 मुस्लिमांचे मराठी वाङ्मय : प्रेरणा, स्वरूप, कार्ये,
- 4 ख्रिस्तांचे मराठी वाङ्मय : प्रेरणा, स्वरूप, कार्ये, फादर स्टीफन्स ख्रिस्तपुराण .

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

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कमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05

3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



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- 1 संत तुकाराम कालीन सामाजिक स्थिती,,
- 2 संत तुकारामांची काव्यनिर्मिती प्रेरणा, स्वरूप, कार्य,
- 3 संत रामदासांच्या वाङ्.मयामागील प्रेरणा, स्वरूप, कार्य,
- 4 संत रामदासांचे वाङ्.मय ,
- 5 संत तुकाराम आणि संत रामदास कालीन कवींच्या काव्यामागील प्रेरणा, स्वरूप, कार्य  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

घटक 6–

- 1 पंडिती कवींच्या काव्यामागील प्रेरणा ,
- 2 पंडित काव्यातील सामाजिक स्थिती,
- 3 पंडिती काव्य– परंपरा प्रेरणा, स्वरूप, कार्य,

4 विशेष पंडित कवींच्या साहित्याच्या आढावा.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

घटक 7 –

1 बखर वाङ्मय – उत्पत्ती, स्वरूप, प्रेरणा आणि प्रवृत्ती

2 बखरींचे कालखंडात्मक वर्गीकरण,

3 बखरकारांचा परिचय, बखरींचे विशेष

4 प्रमुख बखरकार , बखर : एक वाङ्मय प्रकार, ऐतिहासिक पत्रव्यवहाराचे स्वरूप.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

घटक 8 –

1 शाहिरी वाङ्मय – उत्पत्ती, स्वरूप, प्रेरणा आणि प्रवृत्ती

2 शाहिरी वाङ्मयाचे, प्रकार,

3 शाहिरी वाङ्मयाचे वेगळेपण

4 विशेष शाहिरांचा परिचय व त्यांची साहित्य संपदा

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी.

पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semester Pattern) for colleges या पुस्तिकेतीलमुद्दा कमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

कमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05



6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



❖ संदर्भ ग्रंथ :-

- |  |                                 |
|--|---------------------------------|
| 1. महाराष्ट्र सारस्वत                              | वि.ल.भावे, शं.गो.तुळपुळे        |
| 2. मराठी वाङ्.मयाचा इतिहास, खंड 1,2,3              | ल.रा.पांगारकर                   |
| 3. प्राचीन मराठी वाङ्.मयाचा इतिहास भाग 1 ते 7      | डॉ.अ.ना.देशपांडे                |
| 4. मराठी वाङ्.मयाचा इतिहास खंड, 1,2,3              | महाराष्ट्र साहित्य,परिषद, पुणे. |
| 5. प्राचीन मराठी वाङ्.मयाचे स्वरूप                 | प्रा.ह.श्री.शेणोलीकर            |
| 6. पाच संतकवी आवृत्ती तिसरी                        | शं.गो. तुळपुळे                  |
| 7. प्राचीन मराठी गद्य: प्रेरणा आणि परंपरा:         | श्री.रं.कुलकर्णी                |
| 8. प्राचीन मराठी पंडिती काव्य                      | डॉ.के.ना.वाटवे                  |
| 9. मराठी लावणी वाङ्.मय                             | डॉ. गंगाधर मोरजे                |
| 10. म-हाटी लावणी या ग्रंथाची प्रस्तावना            | म.वा.धोंड                       |
| 11. मराठी कवितेचा उषःकाल                           | श्री.म.वर्दे                    |
| 12. संत,पंत, तंत                                   | श्री.म.माटे                     |
| 13. मराठी बखरवाङ्.मयाचा पुनर्विचार :               | गं.ब.ग्रामोपाध्ये               |
| 14. मराठी बखरवाङ्.मय                               | र.वि. हेरवाडकर                  |
| 15. बखरवाङ्.मय उद्गम व विकास                       | बापूजी संकपाळ                   |
| 16. मराठी ख्रिस्ती वाङ्.मय- फादर स्टीफन्स ते 1960  | गं.ना.मोरजे,                    |
| 17. समाज जीवनातील तुकाराम                          | डॉ. ता. रा. पाटील               |
| 18. पुन्हा तुकाराम -                               | दिलीप पु. चित्रे.               |
| 19. मराठी वाङ्.मयाचा विवेचक इतिहास प्राचीन         | डॉ. प्र.न. जोशी                 |
| 20. मराठी वाङ्.मयाचा विवेचक इतिहास अर्वाचीन कालखंड | डॉ. प्र.न. जोशी                 |
| 21. लोकोत्तर संत तुकाराम                           | डॉ. तानाजी पाटील.               |
| 22. मराठी वाङ्.मयाची सद्यःस्थिती (सं.)             | डॉ. टिळक / डॉ. पुंडे.           |
| 23. संत एकनाथांचा धर्मविचार                        | डॉ. सुरेखा आडगावकर.             |

- |                                      |                       |
|--------------------------------------|-----------------------|
| 24. अर्वाचीन मराठी कवयित्री          | डॉ. अलका चिडगोपकर     |
| 25. संत गोरा कुंभार : वाङ्मय दर्शन   | डॉ. बाबुराव उपाध्ये,  |
| 26. एकनाथ कालीन मराठी वाङ्मय         | डॉ. इनामदार, डॉ. जोशी |
| 27. संत कवी आणि कवयित्री : एक अनुबंध | डॉ. सुहासिनी इर्लेकर  |
| 28. रामदासांचे साहित्यशास्त्र        | डॉ. भा. श्री परांजपे  |
| 29. वारकरी संप्रदाय आणि संत साहित्य  | डॉ. शिवाजीराव मोहिते  |
| 30. ईश्वर निष्ठांची मांदियाळी        | डॉ. शिवाजीराव मोहिते  |
| 31. संतांची हे भेटी                  | डॉ. मु.श्री. कानडे    |
| 32. काही संत काही शाहीर              | डॉ. मु.श्री. कानडे    |
| 33. संत साहित्य दर्शन                | डॉ. उषा देशमुख        |
| 34. प्राचीन साहित्याच्या अंतरंग      | डॉ. वि.भी. कोलते      |
| 35. मराठी काव्यातील स्त्रीचित्रण     | डॉ. वेदश्री थिगळे     |
| 36. धर्म आणि साहित्य                 | डॉ. सिध्दार्थ आगळे.   |
| 37. मराठी संत कवयित्री               | प्रा. मा. के. यादव.   |
| 38. अभंग स्वरूप आणि चिकित्सा         | डॉ. बाळासाहेब लबडे.   |
| 39. ज्ञानेश्वरीतील समाजदर्शन         | डॉ. तानाजी पाटील.     |

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## अभ्यासपत्रिका क्रमांक 3:

भाषाविज्ञान : वर्णनात्मक व सामाजिक (4 Credit)

**I = 1**

### पाठक 1

- 1 भाषा : स्वरूप, कार्य आणि अभ्यासपध्दती,
- 2 तुलनात्मक विचार : संकल्पना, भाषा आणि भाषण,
- 3 उच्चारण आणि लेखन, व्यावहारिक भाषा आणि साहित्याची भाषा
- 4 भाषाभ्यासाच्या विविध कक्षा : तात्त्विक आणि उपयोजित
  - 1 भाषाविज्ञान आणि मानसशास्त्र : मनोभाषाविज्ञान,

**2** भाषाविज्ञान आणि समाजशास्त्र : समाजभाषाविज्ञान

**3** समाजभाषाविज्ञान आणि मानववंशशास्त्र

**4** भाषाविज्ञान आणि कोशविज्ञान

**5** भाषाविज्ञान आणि बोलीभूगोल

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit)

घटक 2

**1** स्वन, स्वनिम –स्वनांतर : संकल्पना आणि परस्परसंबंध,

**2** स्वनिम विश्लेषणाची तंत्र / तत्त्वे,

**3** खंडयुक्त स्वनिम, खंडिताधिष्ठीत स्वनिम,

**4** व्यवच्छेदक विनियोग, पूरक विनियोग,

**5** आघात, सुरावली, मुक्त परिवर्तन सीमासंधी इ.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit)

घटक 3

**1** रूपिका, रूपिम–रूपिकांतर : संकल्पना आणि परस्परसंबंध,

**2** रूपिम विश्लेषणाची तंत्रे / तत्त्वे,

**3** रूपिमांचे प्रकार, रूपांची घटना

**4** वाक्यविन्यास : संकल्पना : वाक्य,

**5** वाक्यविश्लेषण : रूपबंध आणि वाक्य परस्परसंबंध, प्रथमोपस्थित संघटक पध्दती

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit)

घटक 4

**1** अर्थविन्यास : संकल्पना , अर्थ,

**2** अर्थस्वरूप, अर्थक्षेत्र, घटक विश्लेषण,

**3** अर्थप्रकार : निर्देशनपर अर्थ, सांकल्पनिक अर्थ,

**4** गुणव्यंजक अर्थ, भावपर अर्थ शैलीगत अर्थ, अनेकार्थता ,समानार्थता वगैरे

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit)

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी. पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



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**( 4 Credit)**

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घटक 5

- 1 सामाजिक भाषाविज्ञान : पार्श्वभूमी व संकल्पना स्पष्टीकरण
- 2 सामाजिक भाषाविज्ञान : स्वरूप व्याप्ती व विशेष
- 3 भाषा, बोली आणि समाज यांचा परस्परसंबंध  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit)

घटक 6

- 1 समाजातील भाषाउपयोजनातील विविधता
- 2 भाषा आणि आर्थिक वर्गव्यवस्था
- 3 भाषा आणि विविध व्यवसाय क्षेत्रे
- 4 भाषा आणि विविध क्षेत्रीय वापर  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit)

घटक 7

- 1 भाषा आणि लिंगभेदानुसारी विशिष्ट वापर,
- 2 स्त्री- पुरुष – बालभाषा ;ठवकल.जंसाद्ध
- 3 भाषा आणि सांस्कृतिक व्यवस्था
- 4 भाषा, सामाजिक परंपरा, विविध सामाजिक संस्था  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit)

घटक 8

- 1 प्रमाण भाषा आणि परभाषा संपर्क
- 2 पिजिन (Pidgin) आणि क्रिओल (Creol) भाषांच्या निर्मितीच्या संदर्भात मांडणे.
- 3 समाजांतर्गत नवव्यवस्थांचा उदय आणि त्यांच्या आविष्कार पध्दती.
- 4 औद्योगिक, धार्मिक, सांस्कृतिक, सामाजिक इ. लघुक्षेत्रे किंवा पोटसमूह  
आणि विशिष्ट भाषा यांची निरीक्षणे  
;klkBh 15 O;k[;kus ?;kohr o ,d Js;kadu ns.ks ( 1 Credit)

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit

system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा कमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

कमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



संदर्भ ग्रंथ

- |                           |                        |
|---------------------------|------------------------|
| 1. ध्वनिविचार             | डॉ. ना.गो. कालेलकर     |
| 2. भाषा: इतिहास आणि भूगोल | डॉ. ना.गो. कालेलकर     |
| 3. भाषा आणि संस्कृती      | डॉ. ना.गो. कालेलकर     |
| 4. भाषा आणि भाषाशास्त्र   | डॉ.श्री.न.गर्जेद्रगडकर |

5. मराठीचा भाषिक अभ्यास	संपा. डॉ. मु.श्री.कानडे
6. भाषाविज्ञान : वर्णनात्मक आणि ऐतिहासिक	संपा.मालशे, डॉ. इनामदार,डॉ.सोमण
7. वर्णनात्मक भाषाविज्ञान :स्वरूप आणि पध्दती	संपा.डॉ.काळे, डॉ.सोमण
8. मराठीच्या प्रमाणभाषेचे स्वरूप	डॉ.सुहासिनी लददू
9. अर्वाचीन मराठी	डॉ.रमेश धोंगडे
10. अभिनव भाषाविज्ञान	डॉ.गं.ना.जोगळकर
11. भाषाविज्ञान परिचय	डॉ.मालशे,डॉ.पुंढे,डॉ.सोमण
12. मराठी भाषाव्यवस्था आणि अध्यापन	डॉ.चंद्रकांत इंदापूरकर
13. समाजभाषाविज्ञान :प्रमुख संकल्पना	र.ना.वरखेडे
14. सामाजिक भाषाविज्ञान:एक नवे अभ्यासक्षेत्र	मराठी संशोधनपत्रिका,मार्च1978
15. सामाजिक भाषाविज्ञान	डॉ.प्रभाकरजोशी, प्रा.चारुता गोखले
16. वैखरी:भाषा आणि भाषाव्यवहार	डॉ. अशोक रा.केळकर
17. मध्यमा	डॉ.अशोक रा. केळकर
18. आधुनिक भाषाविज्ञान:सिध्दांतन, उपयोजन	डॉ. रवींद्र मालशे
19. आत्मलक्षी समीक्षा	डॉ. रमेश धोंगडे
20. दलितांची आत्मचरित्रे	डॉ.रमेश धोंगडे
21- Sociolinguistics : An introduction	Petor Trudgill
22- Course On Gen.linguistics	F.Dept. Sussure
23- Sociolinguistics Patterns	William Labov
24- Language in Sociocultural Change	J.A.Fishman
25- Sociolinguistics : Selected Reddings Edited By J.B.Pride & J.Homes	
26- Languageand Social Context Edited By	P.Ganglioli
27- Pidgin & Creol Language	B.A.Hoil
28- Pidginication & Cradlization of Language Edited By	D.Hyrnes
29- Language in Society	Jearn Maimstrom
30- Sociolinguistics	R.A.Hudson
31. मराठी भाषेचा आर्थिक संसार	डॉ. अशोक रा.केळकर
32. ऐतिहासिक भाषाशास्त्र	डॉ. र.रा.गोसावी
33. सुबोध भाषाशास्त्र	डॉ. प्र.न.जोशी
34. सुलभ भाषाविज्ञान	डॉ. दत्तात्रय पुंढे
35. यादवकालीन मराठी भाषा	डॉ. शं.गो.तुळपुळे

- |  |                          |
|--|--------------------------|
| 36. सुलभ मराठी व्याकरण                       | मो.रा.वाळिंबे            |
| 37. आधुनिक भाषाविज्ञान ;संरचनावादी व सामान्य | डॉ.कल्याण काळे, डॉ.सोमण  |
| 38. मराठीचे वर्णनात्मक भाषाविज्ञान           | डॉ. महेद्र कदम           |
| 39 सामाजिक भाषाविज्ञान                       | संपा. डॉ. जयश्री पाटणकर. |
| 40 सामाजिक भाषाविज्ञान आणि बोली              | डॉ. शशिकला कांबळे.       |



**vH;klif=dk Øekad 4**



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- 2- Xzkzkeh.k lkfgR;kps Lo:lk o dk;Z ;kaph fpfdRlk dj.ks-
- 3- xzkeh.k LkfgR;krhy fofo/k ok<sup>3</sup>~e;izdkjkapk fodkl dlk gksr xsyk ;kps ewY;ekiu dj.ks-
- 4- xzkzkeh.k lkfgR;kus fnysys ;ksxnku] R;kP;k fodklkph xkoh fn’kk ;kaph ehekalk dj.ks-

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**घटक 1**

- 1 स्वातंत्र्योत्तर मराठी वाङ्मयाचे स्वरूप
- 2 ग्रामीण साहित्यात प्रवाह निर्माण होण्याची कारण परंपरा,
- 3 सामाजिक आणि वाङ्मयीन परंपरांचे स्वरूप ,
- 4 कृषी औद्योगिक अवस्थांतर ,आधुनिकता, शैक्षणिक विकास, जाणीवजागृती आणि ग्रामीण साहित्य.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे( 1 Credit)

**?kVd 2**

- 1 गावगाड्याची जडणघडण : कालची व आजची जात, कुटुंब व आर्थिक-सामाजिक संबंध,
- 2 ग्रामीण व ग्रामीण साहित्य : संज्ञा स्पष्टोकरण,
- 3 ग्रामीण साहित्यातून घडणारे सामाजिक ,सांस्कृतिक दर्शन,
- 4 ग्रामीण साहित्याचे देशीपण व वेगळेपण.

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**घटक 3**

- 1 ग्रामीण साहित्य आणि सामाजिक, सांस्कृतिक चळवळी,

- 2 वर्गीय जाणिव्वा आणि कलात्मकता, नव्या अभिरुचीची जडणघडण,
- 3 प्रमाणभाषा, ग्रंथभाषा व ग्रामीणबोली, निवेदनातील कार्य,
- 4 ग्रामीण साहित्य आणि सामाजिक बांधिलकी, बदलती खेडी व साहित्य.  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit)

#### घटक 4

- 1 स्वातंत्र्यपूर्व व स्वातंत्र्योत्तर कालखंडातील विविध वाङ्मयप्रकारांच्या विकासाच्या स्थितिगती
- 2 ग्रामीण साहित्याचे वाङ्मयीन योगदान,
- 3 ग्रामीण साहित्याच्या भाषेचे वेगळेपण, वास्तवदर्शन, प्रातिनिधिक साहित्याची जाणीव,
- 4 ग्रामीण साहित्याच्या आकलन व आस्वादासंबंधी अपेक्षा व वस्तुस्थिती

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05

8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



संदर्भ ग्रंथ :

- |    |                                      |                     |
|----|--------------------------------------|---------------------|
| 1  | ग्रामीणता: साहित्य आणि वास्तव        | डॉ. आनंद यादव       |
| 2  | ग्रामीण साहित्य : स्वरूप आणि समस्या  | डॉ. आनंद यादव       |
| 3  | मराठी साहित्य: समाज आणि संस्कृती     | डॉ. आनंद यादव       |
| 4  | ग्रामीण साहित्य :एक चिंतन            | डॉ. द.ता. भोसले     |
| 5  | ग्रामीण कथा                          | डॉ.वासुदेव मुलाटे   |
| 6  | ग्रामीण साहित्य प्रेरणा आणि प्रयोजन  | डॉ श्रीराम गुंदेकर  |
| 7  | ग्रामीण साहित्य                      | डॉ रा.रं.बोराड      |
| 8  | मराठी कादंबरीतील प्रादेशिकता         | डॉ.भास्कर शेळके     |
| 9  | ग्रामसंस्कृती                        | डॉ.आनंद यादव        |
| 10 | ग्रामीण कादंबरी                      | डॉ. रवींद्र ठाकूर   |
| 11 | ग्रामीण साहित्याची चळवळ –            | डॉ. कीर्ती मुळीक    |
| 12 | ग्रामीण साहित्य आणि वास्तव संपा.     | डॉ. कृष्णा इंगोले   |
| 13 | ग्रामीण साहित्यातील स्त्रीचित्रण     | डॉ. बाबूराव उपाध्ये |
| 14 | ग्रामीण दलित साहित्य चळवळ            | डॉ मधुकर मोकाशी     |
| 15 | ग्रामीण साहित्य प्रवाह आणि परिस्थिती | डॉ. वामन जाधव       |



## अभ्यासपत्रिका क्रमांक 4

### ऐच्छिक विषय – दलित साहित्य (4 Credit)

#### म्हणजे ?

- 1- स्वातंत्र्यप्राप्तीनंतरच्या कालखंडात दलित साहित्याच्या निर्मितीची कारणे, परंपरा आणि या साहित्याने दिलेल्या आव्हानांचा अभ्यास करणे.
2. दलित साहित्यातून व्यक्त होणा-या वेदनांचे व विद्रोहाचे स्वरूप जाणून घेणे.
3. दलित साहित्याने निर्माण केलेल्या विविध वाङ्मय प्रकारांच्या विकासांचे मूल्यमापन करणे.

### सत्र 2 – दलित साहित्य

#### म्हणजे ?

- 1 स्वातंत्र्यप्राप्तीनंतरचे मराठी वाङ्मयाचे स्वरूप ,
- 2 दलित साहित्याच्या निर्मितीमागील प्रेरणा,
- 3 जागतिक-सांस्कृतिक आणि वाङ्मयीन जाति व,आर्थिक व्यवस्थेमुळे झालेले शोषण,
- 4 डॉ. आंबेडकरांचे तत्त्वज्ञान ,चळवळी तसेच बुध्द ,म.फुले, कार्ल मार्क्स यांच्या विचारधारेचा प्रभाव, मानवी मूल्यांचे भान, यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

#### म्हणजे ?

- 1 दलित साहित्य व पुनरुत्थानाच्या चळवळी, नकार, विद्रोह ,साहित्य, वर्गीय जाणिवा,
- 2 प्रमाणभाषा, ग्रंथभाषा आणि बोली, दलित साहित्य व सामाजिक बांधिलकी, विज्ञाननिष्ठ, आधुनिकता,
- 3 दलित साहित्याचे वेगळेपण, रूपकात्मक, देशीपण, स्वतंत्र सौंदर्यशास्त्र हवे का?
- 4 दलित साहित्यातील बदल, वेदना विद्रोह यांचे चित्रण.

यासाठी 15 व्याख्याने घ्यावत व एक श्रेयांकन देणे ( 1Credit)

घटक 3

- 1 दलित साहित्यातील कविता, आत्मचरित्रे, कथा, नाटक, कादंबरी,
  - 2 आंबेडकरी, शहिरी वाङ्मय इ.वाङ्मयप्रकारांची विकासात्मक वाटचाल ,
  - 3 1945 ते 1960 दलित साहित्यच्या समीक्षेचे स्थूल स्वरूप
  - 4 1960 नंतर दलित साहित्यच्या समीक्षेचे स्थूल स्वरूप
- यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

घटक 4

- 1 आशय, अनुभव, रचना , भाषाशैली, साहित्य, समीक्षा यासंदर्भात दलित साहित्याने दिलेले योगदान
- 2 दलित चळवळींच्या संदर्भात दलित साहित्याने दिलेले योगदान ,
- 3 दलित साहित्य आणि विज्ञाननिष्ठा,
- 4 दलित साहित्याचा आस्वाद व आकलन
- 5 सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी
- 6 पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semester Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05

5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



संदर्भग्रंथ :

- |     |                                    |                              |
|-----|------------------------------------|------------------------------|
| 1-  | दलित साहित्य : वेदना आणि विद्रोह   | डॉ.भालचंद्र फडके             |
| 2-  | दलित साहित्य : सिध्दांत आणि स्वरूप | यशवंत मनोहर                  |
| 3-  | दलित साहित्यातील स्पंदने           | गो.म.कुलकर्णी                |
| 4-  | दलित साहित्य : एक चिंतन            | अर्जुन डांगळे                |
| 5-  | दलित साहित्य : एक कांती विज्ञान    | बाबुराव बागुल                |
| 6-  | दलित साहित्य : स्वाद आणि शोध       | यशवंत मनोहर                  |
| 7-  | दलित साहित्य                       | वामन निंबाळकर                |
| 8-  | दलित साहित्य : दिशा आणि दिशांतर    | दत्ता भगत                    |
| 9-  | दलित साहित्य : विचार आणि वैभव      | डॉ.अनिल गजभिय                |
| 10- | दलित नाटक, प्रेरणा आणि विकास       | प्रा.शैलेश त्रिभुवन          |
| 11- | दलित चळवळ आणि साहित्य              | डॉ.कृष्णा किरवले             |
| 12- | दलित साहित्याचे निराळेपण           | डॉ. प्रभाकर मांडे            |
| 13- | अण्णाभाऊ साठे                      | विलास गिते;प्रा.बजरंग कोरडे, |
| 14- | दलित कविता                         | डॉ.म.सु.पाटील                |
| 15- | दलित आत्मकथने                      | डॉ.वासुदेव मुलाटे            |

16-	दलित रंगभूमी	डॉ.भालचंद्र फडके
17.	निळी पहाट	प्रा. रा.ग. जाधव
18.	दलित वाङ्मय: प्रेरणा व प्रवृत्ती	डॉ.शंकरराव खरात
19.	दलित साहित्य : एक अभ्यास	अर्जुन डांगळे
20.	विद्रोहाचे पाणी पेटले आहे.	डॉ.गंगाधर पानतावणे
21.	मूल्यवेध	डॉ.गंगाधर पानतावणे
22.	दलितांचे विद्रोही वाङ्मय	म.ना.वानखेडे
23.	दलित साहित्य : एक आकलन	प्रा.बाळकृष्ण कवठेकर
24.	गांधी आणि आंबेडकर	प्रा. गं.बा.सरदार
25.	दलित साहित्य : प्रवाह आणि प्रतिक्रिया	गो.म.कुलकर्णी
26.	मार्क्सवाद व दलित साहित्य	प्रा.वि.स.जोग
27.	दलित स्त्रियांची आत्मकथने : स्वरूप आणि चिकित्सा	डॉ.मनोहर जाधव
28.	दलित साहित्य	डॉ . नीला पांढरे

**अभ्यासपत्रिका क .4 : ऐच्छिक विषय**  
**मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी—प्रारंभ ते 1960**  
**( 4 Credit)**

उद्दिष्टे:

- 1- वाङ्मय अभ्यासाच्या संदर्भात वाङ्मय आणि संस्कृती यांच्यातील अनुबंधाचा शोध घेणे.
- 2- संस्कृतीची विविध अंगे आणि वाङ्मय निर्मितीच्या प्रेरणा, वाङ्मयातील प्रवाह, प्रवृत्ती यांचा परस्परसंबंध जाणून घेणे
- 3- मराठी वाङ्मय व महाराष्ट्र संस्कृती व वाङ्मय यातील अनुबंध जाणून घेणे
- 4- महाराष्ट्रातील धर्मपंथ व मराठी वाङ्मय – नाथ, महानुभाव, वारकरी, दत्त, समर्थ संप्रदाय यांचा परस्परसंबंध अभ्यासणे
- 5- महाराष्ट्रातील राजवटी आणि मराठी वाङ्मय निर्मिती – यादवकालीन, बहामनीकालीन, शिवकालीन, पेशवेकालीन परस्परसंबंध अभ्यासणे

6- वाङ्मय प्रसाराची मध्ययुगीन माध्यमे,पुराण, प्रवचन, कोर्तन, भारूड, तमाशा, लावणी, रंगभूमी इ.चे स्वरूप अभ्यासणे.

7- लोकसाहित्याचा मध्ययुगीन मराठी वाङ्मयावरील प्रभाव अभ्यासणे

## I= 1 & izkjaHk rs 1818

### घटक 1

- 1 परकीय आक्रमणे, राजकीय स्थित्यंतरे व त्यांचा प्रभाव आणि परिणाम,
- 2 महाराष्ट्राच्या विविध क्षेत्रातील, मानवी जीवनातील स्थित्यंतरे,
- 3 तत्कालीन मराठी वाङ्मय निर्मितीच्या प्रेरणा,
- 4 वाङ्मयाचे स्वरूप आणि सांस्कृतिक चळवळींचे वाङ्मयातून दर्शन यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

### घटक 2

- 1 तत्कालीन धर्मसंप्रदाय व समाजसुधारणा विषयक चळवळी आणि मराठी वाङ्मय यांचा परस्परसंबंध
- 2 प्राचीन समाजातील विविध प्रकारच्या स्थित्यंतराचा मानवी जीवनावर आणि समाजावर झालेला प्रभाव,
- 3 काही परिवर्तनांना प्रारंभ, त्यांचे स्वरूप आणि मराठी वाङ्मय. यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

### घटक 3

- 1 या कालखंडातील वाङ्मय प्रकार आणि त्या प्रकारांच्या निर्मितीमागील प्रेरणा,
- 2 या कालखंडातील वाङ्मय : स्वधर्मजागृती , सामाजिक प्रबोधन, वैचारिकतेचे स्वरूप,



- 3** या कालखंडातील वाङ्मय : सामाजिक सुधारणा आणि मानवी जीवनातील प्रत्यक्ष बदल,
- 4** नवे साहित्यप्रकार आणि विशेष वाङ्मयीन कृती .  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( **1Credit**)

## ?kVd 4

- 1** मराठी भाषा आणि वाङ्मय प्रचाराचे तत्कालीन स्वरूप,
- 2** मराठी संस्कृती, मराठी वाङ्मय आणि समाजाची अभिरूची,
- 3** तत्कालीन सामाजिक वाटचाल, सामाजिक व सांस्कृतिक प्रबोधने

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( **1 Credit**)

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
<b>1</b>	लेखी परीक्षा (Written Test)	<b>15</b>
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
<b>2</b>	गृहपाठ (Assignments)	<b>05</b>
<b>3</b>	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	<b>05</b>
<b>4</b>	वस्तुनिष्ठ परीक्षा (Short Quizzes)	<b>05</b>
<b>5</b>	विस्तार कायZ (Extension work)	<b>05</b>
<b>6</b>	खुले पुस्तक परीक्षा (Open book Test)	<b>05</b>

7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



**अभ्यासपत्रिका क .4 : ऐच्छिक विषय**  
**मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी – 1818 ते 1960**  
**( 4 Credit)**  
**I= 2 & b- I- 1818 rs 1960**

घटक 1

- 1 इंग्रजी सत्तेचा उदय,
  - 2 महाराष्ट्रीय जीवनातील स्थित्यंतरे आणि तत्कालीन मराठी वाङ्मयाचा परस्परसंबंध
  - 3 धर्म व समाजसुधारण विषयक विविध चळवळी आणि मराठी वाङ्मयाचा परस्परसंबंध
- यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

घटक 2

- 1 अर्वाचीन मराठी साहित्याचे पाश्चात्य व भारतीय आधार
- 2 अर्वाचीन मराठी साहित्यप्रकार आणि साहित्यकृती

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

घटक 3

- 1 राजकीय विचारसरणी, स्वातंत्र्यविषयक चळवळी आणि मराठी वाङ्मयांचा परस्परसंबंध

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

घटक 4

- 1 मराठी साहित्य प्रचाराची अर्वाचीन माध्यमे,
- 2 मराठी संस्कृती, मराठी साहित्य, मराठी समाजाची अभिरूची
- 3 या घटकांचा मराठी साहित्यावर झालेला परिणाम

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी

पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05

4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



संदर्भ ग्रंथ :

- |   |                    |
|---|--------------------|
| 1. साहित्य व संस्कृती                               | दु.का.संत          |
| 2. संत वाङ्मयाची सामाजिक फलश्रुती                   | गं.बा.सरदार        |
| 3. मराठी संतमंडळाचे ऐतिहासिक कार्य                  | बा.र.सुंठनकर       |
| 4. महाराष्टीयांचे काव्यपरीक्षण                      | श्री.व्यं.केतकर    |
| 5. मराठी वाङ्मयाभिरुचीचे विहंगमावलोकन               | रा.श्री.जोग        |
| 6. महाराष्ट्र जीवन, खंड 1 व 2                       | संपा. गं.बा.सरदार  |
| 7. महाराष्ट्राच्या सामाजिक जीवनातील स्थित्यंतरे     | भ.श्री.पंडीत       |
| 8. अर्वाचीन मराठी साहित्याची सांस्कृतिक पार्श्वभूमी | डॉ.स.दा.क—हाडे     |
| 9. राजकीय चळवळ आणि मराठी नाटयसृष्टी                 | श्री.श्रीधर शनवारे |

- |   |                                     |
|---|-------------------------------------|
| 10. भारतीय प्रबोधन                                  | संपा.मे.पु.रेगे,,भा.शं.भणगे         |
| 11. मराठी वाङ्मयाचा इतिहास, खंड 1 ते 6,             | म.सा.परिषद,पुणे प्रकाशन.            |
| 12.मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी           | डॉ.गं.ना.जोगळेकर,प्रा.गो.म.कुलकर्णी |
| 13 मराठी वाङ्मयाचा इतिहास खंड 1 व 2                 | ल.रा.पांगारकर,                      |
| 14. 19 व्या शतकातील महाराष्ट्राची सामाजिक पुर्नघटना | डॉ. रा.शं वाळिंबे                   |
| 15. वाटा आणि वळणे                                   | प्रा. गो.म.कुलकर्णी                 |
| 16. युरोपियनांचा मराठीचा अभ्यास व सेवा              | डॉ. श्री.म. पिंगे                   |
| 17. प्राचीन मराठी वाङ्मयाचा इतिहास                  | डॉ. अ.ना.देशपांडे                   |
| 18. यादवकालीन महाराष्ट्र                            | डॉ. मु.ग.पानसे                      |
| 19. पेशवेकालीन महाराष्ट्र ;भाग 1 व 2                | बा.कृ.भावे                          |
| 20. महाराष्ट्र संस्कृती                             | डॉ. पु.ग.सहस्त्रबुध्दे              |
| 21. महाराष्ट्र संस्कृती : घडण व विकास               | प्रा. शेणोलीकर                      |
| 22. पाच भक्तीसंप्रदाय                               | डॉ. र.रा. गोसावी                    |
| 23. अर्वाचीन मराठी गद्याची उत्कांती                 | डॉ.कृ.भि.कुलकर्णी                   |
| 24. वि.कृ.चिपळूणकर : काल आणि कतृत्व                 | ग.त्र्यं.माडखोलकर                   |
| 25. मराठी ग्रंथनिर्मितीची वाटचाल                    | शं.गो.तुळपुळे                       |
| 26. संशोधनाची क्षितिजे                              | संपा. भा.ल.भोळे                     |
| 27. ज्ञानेश्वरांचे श्रोतृसंवाद                      | डॉ.द.भि.कुलकर्णी                    |
| 28. संशोधन शलाका                                    | डॉ.सुरेश म.डोळके                    |
| 29. वाङ्मयेतिहासाची संकल्पना                        | डॉ. द.दि.पुंडे                      |
| 30. मराठी लोकांची संस्कृती                          | इरावती कर्वे                        |
| 31. महाराष्ट्र संस्कृती                             | इरावती कर्वे                        |
| 32 मराठी वाङ्मयाचा विवेचक इतिहास                    | डॉ. प्र. न. जोशी                    |
| 33 मराठी वाङ्मयाचा विवेचक इतिहास अर्वाचीन कालखंड    | डॉ. प्र. न. जोशी                    |



अभ्यासपत्रिका क. 4 : ऐच्छिक विषय  
तौलनिक साहित्याभ्यास व भाषांतरमिमांसा ( 4 Credit)

सत्र १

उद्दिष्टे :

- 1 मराठी साहित्याचा अभ्यास करणा-या विद्यार्थ्यांस इतर भारतीय भाषांमधील साहित्याची ओळख करून देणे
- 2 विद्यार्थ्यांना जागतिक भाषांमधील साहित्याची ओळख व्हावी,
- 3 या अभ्यासातून त्यांचा साहित्यविषयक दृष्टिकोण अधिक विशाल व्हावा .
- 4 आधुनिक काळात भाषांतरांना /भाषांतरीत साहित्याला महत्त्व प्राप्त होईल हे लक्षात घेवून भाषांतर मोमांसेचाही अभ्यास होणे गरजेचे आहे.

## I= 1 & rkSyfud lkfgR;kH;kl

?ाटक 1

- 1 तौलनिक साहित्य संकल्पना स्पष्टोकरण,
- 2 तौलनिक साहित्याभासाचे तत्त्वे
- 3 तौलनिक साहित्याबद्दलच्या अपेक्षा ,
- 4 तौलनिक साहित्याभ्यासाची आवश्यकता,

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

?kVd 2

- 1 वाङ्मयीन प्रभाव : सपजमतेल प्दसिनमदबम संकल्पना ,स्वरूप, विशेष,
  - 2 तौलनिक साहित्याभ्यासात आवश्यकता. त्यांचा तत्कालीन साहित्यकृतींवरील प्रभाव,
  - 3 साहित्यकृतींची प्रभाव प्रकटीकरणाची क्षमता.
  - 4 राष्ट्रीय साहित्य :संकल्पना, प्रेरणा, आविष्कार विविधता,
- यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

?ाटक 3

- 1 विश्व साहित्याची संकल्पना आणि स्वरूप,
- 2 विश्व साहित्याचे विशेष,विश्वसाहित्यातील वैश्विक आशय,
- 3 विश्वसाहित्य ठरलेल्या साहित्यकृतींचे वेगळेपण.
- 4 विश्व साहित्याच्या आशयांची तुलनात्मकता.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1Credit)

?kVd 4

1 तौलनिक अभ्यासासाठी साहित्यकृती –

- कष्णाकाठ – यशवंतराव चव्हाण
- अंतःस्थ – पी. व्ही. नरसिंहराव , अनुवाद – अशोक जैन

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी  
पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी  
सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit  
system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा कमांक 5.9  
अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायड (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



#### संदर्भ ग्रंथ

- |   |   |
|---|---|
| <p><b>1</b> तौलनिक साहित्याभ्यास : तत्त्वे आणि दिशा</p> <p><b>2</b> तौलनिक साहित्याभ्यास</p> <p><b>3</b> तुलनात्मक साहित्याभ्यास<br/>प्रकाशन</p> <p><b>4</b> भाषांतर मीमांसा<br/>अंजली सोमण</p> | <p>संपा. चंद्रशेखर जहागिरदार</p> <p>वसंत बापट मौज प्रकाशन</p> <p>डॉ. आनंद पाटील , मेहता</p> <p>डॉ. कल्याण काळे, डॉ.</p> |
|---|---|





**vH;klif=dk d- 4 % ,sfPNd fo”k;**  
**l= 2 & Hkk”kkarjfeekalk ( 4 Credit)**

घटक 1

- 1 भाषांतर म्हणजे काय?
- 2 भाषांतर प्रक्रियेचे स्वरूप, भाषांतर : मोमांसा ,
- 3 भाषांतराचे काही विशेष नियम,
- 4 भाषांतराचे प्रकार व कार्य, भाषांतर, अनुवाद, रूपांतर  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

घटक 2

- 1 अभिजात साहित्यकृतीचे विशेष,
- 2 अभिजात साहित्यकृतीतील अभिजातपण,
- 3 अभिजात साहित्याचे भाषांतर करताना येणा-या अडचणी,
- 4 अभिजात साहित्यकृतीचा लेखक आणि त्याची प्रतिभा,  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

घटक 3

- 1 भाषांतराच्या मर्यादा.
- 2 प्रादेशिक, सांस्कृतिक, भौगोलिक आणि सामाजिक परिसर भिन्नता
- 3 प्रादेशिक वाङ्मयीन कृतीच्या भाषांतरासाठी आवश्यक गोष्टी,
- 4 वाङ्मयप्रकारानुसार भाषांतर, वेगवेगळ्या वाङ्मयप्रकारांचे भाषांतर

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

घटक 4

1 अभ्यासार्थ साहित्यकृती :

1- घाशीराम कोतवाल— विजय तेंडुलकर

2- हयवदन — गिरीश कर्नाड

अनुवाद — चि.→यं.खानोलकर

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी

पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



## .lanHkZxzaFk

- 1 Translation Studies Susan Bassnatt-
- 2 After Babel
- 3 Stylistics of Literary Translation

Mc Guire  
George Stainer  
Vilas Sarang

- 4 भाषांतरमोमांसा  
5 भाषांतर  
6 भाषांतर चिकित्सा

डॉ. आनंद काळे, डॉ.अंजली सोमण  
संपा. डॉ. रमेश वरखेडे  
डॉ. मधुकर मोकाशी



अभ्यासपत्रिका क. 4 : ऐच्छिक विषय  
वाङ्मयेतिहासलेखनविद्या  
( 4 Credit)

## mfl"Vs %

- 1- विद्यार्थ्यांमध्ये वाङ्मयाचा इतिहास सापेक्ष अभ्यास करण्याची क्षमता निर्माण करणे.
2. वाङ्मयीन प्रेरणा आणि वाङ्मयाचा प्रवाह यांचे स्वरूप जाणून घेणे.
- 3- वाङ्मयातील परंपरा आणि नवता यांची तत्त्वे आणि सूत्रे निश्चित करण्यास शिकणे आणि त्यानुसार वाङ्मयकृतीचा, लेखकाचा, वाङ्मयप्रकाराचा विशिष्ट कालखंडाचा अभ्यास करण्याच्या रिती आत्मसात करणे.
- 4- वाङ्मयेतिहासविद्यक (Literary Histonography) या नव्यानेच उदयास आलेल्या ज्ञानशाखेचा परिचय करून घेणे

**I = 1**

घटक 1 –

**v &** इतिहासाचे तत्त्वज्ञान : स्थूल ओळख, संकल्पना,

- 1 वाङ्मयेतिहासाच्या व्याख्या, स्वरूप, इतिहासलेखनासंबंधीच्या उत्पत्ती,
- 2 ऐतिहासिक स्थित्यंतराचे स्वरूप, इतिहास व वाङ्मयेतिहासातील अनुबंध,
- 3 वाङ्मयेतिहास व अन्य प्रकारचे इतिहास यातील भेदरेषा

ब –

- 1 वाङ्मयेतिहासाची संकल्पना स्वरूप,
- 2 वाङ्मयेतिहास व संशोधन, वाङ्मयेतिहास व टीकाशास्त्र ,
- 3 वाङ्मयेतिहास : वाङ्मयाभ्यासाचे स्वतंत्र अभ्यासक्षेत्र

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

घटक 2

**v- ik'pkR; ladYiukfopkj &**

थॉमस वार्टन, एच. ए.तेन, कसमियो, आर.एस.केन, हॅन्स रॉबर्ट जॉस इआ.

### c- Hkkjkrhy ladYiukfopkj &

वि.का.राजवाडे, श्री .व्यं. केतकर, दि.के.बेडेकर,  
डॉ.गो.म. कुलकर्णी, डॉ.म.रा.जोशी, इ. सुजित मुखर्जी,  
श्रीनिवास प्रधान , गणेश देवी, सिसिरकुमार दास

b-

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

### ?kVd 3- वाङ्मयेतिहासलेखनाचे प्रकार

- स्वरूपावरून पडणारे प्रकार :
  - 1 कालकमवाचक वाङ्मयेतिहास,
  - 2 अनुबंधवाचक वाङ्मयेतिहास
  - 3 रूपलक्षी किंवा सौंदर्यलक्षी वाङ्मयेतिहास,
  - 4 समग्रलक्षी वाङ्मयेतिहास
- लेखनरिती स्वरूपावरून पडणारे प्रकार :
  - 1 लेखकानुसार वाङ्मयेतिहास,.
  - 2 वाङ्मयप्रकारानुसारी वाङ्मयेतिहास,
  - 3 वृत्तिप्रवृत्तिनुसारी वाङ्मयेतिहास
- लेखनरिती वाङ्मयेतिहासकारासमोरील उद्दिष्टांनुसार पडणारे प्रकार
  - 1 बृहदवाङ्मयेतिहास,
  - 2 संहिता वाङ्मयेतिहास
  - 3 वाङ्मयप्रकारलक्षी वाङ्मयेतिहास,
  - 4 प्रदेशनिष्ठ किंवा भूगोलनिष्ठ वाङ्मयेतिहास
  - 5 दृष्टिकोणनिष्ठ वाङ्मयेतिहास

## ?kVd 4 & ok<sup>3</sup>~e;sfrgkl fopkjrhy dkgh uoladYiuk %

- 1 वाङ्मयेतिहासाची सामग्री,
- 2 वाङ्मयाचा भूगोल,
- 3 वाङ्मयीन घटना,
- 4 वातावरण,आणि परंपरा,
- 5 वाङ्मयेतिहासलेखनाची ध्येये व उद्दिष्टे,
- 6 वाङ्मयेतिहासलेखन – स्वभाषकांसाठी व परभाषकांसाठी,
- 7 वाङ्मयेतिहासाचे पुनर्लेखन, कालपट,
- 8 वाङ्मयाची सांस्कृतिक पार्श्वभूमी, वाङ्मयेतिहासाकरिता वाचनपाठ.

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05

9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes)	05
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## अभ्यासपत्रिका क. 4 : ऐच्छिक विषय वाङ्मयेतिहासलेखनविद्या ( 4 Credit)

सत्र २

घटक 1

- 1 बहुभाषिक राष्ट्रातील वाङ्मयतिहासाचे स्वरूप
- 2 भारतीय वाङ्मयेतिहासाची संकल्पना, मराठी वाङ्मयाचा भारतक्षेत्रीय अभ्यास व इतिहास
- 3 वाङ्मयतिहास लेखनातील तात्त्विक व तांत्रिक समस्या व अडचणी,
- 4 मध्ययुगीन मराठी वाङ्मयेतिहास लेखनातील समस्या व अडचणी
- 5 आधुनिक मराठी वाङ्मयेतिहास लेखनातील समस्या व अडचणी

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

?kVd 2

- 1 महाराष्ट्राबाहेरील मध्ययुगीन/अर्वाचीन मराठी वाङ्मय
- 2 मराठीवाङ्मयेतिहास मराठी वाङ्मयेतिहास लेखनाचा इतिहास
- 3 वि.ल. भावे ते म. सा. परिषद प्रकल्प : धावता समालोचनात्मक आलेख
- 4 मराठी वाङ्मयाचे इंग्लिश, हिंदी व अन्य भाषांमधील वाङ्मयेतिहास लेखन, स्थूलमोमांसा

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

?kVd 3

- 1 वाङ्मयेतिहासकारांचे कार्य ; स्थूल मूल्यमापन.—  
 वि.ल.भावे, मा.गो. रानडे, ना.भ.पावगो, स.रं. दंडवते,  
 वि.सी.सरवटे, वि.पांनेने, ल.रा.पांगारकर, बाळकृष्ण अनंत भिडे,  
 ह.श्री.शेणोलीकर, ल.रा.नसिराबादकर, श्री.म.पिंगे, चि.नी.जोशी,  
 कृ.ग.कवचाळे, वि.पां.दांडेकर, अ.ना.देशपांडे, रा.श्री.जोग,  
 प्र.न.जोशी, कुसुमावती देशपांडे, शं.गो.तुळपुळे, गो.म.कुलकर्णी,  
 व.दि.कुलकर्णी, म.ना.अदवंत, गो.चिं.भाटे, मा.क.नाडकर्णी

श्री.ना. बनहट्टी, प्र.वा.बापट, ना.वा.गोडबोले, गं.ना.जागेळकर,  
स.गं. मालशे, बा.गं.चव्हाण.  
**;klkBh 15 O;k[kus ?;kohr o ,d Js;kadu ns.ks ( 1 Credit )**

### घटक 3

- 1 मराठीतील वाङ्मयेतिहास विचारांची वाटचाल
- 2 1947 पर्यंतचा मराठी वाङ्मयेतिहास विचार
- 3 माटे-बेडेकर वाद – 1947 ते 1954.
- 4 माटे-बेडेकर मराठी वाङ्मयेतिहास विचार

**;klkBh 15 O;k[kus ?;kohr o ,d Js;kadu ns.ks ( 1 Credit)**

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी  
पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी  
सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit  
system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9  
अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05





## संदर्भग्रंथ – अ – मराठी

- |  |   |
|--|---|
| 1. इतिहासाचे तत्त्वज्ञान                 | सदाशिव आठवले , प्राज्ञपाठशाळा, वाई,           |
| 2. वाङ्मयेतिहास : सद्यस्थिती आणि अपेक्षा | गो.म.कुलकर्णी व दत्तात्रय पुंडे               |
| 3. वाङ्मयेतिहासाची संकल्पना              | संपा. दत्तात्रय पुंडे                         |
| 4. साहित्यचिंतन                          | संपा. व.दि.कुलकर्णी , मुंबई विद्यापीठ प्रकाशन |
| 5. मराठी वाङ्मयेतिहासाची प्रस्तावना      | डॉ.रा.शं.वाळिंबे                              |
| 6. इतिहास म्हणजे काय?                    | इ.एच.कार.अनु. वि.गो.लेले,                     |
| 7. वाङ्मयेतिहास लेखन;स्वरूप व समस्या द्व | डॉ. विद्यागौरी टिळक,                          |
| 8. मराठी वाङ्मयाची सद्यस्थिती            | डॉ. दत्तात्रय पुंडे– डॉ. विद्यागौरी टिळक      |

## vk<sup>1/2</sup> bafXy'k

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**vH;klif=dk dz-4 % ,sfPNd fo''k;**  
**vyadkj] Naan vkf.k O;kdj.k ( 4 Credit)**

mfl''Vs %

- 1 अलंकार, छंद आणि व्याकरण यांच्या तात्त्विक भूमिका समजावून घेणे.
- 2 अलंकार आणि छंद यांचे काव्यातील स्थान आणि व्याकरणाचे भाषेतील स्थाननिश्चित करण्याची क्षमता निर्माण करणे.
- 3 अलंकार, छंद आणि व्याकरण याविषयीच्या मराठीतील विचारांची माहिती करून घेणे

**I= 1**

घटक १

- 1 अलंकार संज्ञा, विविधमीमांसकांच्या व्याख्या आणि संकल्पना,
- 2 अलंकारांचे स्वरूप, विशेष, छंद : संज्ञा,
- 3 विविध संस्कृत मोमांसकांच्या व्याख्या
- 4 छंद संकल्पन : स्वरूप आणि विशेष.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देण ( 1 Credit)

?kVd 2

- 1 अलंकार आणि छंद या संकल्पनांचा विकास व त्यामागील पूर्वपीठीका
- 2 अलंकार आणि छंदांची मराठीतील विकासात्मक वाटचाल
- 3 अलंकार आणि छंदांची संस्कृतमधील पूर्वपीठीका

- 4 अलंकार आणि छंदांची संस्कृतमधील विकासात्मक वाटचाल  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

### ?kVd 3

- 1 अलंकार आणि छंद यांचे महत्त्व व गुणधर्म
- 2 अलंकारांचे काव्यरचनेतील स्थान आणि सौंदर्यवृद्धी,
- 3 छंदांचे काव्यरचनेतील स्थान आणि काव्याची सौंदर्यवृद्धी,
- 4 अलंकार आणि छंद या दोघांचे काव्यरचनेतील कार्य, आणि महत्त्व  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

### ?kVd 4

- 1 अलंकार, छंद आणि मुक्तछंद यांचे मराठीतील चिंतन,
- 2 अलंकार, छंद यांचे वर्गीकरण,
- 3 अलंकार, छंद यांचे प्रकार उपप्रकार
- 4 अलंकार, छंद यांचे स्वरूप व विशेष.  
यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे (1 Credit)

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी  
पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी  
सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit  
system(CS)(Semester Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9  
अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05

4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



अभ्यासपत्रिका क.4 : ऐच्छिक विषय  
**अलंकार छंद आणि व्याकरण**  
**( 4 Credit)**  
**= 2**

**?kVd 1**

- 1 व्याकरण म्हणजे काय?
  - 2 व्याकरणाच्या विविध मीमांसकांच्या व्याख्या ,
  - 3 व्याकरणाचे भाषेतील महत्त्वपूर्ण स्थान,
  - 4 व्याकरणाची गरज, व्याकरणाची व्याप्ती व मर्यादा
- ;klkBh 15 O;k[;kus ?;kohr o ,d Js;kadu ns.ks ( 1 Credit )**

**?kVd 2**

- 1 व्याकरण आणि भाषा परस्परसंबंध,
- 2 व्याकरण आणि भाषा यांचा परस्पर संबंधांची पार्श्वभूमी,
- 3 व्याकरणाचा भाषेतील उपयोग ,

#### 4 व्याकरणाचे स्वरूप आणि विशेष

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

### ?kVd 3

#### 1 व्याकरणाचे स्वरूप स्पष्टोकरण ,

#### 2 व्याकरणाचे विविध प्रकार, आणि सोदाहरण स्पष्टोकरण –

#### 3 आदेशात्मक, वर्णनात्मक, तुलनात्मक आणि ऐतिहासिक.

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

### ?kVd 4

#### 1 मराठी भाषेतील व्याकरणाची पूर्वपोठिका,

#### 2 व्याकरणाचा भाषेतील वापर व त्यामागील प्रयोजने,

#### 3 मराठीतील वर्ण, शब्द आणि वाक्यविचार

#### 4 व्याकरणविषयक मराठीतील चिंतन, विविध मीमांसकांचे विचार -

यासाठी 15 व्याख्याने घ्यावीत व एक श्रेयांकन देणे ( 1 Credit )

सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची पुढील प्रमाणे परीक्षा घेण्यात यावी पुढील पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05

6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05



संदर्भ ग्रंथ :

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| 1. अलंकारप्रदीप                    | डॉ. ग.त्र्यं.देशपांडे, पु.गो.निजसुरे |
| 2. काव्यविभ्रम                     | प्रा. रा.श्री.जोग                    |
| 3. अलंकारमंजुषा                    | बाळुताई खरे                          |
| 4. काव्याची भूषणे                  | म.वा.घोंड                            |
| 5. नवे अलंकार                      | रा.अ.काळेले                          |
| 6. भारतीय साहित्यशास्त्र           | डॉ. ग.त्र्यं.देशपांडे                |
| 7. भारतीय काव्यशास्त्राची उत्कांती | डॉ.वा.के.लेले                        |
| 8. काव्यप्रकाश संपा.-              | कृ.श्री.अर्जुनवाडकर, अरविंद मंगरूळकर |
| 9- Sanakrit Poetic &               | सुशीलकुमार डे                        |
| 10. काव्यालोचन                     | द.के. केळकर                          |
| 11. पद्यप्रकाश                     | मा.त्रिं.पटवर्धन                     |
| 12. छंदोरचना                       | मा.त्रिं.पटवर्धन                     |
| 13. मराठी छंदोरचनेचा विकास         | ना.ग.जोशी                            |
| 14. तुलनात्मक छंदोरचना             | ना.ग.जोशी                            |
| 15. पद्यमोमांसा                    | वि.ज.सहस्त्रबुध्दे                   |

16. मराठी छंद	वि.ना.राजवाडे
17. विचारसमीक्षा	वि.ना.राजवाडे
18. अनिलांची कविता : स्वरूप आणि आविष्कार –	डॉ.पंडितराव पवार
19. शास्त्रीय मराठी व्याकरण	मो.के.दामले
20. मराठी व्याकरणतील निबंध	कृष्णशास्त्री चिपळूणकर
21. मराठी व्याकरणची मूलतत्त्वे	ग.ह.केळकर
22. आधुनिक मराठी कवितेचे उच्चस्तर व्याकरण	म.पां.सबनीस
23. मराठी व्याकरणचा पुर्नविचार	अरविंद मंगरूळकर
24. मराठीचे अंतरंग	गो.कृ.मोडक
25. महाराष्ट्र प्रयोगचंद्रिका	संपा.कृ. श्री. अर्जुनवाडकर
26. मराठी व्याकरण : काही समस्या	डॉ. प्र. ना दोक्षित
27. मराठी व्याकरणाचे व्याकरण	कृ.पां.कुलकर्णी, ग.मो.पाटील
28. मराठीचे व्याकरण	डा.लीला गाविलकर
29. मराठीचे व्याकरण : वाद आणि प्रवाह	कृ.श्री. अर्जुनवाडकर
30. मराठी व्याकरणची कुलकथा	अ.का. प्रियोळकर
31. मराठी व्याकरणकार आणि व्याकरण	मो.स.मोने
32. मराठी भाषेची घटना	रा.भि.जोशी
33. मराठी प्रमाणभाषेचे स्वरूप	सुहासिनी लददू
34. मराठी व्याकरण विवेक	मा. ना. आचार्य
35. मराठी छंदोरचना ;लयदृष्ट्या पुनविचारद्ध	ना.ग.जोशी
36 अभिनव मराठी व्याकरण	डॉ. प्र.न जोशी
37 मराठीचे मूळ व्याकरण	वसंत उत्पात
38 मराठी भाषासौष्टव	वसंत उत्पात





**पुणे विद्यापीठ**  
**एम. ए. मराठी – भाग 1**  
**पुनर्रचित अभ्यासक्रम 2013–14 पासून**  
**सत्रपध्दती – श्रेयांक व श्रेणी पध्दतीप्रमाणे**  
**प्रश्नपत्रिकेचे स्वरूप व गुण विभागणी आराखडा**

- प्रत्येक सत्रात अंतर्गत परीक्षा 50 गुण व सत्रांत विद्यापीठ परीक्षा 50 गुण राहिल.
- प्रत्येक अभ्यासपत्रिकेसाठी 4 श्रेयांक असतील.
- प्रत्येक सेमिस्टरसाठी 16 श्रेयांकने असतील.
- प्रत्येक अभ्यासपत्रिकेत दिलेल्या घटकांवर 10 गुणांचे 5 प्रश्न विचारले जातील  
तीन दीर्घोत्तरी, एक लघुत्तरी आणि एक प्रश्न टीपेचा असेल.
- प्रत्येक प्रश्नाला पर्यायी प्रश्न असेल.
- सत्रपध्दतीनुसार सत्रा शवटी अंतर्गत मूल्यमापन 50 गुणांचे असेल.
- सत्राशेवटी अंतर्गत परीक्षा एकूण 50 गुणांची घेण्यात यावी
- 50 गुणांच्या परीक्षेसाठी 03 तासांचा वेळ असेल.

पुढोल पैकी कोणत्याही प्रकारात जास्तीत जास्त दोन प्रश्न विचारण्यात यावेत. यासंबंधी सविस्तर माहितीसाठी पुणे विद्यापीठाच्या Handbook of Choice based credit system(CS)(Semister Pattern) for colleges या पुस्तिकेतीलमुद्दा क्रमांक 5.9 अभ्यासक्रमाच्या शेवटी दिलेला आहे त्याप्रमाणे परीक्षा घेण्यात याव्यात.

क्रमांक	परीक्षा	गुण
1	लेखी परीक्षा (Written Test)	15
खालीलपैकी कोणत्याही तीन प्रकारच्या परीक्षा घेणे		
2	गृहपाठ (Assignments)	05
3	चर्चासत्र सादरीकरण / गटचर्चा (Seminar Presentation)	05
4	वस्तुनिष्ठ परीक्षा (Short Quizzes)	05
5	विस्तार कायZ (Extension work)	05
6	खुले पुस्तक परीक्षा (Open book Test)	05
7	लघु संशोधन प्रकल्प (Mini Research Project (Individual or group ))	05
8	दीर्घ प्रश्नोत्तर लेखन (Term Paper)	05
9	मासिके / तासिका / ग्रंथालयीन टिपण (Journal/Lecture/Library notes )	05

- विद्यार्थ्यांनी परीक्षा केंद्रावर उपरोक्त बाबींची पूर्तता करावी. त्याशिवाय निकाल जाहीर केला जाणार नाही
- प्रत्येक विषयाचे चारही सत्रांमध्ये घड्याळी 60 तासांचे अध्यापन करावे.
- पदव्युत्तर वर्गांना अध्यापन करण्याची पुणे विद्यापीठाची मान्यता असणे बंधनकारक आहे.

5.9 CA: The teacher would evaluate a student towards a course through interaction throughout the semester which would include one or more

(but not less than 4 including compulsory written test/s) of the following mechanisms with their maximum weightage out of 50 marks and this essentially enables the teacher to get positive feedback about a student's overall understanding/ ability and in nutshell enhances the teachinglearning process.

- a.** Written test – Max 2 with not more than 15 marks for each
- b.** Assignment – Max 2 with not more than 5 marks for each
- c.** Seminar presentation – 5 marks (not for all the students)
- d.** Group discussion – 5 marks (not for all the students)
- e.** Extension work – 5 marks (not for all the students)
- f.** An open book test – 10 marks ( to be conducted in a classroom for not more than 3 questions)
- g.** Report/Note on research paper/s or study tours – 5 marks (not for all the students and to be presented in the respective class)



# Savitribai Phule Pune University

*(Formerly University of Pune)*

## S.Y.B.A. (Geography) Correction

Choice Based Credit System Syllabus

To be implemented from Academic Year 2020-2021

Semester	Core Courses	Paper No	Paper Code	Subject	Total Lecture	Credit
III	Geography CC-1C	G2	Gg: 201(A)	Environmental Geography I OR Economic Geography -I	48	3
	Geography DSE – 1A	S1	Gg: 220(A)	Geography of Maharashtra - I OR Population Geography – I	48	3
	Geography DSE – 2A	S2	Gg: 210(A)	Practical Geography – I (Scale and Map Projections)	60	4
	SEC-I		SEC - A	Introduction to Geographical Information System (GIS) / Applied Course of Disaster	30	2

				Management		
IV	Geography CC-1C	G2	Gg: 201(B)	Environmental Geography II OR Economic Geography -II	48	
	Geography DSE – 1B	S1	Gg: 210(B)	Geography of Maharashtra – II OR Population Geography – II	48	3
	Geography DSE – 2B	S2	Gg: 220(B)	Practical Geography – II (Cartographic Techniques, Surveying and Excursion / Village / Project Report)	60	4
	SEC-I		SEC - B	& Introduction to Remote Sensing / Applied Course of Travel & Tourism	30	2

### S. Y. B. A. GEOGRAPHY

#### Equivalence of Previous syllabus along with new syllabus:

Pager	Old Course (2013 Annual Pattern)	New Course (2019 Semester Pattern)
G2	Gg-210 Elements of Climatology and Oceanography OR	Gg: 210(A)Environmental Geography I OR Gg: 210(A)Economic Geography -I
G2	Gg-210 Geography of Disaster Management	Gg: 210(B)Environmental Geography II OR Gg: 210(B)Economic Geography -II
S1	Gg-220 Economic Geography OR	Gg: 220(A)Geography of Maharashtra - I OR
S1	Gg-220 Tourism Geography	Gg: 220(A) Population Geography – I OR Gg: 220(B) Geography of Maharashtra – II OR Gg: 220(B) Population Geography – II
S2	Gg-201 Fundamentals of	Gg: 201(A)Practical Geography – I (Scale and Map Projections)
S2	Geographical Analysis	Gg: 201(B)Practical Geography – II (Cartographic Techniques, Surveying and Excursion / Village / Project Report)

**S.Y.B.A. Geography (G2) Syllabus for Semester III****Name of Subject: Environment Geography- I, Subject Code: Gg.210 (A)****Objectives:**

1. To create the awareness about dynamic environment among the student.
2. To acquaint the students with fundamental concepts of environment geography for development in different areas.
3. The students should be able to integrate various factors of Environment and dynamic aspect of Environmental geography.
4. To make aware the students about the problems of environment, their utilization and conservation in the view of sustainable development

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction to Environmental Geography	<ol style="list-style-type: none"> <li>1. Definition, Nature and scope of Environmental Geography.</li> <li>2. Types of Environment</li> <li>3. Importance of Environmental Geography</li> <li>4. Approaches to study of environmental Geography</li> </ol>	12	03
2	Ecosystem	<ol style="list-style-type: none"> <li>1. Meaning, concept and definition of ecosystem.</li> <li>2. Structure ( Biotic and Abiotic factors) and food chain, Tropic Level, food web, energy flow</li> <li>3. Types of ecosystem               <ol style="list-style-type: none"> <li>a) Equatorial Forest and</li> <li>b) Pond Ecosystem</li> </ol> </li> </ol>	12	
3	Biodiversity and its conservation	<ol style="list-style-type: none"> <li>1. Concept of biodiversity</li> <li>2. Economic value and potential of biodiversity</li> <li>3. Loss of biodiversity and hotspots in India</li> <li>4. Conservation of biodiversity</li> </ol>	12	
4	Environmental Pollution	<ol style="list-style-type: none"> <li>1. Concept of Pollution</li> <li>2. Air pollution-Causes, effects and control measures</li> <li>3. Water pollution-Causes, effects and control measures</li> <li>4. Soil pollution-Causes, effects and control measures</li> </ol>	12	

**Reference Book:**

1. Miller G.T., 2004, Environmental Science Working with the Earth, Thomson Books Cole, Singapore
2. Saxena H.M., 2017, Environmental Geography( Ed III), Rawat Publications, Jaipur
3. Odum E.P. et al.2005, Fundamentals of Ecology, Ceneage Learning, India

4. Sharma P.D.2015, Ecology and Environment, Rastogi Publications, Meerut
5. Kormondy, Edward J, 2012, Concept of Ecology, PHI Learning Pvt.Ltd, New Delhi
6. Singh R.B.(Eds) 2009, Biogeography and Biodiversity, Rawat Publications, Jaipur
7. Singh S, Prayag, 1997, Environment Geography, Pustak Bhawan, Allahabad
8. Chandana R.C.2002, Environmental Geography, Kalyani Publication, Ludhiana
9. Goudie A, 2001, The Nature of The Environment, Blackwell, Oxford
10. Gholap T. N., 2000, Environment Science, Nishikant Publications, Pune. (Marathi)
11. Choudhar A.H., & et. al., 2014, Disaster Management, Atharva Publication, Pune. (Marathi)
12. Musmade A. H., More J. C. 2014, Geography of Disaster Management, Diamond Publication, Pune. (Marathi)
13. Saptarshi P. G., More J. C., Ugale V. R., 2009, Geography and Natural Hazards, Diamond Publishing, Pune. (Marathi)

### S.Y.B.A. Geography (G2) Syllabus for Semester IV

**Name of Subject: Environment Geography- II, Subject Code: Gg.210 (B)**

#### Objectives:

1. To create awareness about dynamic environment among the students.
2. To acquaint students with the fundamental concepts of Environment Geography.
3. To acquaint students about the past, presents and future utility and potentials of natural resources.
4. To make aware students about the problems of environment, its utilization and conservation in the view of sustainable development.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Environmental Disaster	1. Meaning and concepts of environmental disaster 2. Classification of Disaster 3. Natural Disaster a) Earthquake b) Flood 4. Biological Disaster a) Swine flu b) Novel Corona (COVID-19)	12	03

2	Environmental Problems	1. Global Warming and climate change 2. Ozone Depletion 3. Acid rain 4. Over use of chemical fertilizers, pesticides and insecticides	12	
3	Environmental Planning and Management	1. Need of Planning and Management 2. Micro, macro and meso level Planning and Management with reference to India 3. Environmental impact assessment	12	
4	Environmental Policies	1. Introduction of environmental policies 2. Environmental education in India 3. Kyoto Protocol	12	

**Reference Book:**

1. Miller G.T., 2004, Environmental Science Working with the Earth, Thomson Books Cole, Singapore
2. Saxena H.M., 2017, Environmental Geography,( III ED) Rawat Publicastions, Jaipur
3. Odum E.P. et al.2005, Fundamentals of Ecology, Ceneage Learning, India
4. Sharma P.D.2015, Ecology and Environment, Rastogi Publications,Meerut
5. Kormondy, Edward J, 2012, Concept of Ecology, PHI Learning Pvt. Ltd, New Delhi
6. Singh R.B.(Eds) 2009, Biogeography and Biodiversity, Rawat Publications, Jaipur
7. Singh S,Prayag, 1997, Environment Geography, Pustak Bhawan, Allahabad
8. Chandana R.C.2002, Environmental Geography, Kalyani Publication, Ludhiana
9. Goudie A, 2001, The Nature of The Environment, Blackwell ,Oxford
10. Gholap T. N., 2000, Environment Science, Nishikant Publications, Pune. (Marathi)
11. Choudhar A.H., & et. al., 2014, Disaster Management, Atharv Publication, Pune. (Marathi)
12. Musmade A. H., More J. C. 2014, Geography of Disaster Management, Diamond Publication, Pune. (Marathi)
13. Saptarshi P. G., More J. C., Ugale V. R., 2009, Geography and Natural Hazads, Diamond Publishing, Pune. (Marathi)



**S.Y.B.A. Geography (G2) Syllabus for Semester III****Name of Subject: Economic Geography- I, Subject Code: Gg.210 (A)****Objectives:**

1. To introduce students to the basic principles and concepts of economic geography
2. To acquaint students with the applications to economic geography for development in different areas
3. The students should be able to integrate various factors of economic development and dynamic aspect of economic geography.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction to Economic Geography	<ol style="list-style-type: none"> <li>1. Definition, nature and scope of economic geography.</li> <li>2. Need and significance of economic geography</li> <li>3. Economic geography and its relation with social sciences</li> <li>4. Approaches of the study of economic geography</li> </ol>	12	03
2	Economic Activity	<ol style="list-style-type: none"> <li>1. Introduction and concept of economic activity with problems and prospect</li> <li>2. Primary activity</li> <li>3. Secondary activity</li> <li>4. Tertiary activity</li> </ol>	12	
3	Concept and classification of resources	<ol style="list-style-type: none"> <li>1. Concept of resources</li> <li>2. Renewable energy Resources               <ol style="list-style-type: none"> <li>i. Hydro electricity</li> <li>ii. Solar energy</li> <li>iii. Wind energy</li> </ol> </li> <li>3. Non-renewable Resources               <ol style="list-style-type: none"> <li>i. Coal,</li> <li>ii. Iron ore</li> <li>iii. Mineral oil</li> </ol> </li> <li>4. Conservation of resources</li> </ol>	12	
4	Agriculture	<ol style="list-style-type: none"> <li>1. Role of Agriculture in Indian economy</li> <li>2. Factors influencing agriculture in India               <ol style="list-style-type: none"> <li>a) Physical</li> <li>b) Socio-economic</li> <li>c) Political and cultural</li> </ol> </li> <li>3. Agro-based industries in India               <ol style="list-style-type: none"> <li>a) Dairy industry</li> <li>b) Cotton industry</li> </ol> </li> <li>4. Agro –Tourism</li> </ol>	12	

**Reference Books :**

1. Gautam A., 2010, Advance Economic Geography, Sharda Pustak Bhavan, Allahabad
2. Chauhan R. N., 2007, Basic Principles of Economic Geography, ABD Publishers, Jaipur
3. Padey P. N., Economic Geography, Nirali Publication ,Pune
4. Sadhukhan S. K., 1994, Economic Geography An Appraisal of Resources, S Chand & Company Ltd ,New Delhi

5. Roy P., Mukherjee S., 1993, Economic Geography: Resource Appraisal of resources- New Central Book Agency, Calcutta
6. Mannur H. G., 2008, International Economics, Vikas Publishing House PvtLtd,Noida
7. Siddharth K., 2003, Economic Geography, Theories, Processes &Patterns, Kisalaya Publications Pvt, Ltd, Noida
8. Husain M., 2008, Geography of India, Tata McGraw Hill, New Delhi
9. Bhat L. S., 1973, Regional Planning in India, Statistical Publishing Society, Kolkata
10. Desai V,1991, Fundamentals of Rural Development, Rawat Publications, New Delhi
11. Paranjape, Gupte, Karmarkar, 1974, Economic & Commercial Geography, Nirali Publication, Pune.
12. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune
13. Pagar S.D., Thorat A. M., More J. C., 2015, Agriculture Geography, Atharav Publication, Pune.

### S.Y.B.A. Geography (G2) Syllabus for Semester IV

**Name of Subject: Economic Geography- II, Subject Code: Gg.210 (B)**

#### Objectives:

1. To acquaint students with the basic principles and concepts of economic geography
2. To acquaint the students with the applications to economic geography for development in different areas.
3. The main aims are to integrate the various factors of economic development and to acquaint the students with this dynamic aspect of economic geography.

Sr.No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Trade and Transport	1.Modes of Transportation and their cost effectiveness Significance of a) Road b) Rail c) Air 2.Treansportation cost of Major types 3,Types of Trade a) National b) International 4.International trade of India	12	03
2	Industries	1. Factors influencing on location of industries. 2. Weber's theory of industrial location 3. Major industrial regions in India 4. a) Iron and steel industry in India b) Sugar Industry in Maharashtra	12	

3	Regional Planning Development	1. Concept of regional planning and development. Their importance 2. Objectives of regional planning 3. Regional and sectoral imbalance in India	12
4	Rural Development in India	1. Concept of rural development 2. Index of rural development 3. Various schemes of government for rural development a) IRD Programme b) DPAD Programme	12

**Reference Books :**

1. Gautam A., 2010, Advance Economic Geography, Sharda Pustak Bhavan, Allahabad
2. Chauhan R. N., 2007, Basic Principles of Economic Geography, ABD Publishers, Jaipur
3. Padey P. N., Economic Geography, Nirali Publication ,Pune
4. Sadhukhan S. K., 1994, Economic Geography An Appraisal of Resources, S Chand &Campany Ltd ,New Delhi
5. Roy P., Mukherjee S., 1993, Economic Geography: Resource Appraisal of resources- New Central Book Agency, Calcutta
6. Mannur H. G., 2008, International Economics, Vikas Publishing House Pvt Ltd, Noida
7. Siddharth K., 2003, Economic Geography, Theories, Processes & Patterns, Kisalaya Publications Pvt, Ltd, Noida
8. Husain M., 2008, Geography of India, Tata McGraw Hill, New Delhi
9. Bhat L. S., 1973, Regional Planning in India, Statistical Publishing Society, Kolkata
10. Desai V,1991, Fundamentals of Rural Development, Rawat Publications, New Delhi
11. Paranjape, Gupte, Karmarkar, 1974, Economic & Commercial Geography, Nirali Publication, Pune.
12. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune
13. Pagar S.D., Thorat A. M., More J. C., 2015, Agriculture Geography, Atharav Publication, Pune.

**S.Y.B.A. Geography (S1)Syllabus for Semester III**

**Name of Subject: Population Geography, Subject Code: Gg.220 (A)**

**Objectives:**

1. To understand the history of population.
2. To introduction of the basic concepts in Population Geography.
3. To understand the types of Population data.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction	1. Definition, Nature and Scope, 2. Contextual significance of Population Geography, 3. Relation between Population Geography and other social Sciences.	12	03
2	Population Data & Presentation	1. Census of India 2. National Sample Survey, Sample Registration Survey, NFHS, DLHS, 3. Presentation of Population Data – Maps, Graphical Presentation, Computer Application	12	
3	Population Growth and Demographic Attributes	1. Factors affecting Growth of Population 2. Fertility, Mortality - (Concept, Measurement) 3. Migration - Concept, Causes, Types	12	
4	Composition of Population	1. Age-Sex pyramid, Age Structure 2. Occupational Structure, Dependency Ratio 3. Longevity, Life Expectancy. (with Reference to India)	12	

**Reference Books:**

1. Barrett H. R., 1995, Population Geography, Oliver and Boyd Publication,
2. Bhende A. and Kanitkar T., 2000, Principles of Population Studies, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980, An Introduction to Population Geography, Kalyani Publishers.
4. Clarke J. I., 1965, Population Geography, Pergamon Press, Oxford.
5. Jones, H. R., 2000, Population Geography, 3rd ed., Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004, The End of the World Population Growth in the 21st Century, Earth scan
7. New bold K. B., 2009, Population Geography Tools and Issues, Rowman and Littlefield Publishers.
8. Pacione M., 1986, Population Geography-Progress and Prospect, Taylor and Francis.
9. Wilson M. G. A., 1968, Population Geography, Nelson Publishers.
10. Panda B P , 1988, Population Geography, Granth Academy, Bhopal (Hindi)
11. Maurya S D, 2009, Population Geography, Sharda Putak Bhawan, Allahabad (Hindi)
12. Chandna, R C, 2006, Population Geography, Kalyani Publishers, Delhi. (Hindi)

13. Sawant, Athavale, Musmade, Population Geography, Mehta Publication, Pune. (Marathi)
14. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune (Marathi)
15. Musmade A.H., Sonawane A.E., More J.C., 2015, Population & Settlement Geography, Diamond Publication Pune. (Marathi)

### S.Y.B.A. Geography (S1), Syllabus for Semester IV

Name of Subject: Population Geography, Subject Code: Gg.220 (B)

#### Objectives:

1. To introduce students to the Population Policy of India and China.
2. To understand the Health indicator in India.
3. To acquaint students with the concept of urbanization in population geography.
4. To understand population theories.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Concept and theories of Population	1. Population and space: over Population, Optimum Population, Under Population 2. Malthusian Theory 3. Marxian Theory	12	03
2	Problems of Population and Population Polices	1. Population Problems in India. 2. Population Problems in developed countries 3. Population Policies in India and China	12	
3	Population as a Resources Contemporary Issues	1. Health Indicator in India 2. Population as Social Capital 3. Human Development Index.	12	
4	Urbanization	1. Concept of urbanization 2. History of urbanization in India, Trends of World urbanization. 3. Problems of Urbanization in India	12	

#### Reference Books:

1. Barrett H. R., 1995, Population Geography, Oliver and Boyd Publication,
2. Bhende A. and Kanitkar T., 2000, Principles of Population Studies, Himalaya Publishing

House.

3. Chandna R. C. and Sidhu M. S., 1980, An Introduction to Population Geography, Kalyani Publishers.
4. Clarke J. I., 1965, Population Geography, Pergamon Press, Oxford.
5. Jones, H. R., 2000, Population Geography, 3rd ed., Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004, The End of the World Population Growth in the 21st Century, Earth scan
7. New bold K. B., 2009, Population Geography Tools and Issues, Rowman and Littlefield Publishers.
8. Pacione M., 1986, Population Geography-Progress and Prospect, Taylor and Francis.
9. Wilson M. G. A., 1968, Population Geography, Nelson Publishers.
10. Panda B P , 1988, Population Geography, Granth Academy, Bhopal (Hindi)
11. Maurya S D, 2009, Population Geography, Sharda Putak Bhawan, Allahabad (Hindi)
12. Chandna, R C, 2006, Population Geography, Kalyani Publishers, Delhi. (Hindi)
13. Sawant, Athavale, Musmade, Population Geography, Mehta Pubication, Pune. (Marathi)
14. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune (Marathi)
15. Musmade A.H., Sonawane A.E., More J.C., 2015, Population & Settlement Geography, Diamond Publication Pune. (Marathi)

### S.Y.B.A. Geography (S1), Syllabus for Semester III

**Name of Subject: Geography of Maharashtra, Subject Code: Gg.220 (A)**

#### Objectives:

1. To acquaint students with Geography of our State.
2. To make students aware of the magnitude of problems and prospects in Maharashtra.
3. To help students understand the inter relationship between the subject and the society.
4. To help students understand the recent trends in regional studies

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Administrative Set up of Maharashtra	1. Historical and Political Background of the state 2. Geographical location of State 3. Adjoining States 4. Administrative Divisions	12	

2	Physical settings	1. Geological Structure of Maharashtra. 2. Physical Structure (Mountain, plateau, Plains) 3. Drainage Pattern (East and West flowing rivers) 4. Major Soil types and Distribution.	12	03
3	Climate	1. Climatic Regions of Maharashtra 2. Distribution of Rainfall 3. Draught prone areas- Problems and Management 4. Flood areas - Problems and Management	12	
4	Resources	1. Water :Problems in Utilization and conservation 2. Forest : Types and Conservation 3. Mineral; Iron ore, Manganese and Bauxite 4. Power : Hydro, Thermal, Atomic	12	

**Reference Book:**

1. Dikshit K.R ., Maharashtra in Maps,
2. Deshpande C. D. , Maharashtra
3. Sadhu Arun, Maharashtra, National Book Trust
4. Savadi A. B., Geography of Maharashtra: Nirali Prakashan, Pune.
5. Dastane S., Maharashtra, Ramchandra and company, Pune
6. Sawadi A. B., The Mega State Series : Nirali Publication, Pune.
7. Maharashtra state Agricultural Atlas
8. Karve I., Maharashtra its Land and people,
9. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune (Marathi)

## S.Y.B.A. Geography (S1), Syllabus for Semester IV

Name of Subject: Geography of Maharashtra, Subject Code: Gg.220

**(B)Objective :**

1. To make students aware about the Agriculture problems and prospects of Maharashtra.
2. To understand the population distribution and settlement pattern in Maharashtra.
3. To understand the concept of rural development.
4. To understand the prospectus in Tourism activity in Maharashtra and the role of MTDC and Role of MIDC in industrial development in rural area of Maharashtra

Sr. No.	Topic	Sub Topic & Learning Point	Hours	Credits
1	Agriculture	<ol style="list-style-type: none"> <li>1. Importance of Agriculture in Economy of Maharashtra</li> <li>2. Major Crops - Wheat, Rice, Jawar, Bajra.</li> <li>3. Cash Crops and Horticulture - Cotton, Sugarcane, Pomegranate, Grapes.</li> <li>4. Problems of agriculture in Maharashtra.</li> </ol>	12	03
2	Population and Settlement	<ol style="list-style-type: none"> <li>1. Population distribution of Maharashtra</li> <li>2. Population composition - Sex Ratio, Literacy, Occupational structure, Migration</li> <li>3. Rural and Urban Settlements</li> <li>4. Potential of Major Cities in Maharashtra – Mumbai, Pune, Nagpur</li> </ol>	12	
3	Rural Development of Maharashtra	<ol style="list-style-type: none"> <li>1. Concept of Rural Development</li> <li>2. Parameters of Rural Development</li> <li>3. Schemes For Rural Development</li> <li>4. Case Studies – Hivare Bazar and Ralegan Siddhi (Ahmednagar), Patoda (Aurangabad)</li> </ol>	12	
4	Tourism	<ol style="list-style-type: none"> <li>1. Growth and development of tourism in Maharashtra</li> <li>2. Tourism Potential of Maharashtra</li> <li>3. Agro-Tourism</li> <li>4. Role of MTDC</li> </ol>	12	

**Reference Book:**

1. Dikshit K.R ., Maharashtra in Maps,
2. Deshpande C. D. , Maharashtra
3. Sadhu Arun, Maharashtra, National Book Trust
4. Savadi A. B., Geography of Maharashtra: NiraliPrakashan, Pune.
5. Dastane S., Maharashtra, Ramchandra and company, Pune
6. Sawadi A. B., The Mega State Series : Nirali Publication, Pune.
7. Maharashtra state Agricultural Atlas
8. Karve I., Maharashtra its Land and people,
9. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune (Marathi)



**S.Y.B.A. Geography (S2), Syllabus for Semester III****Name of the Subject: Scale and Map Projection, subject Code: Gg. 201 (A)****Practical Geography-I No. of Credits: 04**

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**Workload:** Six Periods per week per batch consisting of 12 Students; however the last batch needs to have more than six students.

**(Examination for the course will be conducted at the end of the semester)**

**Objectives of Course:**

1. To introduce the basic concepts in Practical Geography
2. To enable students to use various Scales and Projection Techniques in Geography.
3. To acquaint students with the utility of various Projections in Geographical knowledge.
4. To explain the elementary and essential principles of practical work in Geography.

**Course Outcome:**

After the successful completion of the course, the students will be able to:

1. Develop practical skill and use of map scale and projection.
2. To make students aware of the new techniques, accuracy and skills of map making.

**Note:**

1. Use of Map stencils, Log tables, Calculator, computer, Statistical Tables is allowed at the time of Examination.
2. Students must check the practical's regularly and Journal should be certified by practical in-charge and Head of the Department before the examination.
3. Students without a certified journal should not be allowed for the practical examination.
4. Each of the practical batches needs a separate question paper.

Sr. No.	Topic	Sub Topic & Learning Point	No of Practical	Credits
1.	<b>Introduction of Maps</b>	1. Definition of Map 2. Elements of Map 3. Classification of Map: a. On the basis of scale: i) Small scale ii) Large Scale b. On the basis of function: i) Physical ii) Cultural 4. Use of map	<b>03</b>	<b>04</b>
2.	<b>Map Scale</b>	1. Definition of Map Scale. 2. Types of Map Scale a. Verbal Scale b. Numerical Scale c. Graphical Scale 3. Conversion Scale (British and Metric System) a. Verbal scale to Representative fraction b. Representative fraction into Verbal scale 4. Construction of Simple Graphical scale (At least two examples from each)	<b>06</b>	
3.	<b>Basic of map projection</b>	1. Definition and types of map projection 2. Basic Concepts of Projection: Latitude, Longitude, Parallel of latitude, Meridian of longitude, Prime meridian, Equator, Direction 3. Calculation of time basis on meridian and GMT (Calculation of minimum two examples )	<b>04</b>	
4.	<b>Construction, properties and use of map projections</b>	1. Zenithal Projection a. Zenithal Polar Gnomonic Projection 2. Conical Projection a. Conical projection with one standard parallel/Simple conical projection 3. Cylindrical Projection a. Cylindrical equal area projection 4. Mercator projection (At least two examples from each projection)	<b>07</b>	

**Reference Books:**

1. Sharma J. P., 2010, Prayogic Bhugol, Rastogi Publishers, Meerut.
2. Singh R. L. and Singh R. P. B., 1999, Elements of Practical Geography, Kalyani Publishers.
3. Slocum T. A., McMaster R. B. and Kessler F. C., 2008, Thematic Cartography and Geovisualization (3rd Edition), Prentice Hall.
4. Tyner J. A., 2010, Principles of Map Design, The Guilford Press.
5. Sarkar A., 2015, Practical Geography: A Systematic Approach, Orient Black Swan Private Ltd., New Delhi
6. Singh R. L. and Duttta P. K., 2012, Prayogatama Bhugol, Central Book Depot, Allahabad
7. Ahirrao Y., Karanjkehele E. K., 2002, Practical Geography, Sudarshan Publication, Nashik
8. Saptarshi P. G., Jog S. R., Statistical Methods ,
9. Karlekar S. N., 2008, Statistical Methods, Diamond Publication, Pune
10. Kanetkar T. P., Kulkarni S. V., 1986, Surveying and Leveling, Pune Vidyarthi Griha Publication, Pune
11. Kumbhare A., Practical Geography,
12. Saha P., Basu P., 2007, Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata

**S.Y.B.A. Geography (S2), Syllabus for Semester IV**

**Name of the Subject: Cartographic Techniques, Surveying and Excursion  
/ Village / Project Report subject Code: Gg. 201 (B)**

**Practical Geography-II No. of Credits: 04**

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**Workload:** Six Periods per week per batch consisting of 12 Students; however the last batch needs to have more than six students.

**(Examination for the course will be conducted at the end of the semester)**

**Objectives of Course:**

1. To introduce the students to the basic and contemporary concepts in Cartography.
2. To acquaint the students with the utility and applications of various Cartographic Techniques.
3. To introduce the latest concepts regarding the modern cartography in the field of Geography.
4. To explain the elementary and essential principles of practical work in Geography.

**Course Outcome:**

After the successful completion of the course, the students will be able to:

1. Develop practical knowledge and application of cartographical techniques.
2. To make students aware of the new techniques, accuracy and skills of Map Making.

**Note :**

1. Use of Map stencils, Log tables, Calculators, Statistical Tables is allowed at the time of Examination.
2. Journal completion by the students and the certified by practical in-charge and Head of the Department is compulsory.
3. Students without a certified journal should not be allowed for the practical examination.
4. Each of the practical batches needs a separate question paper.

Sr. No.	Topic	Sub Topic & Learning Point	No of Practical	Credits
1.	<b>Introduction to Cartography</b>	1. Definition of Cartography 2. Development of cartography a. Traditional b. Modern 3. Use of Cartography	02	04
2.	<b>Cartographic techniques</b>	1. Techniques of representation of data (Use and limitations) a. Simple line graph b. Simple bar Graph c. Pie diagram d. Choropleth Map e. Isopleth Method (Isoheight or Isothermal) f. Flow diagram (At least 01 example of each manually and using computer)	06	
3.	<b>Surveying</b>	1. Definition of Surveying 2. Types of North Direction (True, Magnetic and Grid North) 3. Types of Survey (Any three) a. Plane Table Survey : (Radiation Method and Intersection Method) b. GPS Survey and plotting c. Dumpy level / Auto level survey i) Rise and Fall Method ii) Collimation Method d. Demonstration of Total Station 4. Measurement of land: i) Measurement of survey field ii) Example on measurement of area (Circle, Square, Rectangle, Triangle, Uneven shape) iii) Conversion of area (hector into Acer, Square km into square meter, Square meter to Square feet)	08	
4.	<b>Excursion / village/city survey and report writing</b>	Study tour to places of geographical interest anywhere in the country Or Socio- economic survey of village/city	04	

**Reference Books:**

1. Sharma J. P., 2010, Prayogic Bhugol, Rastogi Publishers, Meerut.
2. Singh R. L. and Singh R. P. B., 1999, Elements of Practical Geography, Kalyani Publishers.
3. Slocum T. A., McMaster R. B. and Kessler F. C., 2008, Thematic Cartography and Geovisualization (3rd Edition), Prentice Hall.
4. Tyner J. A., 2010, Principles of Map Design, The Guilford Press.
5. Sarkar A., 2015, Practical Geography: A Systematic Approach, Orient Black Swan Private Ltd., New Delhi
6. Singh R. L. and Duttta P. K., 2012, Prayogatama Bhugol, Central Book Depot, Allahabad
7. Ahirrao Y., Karanjkehele E. K., 2002, Practical Geography, Sudarshan Publication, Nashik
8. Saptarshi P. G., Jog S. R., Statistical Methods ,
9. Karlekar S. N., 2008, Statistical Methods, Diamond Publication, Pune
10. Kanetkar T. P., Kulkarni S. V., 1986, Surveying and Leveling, Pune Vidyarthi Griha Publication, Pune
11. Kumbhare A., Practical Geography,
12. Saha P., Basu P., 2007, Advanced Practical Geography, Books and Allied (P) Ltd, Kolkata
13. Advanced Practical Geography: 2007, Saha P., Basu P., Books and Allied (P) Ltd, Kolkata

**S.Y.B.A. Geography Syllabus****Name of Subject: Introduction to Geographic Information System****Subject Code: SEC – A, Semester – III****Total Credit:02,****Total Periods: 30****Objectives:**

1. To introduce the students about the basic concepts of GIS.
2. To acquaint the students with the utility and applications of GIS Technique.
3. To create the awareness about Geospatial technology among the students.
4. To inculcate skill of map making among the students by using GIS Technique.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction to GIS	1. Definition of GIS 2. Stages of GIS Development 3. Objectives of GIS 4. Components GIS 5. GIS Applications	06	2
2	Data Types & Models	1. Spatial Data – Concept, Sources; Data Models – Raster & Vector 2. Non-spatial Data – Concept, Sources; Data Models – Relational, Network, Hierarchical & Object-orientated	06	
3	Software based Practical	1. Geo-referencing of Toposheet/Map 2. Digitization of Point, Line & Polygon (at least one layer of each) 3. Data Attachment 4. Creation of Layout and Map	18	

**Course Outcomes:**

On successfully completion of this course, the students will able to -

- Comprehend knowledge about the concepts in GIS.
- Acquire skills of map making using GIS.

**Reference Books:**

- Burrough, P. A. and McDonnell, R. A. (2000): Principles of Geographical Information Systems, Oxford University Press, New York.
- Chang, K. T. (2008): Introduction to Geographic Information Systems, Avenue of the Americas, McGraw-Hill, New York.
- Debashis, C. and Sahoo, R. N. (2015): Fundamentals of Geographic Information System, Viva Books Private Limited.
- DeMers, M. N. (2008): Fundamentals of Geographic Information Systems, John Wiley and Sons, New Delhi.
- Heywood, I., Cornelius, S. and Carver, S. (2011): An Introduction to Geographical Information Systems, Pearson Education, New Delhi.
- Karlekar, S. (2007): Bhaugolik Mahiti Pranali (GIS), Diamond Publications, Pune.
- Korte, G. B. (2001): The GIS Book, Onward Press, Bangalore.
- Longley, P. A., Goodchild, M. F., Maguire, D. J. and Rhind, D. W. (2002): Geographical Information Systems and Science, John Wiley & Sons, Chichester.
- Lo Albert, C. P., Yeung and Albert K. W. (2002): Concepts and Techniques of Geographical Information Systems, Prentice Hall of India, New Delhi.

- Pandey, J. and Pathak D. (2015): Geographic Information System, TERI Press, The Energy and Resources Institute, New Delhi.
- Paul, A. L., Michel, F. G., Maguire, D. J. and Rhind, D.W. (2002): Introduction to Geographic Information Systems and Science, John Wiley and Sons Ltd.

### S.Y.B.A. Geography Syllabus

Name of Subject: APPLIED COURSE OF DISASTER MANAGEMENT

Subject Code: SEC – A Semester - III

Total Credit:02,

Total Periods: 30

#### Objectives:

The objectives of the course are to develop following Skills among the students

- 1.To introduce basic concepts and fundamental structure of Disaster Management (DM).
- 2.To inculcate critical thinking and problem-solving abilities on disaster management.
- 3.To enable students to assess the situation and design plan for Disaster management

Unit no.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Fundamental Concepts, Measurement / Parameter and Types of Disasters	a) Disaster, Hazard, Risk, Vulnerability, Resilient b) Magnitude, Intensity, Frequency, Duration, Spatial dispersion	06	02
2	Phases of Disaster Management Role of Geographers and organizations	a) Concept: Mitigation, Preparedness, Response, Recovery, Rehabilitation. b) Role of Geographers	08	
3	Comparative Assessment of Disaster Management- I	a) Earthquake: - India and Japan b) Flood:- India and Netherland	08	
4	Assessment of Disaster Management- II	Assignment based on Primary or secondary data on any one Geographical scale- local/ regional/national/ global	08	

1. Disaster Management Guidelines, GOI-UND Disaster Risk Program (2009-2012)



2. Damon, P. Copola, (2006) Introduction to International Disaster Management, Butterworth Heineman.

3. Gupta A.K., Niar S.S and Chatterjee S. (2013) Disaster management and Risk Reduction, Role of Environmental Knowledge, Narosa Publishing House, Delhi.

4. Murthy D.B.N. (2012) Disaster Management, Deep and Deep Publication PVT. Ltd. New Delhi.

5. Modh S. (2010) Managing Natural Disasters, Mac Millan publishers India LTD.

6. Dr. Mrinalini Pandey (2017) Disaster Management, Wiley India Pvt. Ltd.

7. Tushar Bhattacharya (2018) Disaster Science and Management, McGraw Hill Education (India) Pvt. Ltd.

9. Arjun Musmade, Jyotiram More (2014) Geography of Disaster Management, Diamond Publication, Pune. (Marathi)

10. P. P. Marathe (2010), Disaster Management Concepts & Practices Diamond Publication, Pune. (Marathi)

### S.Y.B.A. Geography Syllabus

**Name of Subject: Introduction to Remote Sensing**

**Subject Code: SEC-B Semester – IV**

**Total Credit:02,**

**Total Periods: 30**

#### Objectives:

1. To introduce the students about the basic concepts of Remote Sensing.
2. To acquaint the students with the utility of RS and its applications.
3. To inculcate the skill of satellite image interpretation among the students.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction to Remote Sensing	1. Concept, Definition and Types of RS 2. Development of RS in India 3. Stages in RS 4. Electromagnetic Spectrum 5. Applications of RS	07	2
2	Image Interpretation	1. Elements of Visual Image Interpretation 2. Visual Image Interpretation of Satellite Images i.e. IRS or LANDSAT	07	
3	Software based Practical	1. Image Downloading through Bhuvan/USGS 2. Layer Stacking 3. Image Enhancement 4. Image Classification - Unsupervised	16	

#### Course Outcomes:

On successful completion of this course, the students will be able to -

- Obtain knowledge about the concepts of remote sensing.
- Acquire skills in visual interpretation of satellite images.

**Reference Books:**

- Anji Reddy, M. (2008): Textbook of Remote Sensing and Geographic Information System, B.S. Publication, Hyderabad.
- Bhatta B., (2011): Remote Sensing and GIS, Oxford University Press, India.
- Campbell, J. (2002): Introduction to Remote Sensing, Taylor & Francis, London.
- Cracknell, A.P. (1991): Introduction to Remote Sensing, Tylor & Francis, London.
- Gupta, R.P. (1990): Remote Sensing Geology. Springer Verlag.
- Heywood, I., Steve, C. and Cornelius, S. (2003): An Introduction to Geographical Information Systems, Pearson Education.
- Jensen, J. R. (2000): Remote Sensing of the Environment: An Earth resource Perspective, Prentice Hall.
- Jensen, J. R. (2005): Introductory Digital Image Processing, Prentice Hall, New Jersey.
- Joseph, G. (2004): Fundamentals of Remote Sensing, Universities Press, Hyderabad, India.
- Karlekar, S. (2006): Doorsamvedan - Remote Sensing (Marathi), Diamond Publications, Pune.
- Karlekar, S. (2017): Dursamvedan Aani Bhougolik Mahiti Pranali (Marathi), Diamond Publications, Pune.
- Lillesand, T. M., Kiefer, R. W. and Chipman, J. W. (2016): Remote Sensing and Image Interpretation, 6<sup>th</sup> Edition, Wiley India.
- Rao R. M. (2002): Geographical Information Systems, Rawat Publication.
- Sabins, F. F. (1996): Remote Sensing: Principles and Interpretation, W.H. Freeman and Company, San Francisco.

**S.Y.B.A. Geography Syllabus**

**Name of Subject: APPLIED COURSE OF Travel & Tourism**

**Subject Code: SEC – B Semester -IV**

**Total Credit:02,**

**Total Periods: 30**

**Objectives**

1. To develop basic framework to understand the various elements of tourism management.
2. To evaluate the role of transport in travel and tourism industry.
3. To develop the skills to arrange, manage and implement various types of tours.

**Skills to be developed:**

1. Students will be able to perform online as well as offline booking and cancellation procedures for different available modes of travel and tourism.
2. Students will be able to acquire earning skills in tourism industry.

Introduction to Tourism			
Unit No.	Topic	Learning Point	Periods
1	<b>Introduction to Travel and Tourism</b>	1.1 Basic concepts: Travel & Tourism 1.2 Types of Tourist and Tourism 1.3 Types of transportation	05
2	<b>Local Tourism</b>	2.1 Concept and need of local tourism 2.2 Introduction to local tourist places	05
3	<b>Tour planning and Skill development</b>	3.1 Basic skills: Communication, Time Management, Computer operating, online booking, Net banking, Cancellation of booking and ticket, etc. 3.2 Framing the tour plan (Itinerary): Budget (Costing), Duration, Insurance, Route and other requirements for individual, family, group and mass level tours 3.3 Promotion of tourism	10
4	<b>Project work and Visit to tourist place</b>	4.1 One short tour (Not more than two days duration) and Preparation of tour report.	10

**Text Books:**

1. Bhatia. Tourism Development (New Delhi, Sterling)
2. Seth: Tourism Management (New Delhi, Sterling)
3. Kaul: Dynamics of Tourism (New Delhi, Sterling)
4. Mill and Morrison – The Tourism system an Introductory Text (1992) Prentice Hall
5. Cooper, Fletcher, Tourism, Principles and practices (1993) Pitman
6. Burkart and Medlik Tourism, Past, Present and Future (1981) Heinemann, ELBS.
7. P.S. Gill, Dynamics of Tourism (4 Vols) Anmol Publication.
8. P.C. Sinha, Tourism Management. Anmol Publication.

**References:**

1. Travel Industry : Chunky Gee et-al
2. Tourism Systems - Mill and Morrison
3. Tourism Management Vol - 4 - P.C. Sinha
4. Tourism Development - R. Gartner
5. Studies in Tourism - Sagar Singh
6. Tourism: Principles and Practices - Cooper C., Fletcher J., Gilbert D and Wanhil.
7. Tourism: Principles and Practices - McIntosh , R.W.
8. Tourism : Past, Present and Future - Burkart & Medli



**SAVITRIBAI PHULE PUNE UNIVERSITY**  
(Formerly University of Pune)

**S.Y.B.A. Economics Syllabus**

(Choice Based Credit System and Semester System)

**Revised Syllabus will be implemented with effect from the  
academic year 2020-2021**

<b>Paper</b>	<b>Semester</b>	<b>Title of the Paper</b>
G -2	III & IV	Financial System
S -1	III & IV	Micro Economics
S -2	III & IV	Macro Economics

**SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE**  
Choice Based Credit System (CBCS) Course Structure

Faculty of Humanities

**B.A. Second Year Syllabus**

Semester Pattern Effective from 2020-21

Subject: **Economics**

Semester	Core Course	Paper No	Name of Paper	Lectures / week	Total No. of Lectures	CA Marks	ESE Marks	Total	Credits
Semester III	Economics DSE – 1A	S1	Micro Economics - I	4	55	30	70	100	3
	Economics DSE – 2A	S2	Macro Economics- I	4	55	30	70	100	3
	Economics CC-1C	G2	Financial System - I	4	55	30	70	100	3
	SEC-I SEC -2A		Basic Concept of Research Methodology - I	3	45	15	35	50	2
	<b>Total</b>				15	210	105	245	350
Semester IV	Economics DSE – 1B	S1	Micro Economics- II	4	55	30	70	100	3
	Economics DSE – 2B	S2	Macro Economics- II	4	55	30	70	100	3
	Economics CC -1D	G2	Financial System- II	4	55	30	70	100	3
	SEC-II SEC -2B		Basic Concept of Research Methodology - II	3	45	15	35	50	2
	<b>Total</b>				15	210	105	245	350
<b>Grand Total (Sem. III &amp; IV)</b>				<b>30</b>	<b>420</b>	<b>210</b>	<b>490</b>	<b>700</b>	<b>22</b>

SEC = Skill Enhancement Course  
CC - Core Course  
CA - Continuous Assessment  
ESE -End Of Semester Examination

**S.Y.B.A. Economics (Revised Syllabus)**  
**Choice Based Credit System (CBCS)**

**G -2. Financial System**

**Preamble:**

A financial system is a network of financial institutions, financial markets, financial instruments and financial services to facilitate the transfer of funds. It serves as a backbone of any economy. This paper aims to provide knowledge about the financial system in the country. It also aims to introduce international financial institutions operating in the global economy. The present era is the one with huge changes, development and challenges in every sector. This paper on financial system will also highlight some of the important changes taking place in the Indian financial sector.

**Objectives (Course Outcomes) of the Paper:**

- To understand fundamentals of modern financial system.
- To understand the recent trends and developments in banking system.
- To understand the role of the Reserve Bank of India in Indian financial system.
- To provide the knowledge of various financial and non-financial institutions.
- To provide the students the intricacies of Indian financial system for better financial decision making.

**Method of Teaching:**

Classroom lectures, Use of ICT, YouTube lectures, Online PPTs, Group Discussions, Teacher driven Power Point Presentations

**Semester III**  
**CC-1C - Financial System I**

<b>Unit</b>	<b>Name and Contents</b>	<b>Number of Lectures</b>
<b>1</b>	<b>Indian Financial System</b>	<b>12</b>
1.1	Introduction: Meaning, Nature, Role and Importance of Indian Financial System.	
1.2	Structure of Indian Financial System.	
1.3	Characteristics and Functions of Components of Indian Financial System.	
<b>2</b>	<b>Banking in India</b>	<b>10</b>
2.1	Commercial Banks (Public Sector Banks, Private Sector Banks, Foreign Banks): Management, Organization and Functions.	
2.2	Regional Rural Banks and Co-operative Banks: Evolution, Management and Organization, Loan Management, Functions, Problems and Measures to solve the problem.	
<b>3</b>	<b>Financial Markets in India</b>	<b>12</b>
3.1	Classification of Financial Market.	
3.2	Indian Money Market: Features, Functions and Instruments.	
3.3	Indian Capital Market: Features, Functions and Instruments.	
3.4	Foreign Exchange Market: Role and Importance.	
<b>4</b>	<b>Important Financial Institutions</b>	<b>14</b>
4.1	Meaning and Importance of Financial Institutions.	
4.2	Stock Markets: NSE and BSE: Meaning & Functions.	
4.3	Non-Banking Financial Intermediaries: Meaning and Functions.	
4.4	Role and Functions of Financial Institutions in India with reference to UTI, LIC, GIC	



**Semester IV**  
**CC -1D - Financial System II**

<b>Unit</b>	<b>Name and Contents</b>	<b>Number of Lectures</b>
<b>1</b>	<b>Reserve Bank of India</b>	<b>12</b>
1.1	Structure and Role of RBI in Indian Economy	
1.2	Major Functions of RBI.	
1.3	Monetary Policy: Tools and their Limitations.	
<b>2</b>	<b>Other Financial Regulators in India</b>	<b>10</b>
2.1	SEBI: Role and Functions.	
2.2	IRDA: Role and Functions.	
<b>3</b>	<b>International Financial Institution</b>	<b>14</b>
3.1	Role, Structure, Objectives and Functions of IMF.	
3.2	Role, Structure, Objectives and Functions of World Bank.	
3.3	Role, Structure, Objectives and Functions of Asian Development Bank.	
3.4	Role, Structure, Objectives and Functions of BRICS Bank.	
<b>4</b>	<b>Recent Developments in Indian Financial Sector</b>	<b>12</b>
4.1	Objectives and Outcomes of Changing Landscape of Banking Sector in India.	
4.2	Insolvency and Bankruptcy Code.	
4.3	Alternate Source of Finance.	
4.4	Risk Management in Banking Sector.	

**Basic Reading List:**

1. The Indian Financial System, Markets, Institutions and Services, Bharati V.Pathak, Kindle Edition.
2. Indian Financial System, Jaydeb Sarkhel, Seikh Salim, McGraw-Hill India Pvt. Ltd. Chennai, 2018.
3. Indian Banking, R. Parmehwaram & S. Natrajan , S. Chand Publishing, Delhi.

4. Non-Banking Financial Companies in India: Functioning & Reforms, Jafor Ali Akhan, New Century Publications, 2010
5. Indian Financial Markets, Ajay Shah, Michael Gorham and Susan Thomas, Elsevier, 2008.
6. The Story of the Reserve Bank of India, Rahul Bajoria, Kindle Editon.

**Advanced Reading List:**

1. Securities Market and Products: Mr. Sunder Sankaran, Taxman Publication Pvt. Ltd New Delhi.
2. Financial System & Economic Reforms: P. Mohan Rao, Deep & Deep Publication Pvt. Ltd. New Delhi 2008.
3. Indian Banking Towards 21st Century : Chawla A.S. & others, Deep & Deep Publications, New Delhi.
4. Black Money & Indian Economy: Bhadane J R, International Publications, 2018.
5. Financial Institutions And Markets: Jitendra Mahakund and L.M. Bhole, McGraw Hill India, 2017.

**S.Y.B.A. Economics (Revised Syllabus)**  
**Choice Based Credit System (CBCS)**

**S -1. Micro Economics**

**Preamble**

As a foundation course, in this Paper, student is expected to understand the definition, nature and scope of economics, method and approaches to the study of Economics. The chapters incorporated in this Paper deal with the theory of consumer's behavior, theory of demand and supply, analysis of production function, cost and revenue analysis, market structures and the equilibrium of a firm and industry. In addition, the principles of factor pricing and commodity pricing and welfare economics have been included.

**Objectives of the Paper:**

- To develop an understanding about subject matter of Economics.
- To impart knowledge of microeconomics.
- To clarify micro economic concepts
- To analyze and interpret charts, graphs and figures
- To develop an understanding of basic theories of micro economics and their application.
- To demonstrate that the theories discussed in class will usually be applied to real-life situations.
- To help the students to prepare for varied competitive examinations

**Method of Teaching:**

Classroom lectures, Use of ICT, YouTube lectures, Online PPTs, Group Discussions, Teacher driven Power Point Presentations

<b>Semester III</b>		
<b>DSE – 1A - Micro Economics I</b>		
<b>Unit</b>	<b>Name and Contents</b>	<b>Number of Lectures</b>
<b>Unit 1</b>	<b>Introduction</b>	10
1.1	Meaning, Nature, Scope, Importance of Micro economics	
1.2	Basic Economic Problems	
1.3	Tools of economic analysis- Functional Relationship, Schedules, Graphs and Equations.	
1.4	Variables- Dependent and Independent Variable, Endogenous and Exogenous	
<b>Unit 2</b>	<b>Theory of Consumer Behavior</b>	14
2.1	Utility – Meaning and Types Cardinal Approach: Law of Diminishing Marginal Utility, Law of Equi-Marginal Utility, Consumer’s Equilibrium	
2.2	Ordinal Approach: Indifference Curve Analysis- Meaning and Definition, Characteristics of Indifference Curve, Consumer’s Equilibrium	
<b>Unit 3</b>	<b>Theory of Demand</b>	12
3.1	Meaning of Demand, Determinants of Demand	
3.2	The Law of Demand & Its Exceptions, Market Demand	
3.3	Elasticity of Demand –Meaning and Types 3.3.1 Price Elasticity of Demand: Meaning, Types, Methods of Measurement 3.3.2 Income Elasticity of Demand: Meaning and Types 3.3.3 Cross Elasticity of Demand: Meaning and Types	
<b>Unit 4</b>	<b>Supply and Production Analysis</b>	12
4.1	Meaning, Definition and Determinants of Supply	
4.2	The Law of Supply	
4.3	Elasticity of Supply: Meaning and Types	
4.4	The Production Function: Meaning and Definition	
4.5	Total, Average and Marginal Production	

4.6	The Law of Variable Proportions	
4.7	The Law of Returns to Scale	
<b>Semester IV</b> <b>DSE – 1B - Micro Economics II</b>		
<b>Unit 1</b>	<b>Cost and Revenue Analysis</b>	8
1.1	Cost Concepts : Fixed Costs, Variable Costs, Total Cost, Average Cost, Marginal Cost, Economic Cost and Accounting Cost, Opportunity Cost	
1.2	Short-Run and Long Run Costs curves	
1.3	Revenue Concept: Total Revenue, Average Revenue & Marginal Revenue	
<b>Unit 2</b>	<b>Market Structure</b>	16
2.1	Meaning & Classifications of Market Structure	
2.2	Perfect Competition: Meaning, Characteristics, Equilibrium of Firm and Industry in Short Run and Long Run	
2.3	Monopoly: Meaning, Characteristics, Short and Long Run Equilibrium. Price Discrimination	
2.4	Monopolistic Competition: Meaning, Characteristics, Short & Long Run Equilibrium of firm and Industry, Selling cost- Meaning	
2.5	Oligopoly: Meaning and Characteristics	
2.6	Duopoly: Meaning and Characteristics	
<b>Unit 3</b>	<b>Factor Pricing</b>	16
3.1	Marginal Productivity Theory Of Distribution	
3.2	Rent: Ricardian Theory of Rent, Modern Theory of Rent, Quasi Rent	
3.3	Wages: Modern Theory of Wages, Supply Curve of Labour	
3.4	Interest: Keynesian Liquidity Preference Theory, Loanable Fund Theory	
3.5	Profit: Risk and Uncertainty Theory, Innovation Theory	
<b>Unit 4</b>	<b>Introduction to Welfare Economics</b>	08
4.1	Welfare Economics: Definition and Meaning	
4.2	Pigovian Welfare Economics	
4.3	Thought of Amartya Sen on Welfare Economics	

### **Reference Books:**

1. Mansfield, E., Microeconomics, W.W. Norton and Company, New York.
2. Koutsoyiannis, A., Modern microeconomics, Macmillan, London.
3. Lipsey & Cristal, Introduction to Positive Economics, Oxford Press.
4. Jack Hirshlifer, Price Theory and Applications, Prentice Hall of India Pvt. Ltd. Delhi
5. Ahuja H.L. : Modern Micro Economics, S. Chand & Company Ltd New Delhi
6. Jhingan M.L., Micro Economic Theory, Virinda Publication, Delhi.
7. K.K. Dewett, Modern Economics Theory, S. Chand Publications, New Delhi.
8. KPM Sundaram and E.N.Sundaram, Micro Economics, S.Chand Publication, New Delhi.
9. Seth M.L. : Micro Economics, Lakshmi NarainAgrawal Publisher

## **S.Y.B.A. Economics (Revised Syllabus)**

Choice Based Credit System (CBCS)

### **S -2. Macro Economics**

#### **Preamble -**

Macroeconomics is the branch of economics that deals with the functioning of an economy as a whole. Macroeconomic analysis involves theoretical, empirical as well as policy-related aspects. The theoretical aspect of macroeconomics involves the conceptual as well as theoretical framework of macroeconomics. It deals with various macroeconomic concepts as well as various macroeconomic theories. The theoretical framework of macroeconomics focuses on functioning of an economy in its totality, determination of the level of national income and employment in an economy, role of aggregate demand as well as aggregate supply, role of money, determination of value of money, determination of general price level as well as rate of inflation and business cycles. The empirical aspect of macroeconomics applies macroeconomic theories to the study of real economies and tests the validity of macroeconomic theories. The policy-related aspect focuses on the role of fiscal and monetary policy in achieving macroeconomic objectives with the help of various policy instruments.

This curriculum integrates conceptual, theoretical, empirical and policy-related aspects of macroeconomics. This curriculum introduces the undergraduate students to the field of macroeconomics and enables them to learn the functioning of the economy in a systematic manner.

#### **Objectives –**

- To introduce students to the historical background of the emergence of macroeconomics
- To familiarize students with the differences between microeconomics and macroeconomics
- To familiarize students with various concepts of national income
- To familiarize students with keynesian macroeconomic theoretical framework of consumption and investment functions
- To introduce students to the role of money in an economy.
- To introduce students to the conceptual and theoretical frameworks of inflation, deflation and stagflation, Business Cycle .

- To familiarize students with the conceptual and theoretical framework of business cycles
- To introduce students to the role of monetary and fiscal policies in fulfilling the macroeconomic objectives of stability, full employment and growth.
- To introduce students to the various instruments of monetary and fiscal policies

**Method of Teaching:**

- Classroom lectures, Use of ICT, You Tube lectures, Online PPTs, Group Discussions, Teacher driven Power Point Presentations

<b>Semester III</b> <b>DSE – 2A - Macro Economics I</b>		
<b>Unit</b>	<b>Name and Contents of the Chapter</b>	<b>Number of Lectures</b>
<b>Unit 1</b>	<b>Introduction</b>	12
1.1	Meaning, Nature and Scope of Macro Economics	
1.2	Importance and Limitations of Macro Economics	
1.3	The difference between Micro Economics and Macro Economics	
<b>Unit 2</b>	<b>National Income</b>	12
2.1	Meaning and Importance of National Income	
2.2	Various Concepts of National Income – GDP, GNP, NNP, PCI, Personal Income, Disposable Income	
2.3	Methods of National Income Measurement Difficulties in the Measurement of National Income	
2.4	Circular Flow of National Income	
<b>Unit 3</b>	<b>Theory of Employment and Output</b>	12
3.1	Classical Theory of Employment , Say’s Law of Market.	
3.2	Keynes’ Criticism on Classical Theory	
3.3	Keynesian Theory of Employment – Aggregate Supply Price and	



	Aggregate Demand Price, Employment Determination	
<b>Unit 4</b>	<b>Consumption and Investment</b>	12
4.1	Consumption Function – Meaning, Various Concepts - APC, MPC, Psychological Law of Consumption, Factors Influencing Consumption Function	
4.2	Saving - APS, MPS. Investment – Meaning, Types, Marginal Efficiency of Capital	
4.3	The Concept of Multiplier; The Principle of Acceleration	
<b>Semester IV</b> <b>DSE – 2B - Macro Economics II</b>		
<b>Unit 1</b>	<b>Money</b>	12
1.1	Money – Meaning and Functions	
1.2	Value of Money – Meaning, Quantity Theory of Money, Cash Balance Approach	
1.3	Supply of Money – Various Measures of RBI	
<b>Unit 2</b>	<b>Inflation</b>	12
2.1	Inflation – Meaning, Types, Causes – Demand Pull and Cost Push Inflation, Effects	
2.2	Measures to Control Inflation	
2.3	Deflation – Meaning, Causes and Effects	
2.4	Philips Curve, Stagflation – Meaning	
<b>Unit 3</b>	<b>Business Cycles</b>	12
3.1	Meaning, Features and Phases of Business Cycle	
3.2	Causes and Effects of Business Cycle	
3.3	Keynes’ Theory of Business Cycle	
3.4	Control of Business Cycles – Monetary and Fiscal Controls	

<b>Unit 4</b>	<b>Macroeconomic Policies</b>	12
4.1	Objectives of Macroeconomic Policies	
4.2	Monetary Policy - Meaning, Instruments, Advantages and Limitations	
4.3	Fiscal Policy - Meaning, Instruments, Advantages and Limitations	

### **Basic Reading List –**

- 1 David Colander, Macro Economics, McGraw Hill Education Private Limited (Latest Edition)
2. D. N. Dwivedi, Macro Economics: Theory and Policy, McGraw Hill Education Private Limited (Latest Edition)
3. H. L. Ahuja, Macro Economics: Theory and Policy, S. Chand & Company Limited. (Latest Edition)
4. M. L. Jhingan, Macro Economic Theory, Vrinda Publications Private Limited (Latest Edition)
5. Wavare Anil Kumar & V.Kumbhar ,(2019)Macro Economics,Ruby Publisher, Kolhapur, MS, India.
6. N. Gregory Mankiw, Principles of Macroeconomics, Cengage Learning (Latest Edition)
7. Olivier Blanchard & David Johnson, Macroeconomics, Pearson (Latest Edition)
8. Rudiger Dornbusch, Stanley Fischer & Richard Startz, Macroeconomics, Tata McGraw Hill Education Private Limited (Latest Edition)
9. Sampat Mukherjee, Macroeconomics: A Global Text, New Central Book Agency Private Limited (Latest Edition)
10. Stephen Williamson, Macroeconomics, Pearson (Latest Edition)
11. Kute Santosh & Rithe M. , Macro Economics, Prashant Publication,Jalgaon,MS,India
12. श्रीधर देशपांडे आणि विनायक देशपांडे, समष्टी अर्थशास्त्रीय विश्लेषण, हिमालय पब्लिशिंग हाउस(Latest Edition)

### **Advanced Reading List**

1. Ben Fine & Ourania Dimakou, Macroeconomics: A Critical Companion, Pluto Press (Latest Edition)
2. Brian Snowdon & Howard Vane (2003), The Development of Modern Macroeconomics: A Rough Guide, in Macroeconomics: A Reader, (Ed.) Brian Snowdon and Howard Vane, Routledge

3. Brian Snowdon & Howard Vane, *Macroeconomics: A Reader*, Routledge (Latest Edition)
4. Brian Snowdon & Howard Vane, *Modern Macroeconomics: Its Origins, Developments and Current State*, Edward Elgar (Latest Edition)
4. David Romer, *Advanced Macroeconomics*, McGraw-Hill (Latest Edition)
5. Dilip Nachane, *Critique of the New Consensus Macroeconomics and Implications for India*, Springer (Latest Edition)
6. John McDonald, *Rethinking Macroeconomics: An Introduction*, Routledge (Latest Edition)
7. Michel De Vroey, *A History of Macroeconomics: From Keynes to Lucas and Beyond*, Cambridge University Press (Latest Edition)
8. N. Gregory Mankiw, *Macroeconomics*, Worth Publishers (Latest Edition)
9. Roger Backhouse, *Interpreting Macroeconomics: Explorations in the History of Macroeconomic Thought*, Routledge (Latest Edition)
10. Sampat Mukherjee, *Analytical Macroeconomics: From Keynes to Mankiw*, New Central Book Agency Private Limited

## **SKILL DEVELOPMENT ACTIVITIES**

**(Any Three of the following)**

( **IMPORTANT NOTES** - At the end of the course three point/ activities each should be selected for each semester (III & IV semester ) from the different points given in the appendix.

The important questions and issue in your area should be considered and the issue / activities related to the subject should be given to the student accordingly . Such as Agriculture Sector ,farmers ,Cooperative Sector ,Small Scale Industries etc. )

1. Prepare a chart showing the steps of research.
2. Prepare a chart showing the sampling technique
3. Prepare Charts showing sources of primary data.
4. Prepare a chart showing sources of secondary data.
5. Construct a questionnaire to measure student's attitude towards the purchase of two wheelers / readymade garments etc.
6. Collect the data related to any schemes of your locality and present in front of the students.
7. Construct a questionnaire for collection of primary data on any Social issue.

**Savitribai Phule Pune University**  
**Skill Enhancement Course (SEC):**  
**SYBA (Economics)**  
**Basic Concept of Research Methodology**

Credits: 02

Periods: 45

Marks: 50

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	<p><b>Course outline:</b> The course will be given in the form of lectures and practical work .Lectures will focus on research, especially with regard to sampling methods, data collection and data preparation. The course will focus on the practical implementation of diverse sample techniques. Students are expected to collect and classify the data.</p> <p><b>Aims and objectives of course:</b></p> <ul style="list-style-type: none"><li>• To develop the understanding of the basic concept of research.</li><li>• To develop the understanding of the basic framework of sampling and data collection..</li><li>• To develop the understanding of various sampling methods and techniques.</li><li>• To identify various sources of information for data collection.</li><li>• To develop the understanding of the conducting survey on various issues.</li></ul> <p><b>Learning outcomes of course :</b> On completion of the course, the student shall be able to</p> <ul style="list-style-type: none"><li>• Demonstrate his/her understanding of sampling methods and the ability to use collection of data</li><li>• Identify the appropriate sample techniques for different kinds of research questions</li><li>• Identify the appropriate source of data in relation to the collection of research data.</li><li>• Able to classify and present the collected data in the form of graph, bar diagram, chart etc</li></ul>	
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**Semester III**  
**Skill Enhancement Course (SEC): I**

**SYBA (Economics) - SEC -2A**  
**Basic Concept of Research Methodology**

<b>Unit</b>	<b>Name and Contents</b>	<b>Number of Lectures</b>
<b>Unit 1</b>	<b>Introduction Of Research</b>	<b>10</b>
1.1	Meaning and Definition of Research	
1.2	Types Of Research i)Basic or Pure or Fundamental Research ii)Applied Research iii)Action Research	
1.3	Importance Of Economics Research	
<b>Unit 2</b>	<b>Research Design</b>	<b>10</b>
2.1	Meaning of Research Design	
2.2	Need of Research Design	
2.3	Types of Research Design i)Exploratory Design ii)Descriptive Design iii)Experimental Design	
2.4	Concepts of Hypothesis and Importance	
<b>Unit 3</b>	<b>Data Collection</b>	<b>10</b>
3.1	Meanings and Definition of Data Collection	
3.2	Primary Data	
3.3	Secondary Data Sources	
<b>SKILL DEVELOPMENT ACTIVITIES</b>	<b>SKILL DEVELOPMENT ACTIVITIES</b> <b>Continuous Assessment - (C. A.):</b> To compete any Three Skill Development Activities from the prescribed syllabus, each activity for 05 marks	<b>15</b>
<b>SEMESTER- IV</b> <b>SEC -2B - Skill Enhancement Course (SEC)-II</b>		
<b>Unit 1</b>	<b>Data Analysis</b>	<b>8</b>
1.1	Meaning and Definition of Data Analysis	
1.2	Nature And Importance	
1.3	1.3.1 Graphs	
	1.3.2 Tabulations	

<b>Unit 2</b>	<b>Measures of Central Tendencies</b>	<b>8</b>
2.1	Definition of Mean	
2.2	Definition of Medium	
2.3	Definition of Mode	
2.4	Meaning of Dispersion Definition -Range, Median Deviation, Quartile Derivation, Standard Derivation	
2.5	Concept of Percentages	
2.6	Concepts:- i) Frequency Distribution ii)Cumulative Frequency iii) Class Boundaries iv) Midpoint v) Class Width	
<b>Unit 3</b>	<b>Research Report</b>	<b>14</b>
3.1	Meanings And Objective of Research Report	
3.2	Concepts Of Case Study	
3.3	Characteristics of Good Research Report Writing	
3.4	Objective of Research Report	
3.5	Types Of Research Report	
3.6	Concepts of i)Appendices ii) Review Of Literature iii)Bibliography And References iv)Recommendation v)Hypothesis Testing	
<b>SKILL DEVELOPMENT ACTIVITIES</b>	<b>SKILL DEVELOPMENT ACTIVITIES</b> <b>Continuous Assessment - (C. A.):</b> To compete any Three Skill Development Activities from the prescribed syllabus, each activity for 05 marks	<b>15</b>

**Recommended Books:**

1. P.H. Karmel and M. Polasek (1978), Applied Statistics for Economists, 4th edition, Pitman.
2. M.R. Spiegel (2003), Theory and Problems of Probability and Statistics (Schaum Series).
3. Cochran, William, G. (2008), Sampling Techniques, Third Edition, Wiley-India, ISBN 978 -81-265-1524-0.Reprint: 2008.
4. Bethlehem, J. (2009), Applied Survey Methods: A Statistical Perspective, Wiley.
5. Khandare V.B. and S.Yadav (2015) ,Statistical Methods,Chinmay Publication,Aurangabad.

6. Uwe Flick (2012), *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project*, Sage Publications.
7. S.P.Gupta (2012), *Statistical Methods*, 42nd edition, Sultan chand and sons.
8. Ranjit Kumar (2014), *Research Methodology: A Step-by-Step Guide for Beginners*, 4<sup>th</sup> Edition, Sage Publications.





**SAVITRIBAI PHULE PUNE UNIVERSITY**  
(Formerly University of Pune)

**S.Y.B.A. Political Science Syllabus**  
(CREDIT & SEMESTER SYSTEM)

**Revised Syllabus will be implemented with effect from the  
academic year 2020-2021**

**Savitribai Phule Pune University**  
**POLITICAL SCIENCE**  
**Syllabus of S.Y.B.A**  
**(CBCS pattern to be implemented from 2020-2021)**

<b>PAPER NO.</b>	<b>PAPER TITLE</b>
<b>CORE COURSES (C.C.):</b>	
<b>Semester III CC-1 C (3)</b> And <b>Semester IV CC-1 D (3)</b>	AN INTRODUCTION TO POLITICAL SCIENCE  AN INTRODUCTION TO POLITICAL SCIENCE
OR	
<b>Semester III CC-1 C (3)</b> And <b>Semester IV CC-1 D (3)</b>	AN INTRODUCTION TO POLITICAL IDEOLOGIES  AN INTRODUCTION TO POLITICAL IDEOLOGIES
<b>DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE)</b>	
<b>Semester III DSE-1A (3)</b> And <b>Semester IV DSE-1B (3)</b>	WESTERN POLITICAL THOUGHT  WESTERN POLITICAL THOUGHT
AND	
<b>Semester III DSE-2A (3)</b> And <b>Semester IV DSE-2B (3)</b>	POLITICAL JOURNALISM  POLITICAL JOURNALISM
<b>SKILL ENHANCEMENT COURSE (SEC)</b> <b>(Value / Skill Based Course)</b>	
<b>Semester III SEC 2A (2)</b>	BASICS OF INDIAN CONSTITUTION
<b>Semester IV SEC 2B (2)</b>	BASICS OF INDIAN CONSTITUTION

**Savitribai Phule Pune University, Pune**  
**S. Y. B. A. Political Science**  
**(CBCS pattern to be implemented from 2020-2021)**  
**Core Course (C.C.)**  
**AN INTRODUCTION TO POLITICAL SCIENCE**

**Objectives:**

This course is designed to acquaint students with the –

1. Important sub themes of Political Science as a discipline
2. Approaches to study Political Science
3. Basic Concepts and Values in Political Science

	<b>SEMESTER III</b>	<b>PERIOD</b>
	<b>CC-I C (3)</b>	
<b>Unit 1: The Study of Political Science</b>		<b>12</b>
a) Definition		
b) Nature		
c) Scope		
<b>Unit 2: Approaches to Study Political Science</b>		<b>11</b>
a) Normative		
b) Empirical		
c) Feminist		
<b>Unit 3: Basic Concepts</b>		<b>11</b>
a) The State		
b) The Market		
c) The Civil Society		
<b>Unit 4: Democracy</b>		<b>11</b>
a) Representative		
b) Deliberative		
c) Participatory		
	<b>SEMESTER IV</b>	
	<b>CC-I D (3)</b>	
<b>Unit 5: Basic Political Values</b>		<b>12</b>
a) Liberty		
b) Equality		
c) Justice		

<b>Unit 6: Rights</b>	<b>11</b>
a) Definition and Meaning	
b) Types	
c) Challenges	
<b>Unit 7: Ideologies</b>	<b>11</b>
a) Nationalism	
b) Socialism	
c) Fascism	
<b>Unit 8: International Organisations</b>	<b>11</b>
a) United Nations – Structures, Functions and Challenges	
b) Regional – EU, SAARC, OPEC, NATO	
c) MNCs	

**Readings:**

1. आवारी विलास, २०१९, *राज्यशास्त्र: बदलते प्रवाह व भूमिका*, कानपूर, गरिमा प्रकाशन.
2. Bhargava Rajeev and Ashok Acharya (eds.), 2008, *Political Theory*, Delhi, Pearson .
3. भार्गव राजीव आणि अशोक आचार्य (संपा), बनसोडे हेमंत (अनु.), *राजकीय सिद्धान्त*, नवी दिल्ली, पियरसन प्रकाशन.
4. Christiano Thomas and John Christman (eds.), 2009, *Contemporary Debates in Political Philosophy*, Malden, MA, Wiley-Blackwell.
5. Daniel R Brower, 2005, *The World Since 1945: A Brief History*, Pearson Prentice Hall .
6. गायकवाड संजय, २०१९, *मार्क्स आंबेडकर परिप्रेक्ष्यातून शिक्षण आणि रोजगार*, पुणे, शब्दसंग प्रकाशन.
7. Gaus Gerald F., 2000, *Political Concepts and Political Theories*, Boulder, Westview Press.
8. Goodin Robert, Philip Pettit and Thomas Pogge (eds.), 2007, *A Companion to Contemporary Political Philosophy*, Oxford, Blackwell.
9. Greenstein Fred I. and Pelsby Nelson W, 1975, *Handbook of Political Science*, Addison Wesley Longman.
10. Gupta Sachdeo and Singh S K, 1987, *Political Theory and Ideology*, Delhi, Ajanta Prakashan.
11. Henry D. Aiken, 1956, *The Age of Ideology*, New York, Mentor.
12. Heywood Andrew, *Political Theory – An Introduction*, 2004, Palgrave Basingstoke.
13. जाधव तुकाराम, २०१७, *राजकीय सिद्धांताची तोंड ओळख*, (Translation of O. P. Gauba, *An Introduction to Political Theory*), Pune, K'Sagar.
14. Kaviraj Sudipta and Khilnani Sunil, 2001, *Civil Society, History and Possibilities*, Cambridge, Cambridge University Press.
15. Mackenzie I, *Political Concepts*, 2005, *A Reader and Guide*, Edinburg, Edinburg University Press.
16. पाटीलबी. बी., २०००, *राजकीय संकल्पना*, कोल्हापूर, फडके प्रकाशन.

17. पेंडसे अरुणा, सहस्रबुद्धे उत्तरा, २००८, *आंतरराष्ट्रीय संबंध: शीतयुद्धोत्तर आणि जागतिकीकरणाचे राजकारण*, Mumbai, Orient Longman Pvt Ltd .
18. रायपूरकर व्ही. आर., २००६, *आंतरराष्ट्रीय संबंध*, नागपुर, श्री मंगेश प्रकाशन.
19. रेगे मे. पु., २००५, *स्वातंत्र्य, समता आणि न्याय*, मुंबई, शांता रेगे.
20. Sheldon Garrett Ward, 2005, *Encyclopaedia of Political Thought*, New Delhi.
21. Varma S. P., 2002, *Modern Political Theory*, New Delhi, Vikas Publication.

**Savitribai Phule Pune University, Pune**  
**S. Y. B. A. Political Science**  
**(CBCS pattern to be implemented from 2020-2021)**  
**Core Course (C.C.)**  
**AN INTRODUCTION TO POLITICAL IDEOLOGIES**

**Objectives:**

This course is designed to acquaint students with the –

1. Role of different political ideologies and their impact in politics
2. Close link between an idea and its actual realization in public policy
3. Legacy of all the major ideologies

<b>SEMESTER III</b> <b>CC-1 C (3)</b>	<b>PERIOD</b>
<b>Unit 1: Ideology</b>	<b>12</b>
a) Origin, Meaning, Definition	
b) Nature	
c) Scope	
<b>Unit 2: Nationalism</b>	<b>11</b>
a) Meaning, Definitions and Elements	
b) Progressive and Reactionary	
c) Internationalism	
<b>Unit 3: Democratic Socialism</b>	<b>11</b>
a) Meaning and Nature	
b) Features	
c) Achievements and Limitations	
<b>Unit 4: Fascism</b>	<b>11</b>
a) Principles	
b) Factors responsible for the rise of Fascism	
c) Evaluation	
<b>SEMESTER IV</b> <b>CC-1 D (3)</b>	
<b>Unit 5: Marxism</b>	<b>12</b>
a) Historical Materialism	
b) Marxian State	
c) Neo Marxism	

<b>Unit 6: Phule-Ambekarism</b>	<b>11</b>
a) Equality	
b) Cast & Religion	
c) Democracy	
<b>Unit 7: Gandhism</b>	<b>11</b>
a) Truth and Non-Violence	
b) Theory of Gram Swaraj	
c) Satyagraha	
<b>Unit 8: Feminism</b>	<b>11</b>
a) Meaning and Nature	
b) Liberal Feminism	
c) Feminism in India : Caste and Patriarchy	

**Readings:**

1. D. Bell, 1960, *The End of Ideology*, New York, The Free Press.
2. देवरे सुरेश, २०२०, राजकीय विचार प्रणाली, (Semester 3, e-Book), Amazon Asia Pacific Hoardings Pvt. Ltd.
3. देवरे सुरेश, २०२०, राजकीय विचार प्रणाली, (Semester 4, e-Book), Amazon Asia Pacific Hoardings Pvt. Ltd.
4. E. Gellner, 1983, *Nations and Nationalism*, Oxford, Blackwell.
5. गायकवाड संजय, २०१९, मार्क्स आंबेडकर परिप्रेक्ष्यातून शिक्षण आणि रोजगार, पुणे, शब्दसंग प्रकाशन.
6. J. Bondurant, 1965, *Conquest of Violence: the Gandhian Philosophy of Conflict*, Berkeley, University of California Press.
7. L. P. Baradat, 1989, *Political Ideologies: Their Origins and Impact*, Englewood Cliffs NJ, Prentice Hall.
8. P. Gay, 1952, *The Dilemma of Democratic Socialism: Eduard Bernstein's challenge to Marx*, New York, Columbia University Press.
9. R. M. Christenson, et al., 1971, *Ideologies and Modern Politics*, London, Thomas Nelson and Sons.
10. R. N. Berki, 1975, *Socialism*, London, John Dent and Sons.
11. R. N. Iyer, 1973, *The Moral and Political Thought of Mahatma Gandhi*, New York, Oxford University Press.
12. Sayyad Yasinbhai Gulabbhai, 2018, *Modern Political Theory*, Kanpur, International Publication.
13. Sir I. Berlin, 1981, "Nationalism: Past Neglect and Present Power" in H. Hardy (ed.) *Against the Current*, Oxford, Oxford University Press.
14. तनपुरे संभाजी आणि भुमकार हनुमंत, २०१७, राजकीय विचार प्रणाली, औरंगाबाद, चिन्मय प्रकाशन.
15. The Liberal Tradition in China, 1983, *Hong Kong and New York*, Chinese University, Hong Kong Press.

**Savitribai Phule Pune University, Pune**  
**S. Y. B. A. Political Science**  
**(CBCS pattern to be implemented from 2020-2021)**  
**DISCIPLINE SPECIFIC ELECTIVE COURSE**  
**WESTERN POLITICAL THOUGHT**

**Objectives:**

This course is designed to acquaint students with the –

1. Major traditions of thought that have shaped political discourse in different parts of the world.
2. The great diversity of social contexts and philosophical visions.
3. The history of political thought as a series of critical, interconnected and open-ended conversations about the ends and means of the good life.

<b>SEMESTER III</b> <b>DSE-1A (3)</b>	<b>PERIOD</b>
<b>Unit 1: Plato</b>	<b>12</b>
a) Ideal State	
b) View on Education	
c) Theory of Justice	
<b>Unit 2: Aristotle</b>	<b>11</b>
a) Classification of the State	
b) Views on Slavery	
c) Theory of Revolution	
<b>Unit 3: Machiavelli</b>	<b>11</b>
a) Human Nature	
b) Attitude towards Religion and Morality	
c) Views on State	
<b>Unit 4: Locke</b>	<b>11</b>
a) State of Nature	
b) Natural Rights	
c) Theory of Social Contract	
<b>SEMESTER IV</b> <b>DSE-1B (3)</b>	
<b>Unit 5: Rousseau</b>	<b>12</b>
a) State of Nature	
b) General Will	
c) Theory of Social Contract	



<b>Unit 6: Hegel</b>	<b>11</b>
a) Idealism	
b) Theory of State	
c) Views on Freedom	
<b>Unit 7: J. S. Mill</b>	<b>11</b>
a) Views on Liberty	
b) Representative Government	
c) Views on Utilitarianism	
<b>Unit 8: Karl Marx</b>	<b>11</b>
a) Historical Materialism	
b) Class Struggle	
c) Theory of State and Revolution	

**Readings:**

1. Adams Ian and R.W.Dyson, 2004, *Fifty Great Political Thinkers*, London , Rutledge.
2. भोळे भास्कर, १९९५, *पाश्चिमात्य राजकीय विचारवंत*, नागपुर, पिंपळापुरे.
3. Deo Vijay, SharadGosavi&SanjyotApte, 2011, *Western Political Thought*,Pune , Diamond Publication.
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12. साकळकर ई. आणि जैन अशोक, १९९०, *पाश्चिमात्यराजकीयविचार*, पुणे, सेठ प्रकाशन.
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**Savitribai Phule Pune University, Pune**  
**S. Y. B. A. Political Science**  
**(CBCS pattern to be implemented from 2020-2021)**  
**DISCIPLINE SPECIFIC ELECTIVE COURSE**  
**POLITICAL JOURNALISM**

**Objectives:**

This course is designed to acquaint students with the –

1. Complex relationship between the communication, media and power politics.
2. Critical appraisal of practices of political image management, campaigns, propaganda and censorship.
3. Indian context of political Journalism

<b>SEMESTER III</b> <b>DSE-2A (3)</b>	<b>PERIOD</b>
<b>Unit 1: An introduction to Political Journalism</b>	<b>12</b>
a) Definition and Meaning	
b) Nature	
c) Scope	
<b>Unit 2: Agencies of Political Journalism</b>	<b>11</b>
a) Print	
b) Electronic	
c) Web	
<b>Unit 3: History of Political Journalism</b>	<b>11</b>
a) Pre-Independence	
b) Post-Independence	
c) World History	
<b>Unit 4: Methods of Political Journalism</b>	<b>11</b>
a) Reporting of Political Events	
b) Political Interview	
c) Commentary of Legislation	

**SEMESTER IV**  
**DSE-2B (3)**

<b>Unit 5: Indian Political Process &amp; Journalism</b>	<b>12</b>
a) Role of Social Media in Political Process	
b) Election and Media: Loksabha and Maharashtra Vidhansabha 2014 and 2019 General Elections	
c) Political Parties and Social Media	
<b>Unit 6: Mediatisation of Politics</b>	<b>11</b>
a) Definition and Meaning	
b) Practices	
c) Mediums	
<b>Unit 7: Media &amp; Public Opinion</b>	<b>11</b>
a) Definition and Meaning	
b) Practices	
c) Mediums	
<b>Unit 8: Challenges before Political Journalism</b>	<b>11</b>
a) Increase of Paid News	
b) Party Spirited News Papers & Commercialization	
c) Media Saturation	

**Readings:**

1. आमलेखी, २०२०, प्रोपगंडा, पुणे, मनोविकास प्रकाशन.
2. BorhadeShekhar, 2019, *India & USA's Strategic Dilemma in a Fractured World Order*, Ahmednagar, Suvarnshilp Publications,.
3. बोरटे योगेश, २०१९, *सोशल मीडिया*, धुळे, अथर्व पब्लिकेशन्स.
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7. Hague, B & Loader, B., 1999, *Digital Democracy, Discourse and Decision Making in the Information Age*, New York, Rutledge.
8. Kamath M. V., 2002, *Professional Journalism*, New Delhi, Vikas Publishing House Pvt.Ltd..
9. कुलकर्णी प्रकाश, १९८९, *माध्यम*, पुणे, श्रीविद्या प्रकाशन.
10. पवार श्रीराम, २०१७, *धुमाळी*, पुणे, सकाळ प्रकाशन.
11. पवार श्रीराम, २०१८, *जगाच्या अंगणात*, पुणे, सकाळ प्रकाशन.
12. पवार श्रीराम, २०१८, *राजपाठ*, पुणे, सकाळ प्रकाशन.
13. पवार श्रीराम, २०१९, *मोदीपर्व*, पुणे, सकाळ प्रकाशन.
14. सरदेसाई राजदीप, २०१५, २०१४ *देशाचा चेहरा बदलणारी निवडणूक*, मुंबई, अक्षर प्रकाशन.
15. SardesaiRajdeep, 2020, *How Modi Won India*, Noida, Harper Collins India.
16. R. Ramkrishnan, 1994, *Press & Politics in an Indian State*, Hyderabad, Delta Publishing House.

17. Reese, S.D., Gandy, O.H. Grant, A.E., 2001, *Framing Public Life – Perspectives on Media and Our Understanding of the Social World*, LEA, Mahwah.
18. Roy Barun, 2001, *Beginners Guide to Journalism*, Mumbai, PustakMahal.
19. Trent, J.S. &Friedenburg R. V., 1995, *Political Campaign Communication*, Westport, Praeger.

**SAVITRIBAI PHULE PUNE UNIVERSITY**  
(Formerly University of Pune)

**S.Y.B.A. Political Science Syllabus**  
(CREDIT & SEMESTER SYSTEM)

**Extra Credit syllabus will be implemented with effect from the  
academic year 2020-2021 at College Centers**

**SKILL ENHANCEMENT COURSE (SEC)**  
( Value/Skill Based Course )

**Savitribai Phule Pune University**  
**Political Science**  
**Syllabus for S. Y. B. A. (Extra Credit)**  
**BASICS OF INDIAN CONSTITUTION**

**Objectives:**

1. To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
2. To familiarize students with the working of the Constitution of India.

**SEMESTER III**  
**SEC-2A (2)**

**UNIT – I**

**1. Making of the Indian Constitution**

- a) Historical Background
- b) Constituent Assembly
- c) Preamble
- d) Salient Features

**UNIT - II**

**2. Fundamental Rights**

Major Fundamental Rights-

- a) Right to Equality
- b) Right to Liberty
- c) Right to Freedom of Religion
- d) Cultural and Educational Rights

**References:**

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2. Austin Granville, 2003, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press.
3. आवटे श्रीरंजन आणि राही श्रुती गणेश , २०१९ , *आपलं आयकार्ड* , पुणे , द युनिक अॅकॅडमी पब्लिकेशन .
4. Basu D.D., 2018, *Introduction to the Constitution of India*, New York, LexisNexis.
5. Brass Paul, 1994, *The Politics of Indian Since Independence*, Cambridge, Cambridge University Press,
6. भोळे भा.ल., २०१५, *भारतीयगणराज्याचे शासन आणि राजकारण*, नागपूर, पिंपळापुरे प्रकाशन.
7. चपळगावकरनरेंद्र, २००२, *राज्यघटनेचे अर्धशतक*, मुंबई, मौज प्रकाशन.

8. जाधवतुकाराम आणि विशरापूरकरमहेश, २०१२, भारतीयराज्यघटनावघटनात्मक प्रक्रिया, पुणे, द युनिक अॅकॅडमी पब्लिकेशन.
9. देवरे सुरेश, २०२०, भारतीय राज्यघटनेची ओळखअमेझॉन एशिया पॉसिफिक (पुस्तक-ई, २/१-सेमेस्टर), .होल्डींगज प्रायव्हेट लिमिटेड
10. Jha Rajesh, 2011, *Fundamentals of Indian Political System*, Delhi, Pearson.
11. कांबळेबाळ, वकीलअलिम आणिवदेवरेपी .डी., २०१२, भारताचीराज्यघटना, राजकारणवकायदा, पुणे, डायमंड प्रकाशन.
12. साठे सत्यरंजन, १९९८, भारताच्याराज्यघटनेची५० वर्षे, पुणे, कॉन्टिनेंटल प्रकाशन.
13. व्होरा राजेंद्र आणि पळशीकर सुहास, २०१०, भारतीयलोकशाही: अर्थ आणि व्यवहार, पुणे, डायमंड प्रकाशन.

**Savitribai Phule Pune University**  
**Political Science**  
**Syllabus for S. Y. B. A. (Extra Credit)**  
**BASICS OF INDIAN CONSTITUTION**

**Objectives:** This paper focuses in detail on the political processes and the actual functioning of the political system. It emphasizes on local influences that derive from social stratification of castes and jatis, from language, religion, ethic and economic determinants and critically assesses its impact on the political processes.

**SEMESTER – IV**  
**SEC 2B (2)**

**UNIT – I**

**1. Fundamental Duties**

- a) Concept of Fundamental Duties
- b) Nature of Fundamental Duties
- c) Importance of Fundamental Duties

**UNIT – II**

**2. Directive Principles of State Policy**

- a) Concept of Directive Principles of State Policy
- b) Nature of Directive Principles of State Policy
- c) Significance of Directive Principles of State Policy

**References:**

1. Austin Granville, 1999, *The Indian Constitution: Cornerstone of a Nation*, Oxford, Oxford University Press.
2. Austin Granville, 2003, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press.
3. आवटे श्रीरंजन आणि राही श्रुती गणेश , २०१९ , *आपलं आयकार्ड* , पुणे , द युनिक अॅकॅडमी पब्लिकेशन .
4. Basu D.D., 2018, *Introduction to the Constitution of India*, New York, LexisNexis.
5. Brass Paul, 1994, *The Politics of Indian Since Independence*, Cambridge, Cambridge University Press,
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8. जाधवतुकाराम आणि विशरापूरकरमहेश, २०१२ , *भारतीयराज्यघटनावघटनात्मक प्रक्रिया* , पुणे , द युनिक अॅकॅडमी पब्लिकेशन.



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.होल्डींगज प्रायव्हेट लिमि
10. Jha Rajesh, 2011, *Fundamentals of Indian Political System*, Delhi, Pearson.
11. कांबळे बाळ, वकील अलिम आणि वदेवरेपी .डी., २०१२, *भारताची राज्यघटना , राजकारण व कायदा*,  
पुणे, डायमंड प्रकाशन.
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प्रकाशन.



**S.Y.B.A. Public Administration Syllabus**  
(CREDIT & SEMESTER SYSTEM)

**Revised Syllabus will be implemented with effect from the  
academic year 2020-2021**

**Savitribai Phule Pune University**  
**PUBLIC ADMINISTRATION**  
**Syllabus of S.Y.B.A**  
**(CBCS pattern to be implemented from 2020-2021)**

<b>PAPER NO.</b>	<b>PAPER TITLE</b>
<b>CORE COURSES (C.C.):</b>	
<b>Semester III CC-1 C (3)</b>	DISTRICT ADMINISTRATION
And	
<b>Semester IV CC-1 D (3)</b>	DISTRICT ADMINISTRATION
<b>DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE)</b>	
<b>Semester III DSE-1A (3)</b>	PERSONEL ADMINISTRATION
And	
<b>Semester IV DSE-1B (3)</b>	PERSONEL ADMINISTRATION
AND	
<b>Semester III DSE-2A (3)</b>	DEVELOPMENT ADMINISTRATION
And	
<b>Semester IV DSE-2B (3)</b>	DEVELOPMENT ADMINISTRATION
<b>SKILL ENHANCEMENT COURSE (SEC)</b> <b>(Value / Skill Based Course)</b>	
<b>Semester III SEC 2A (2)</b>	BASICS OF INDIAN CONSTITUTION
<b>Semester IV SEC 2B (2)</b>	BASICS OF INDIAN CONSTITUTION

**Savitribai Phule Pune University, Pune**  
**S. Y. B. A. Public Administration**  
**(CBCS pattern to be implemented from 2020-2021)**  
**CORE COURSE (C.C.)**  
**DISTRICT ADMINISTRATION**

**Objectives**

1. To introduce the students to the concept of District Administration.
2. To make students aware of the changes related to the District Administration.

<b>EMESTER –III</b> <b>CC-1C (3)</b>	<b>PERIOD</b>
<b>Unit 1: District Administration</b>	<b>12</b>
a) Evolution of District Administration	
b) Meaning and Importance of District Administration	
c) Elements of District Administration	
<b>Unit 2: District Collector</b>	<b>11</b>
a) Powers and Functions	
b) Changing Role	
<b>Unit 3: Law and Order</b>	<b>11</b>
c) Meaning and Principles	
d) Agencies of Law and Order	
<b>Unit 4: Revenue Administration</b>	<b>11</b>
a) Sub Divisional Officer	
b) Tahashildar	
c) Circle Inspector	
d) Talathi	
<b>SEMESTER – IV</b> <b>CC-1D (3)</b>	
<b>Unit 5: District Police Administration</b>	<b>12</b>
a) District Superintendent Police – Powers, Functions & Role	
b) Local Crime Branch (L. C. B.)	
c) Police Patil	
d) Police Public Relations	
<b>Unit 6: Subordinate Judiciary in India</b>	<b>11</b>
a) District, Session and Taluka Court: Composition and Functions	

- b) District Consumer Courts
- c) Problems and Reforms of Subordinate Judiciary in India

**Unit 7: District Prison Administration** **11**  
a) Structure and Functions  
b) Problems and Reforms

**Unit 8: Agencies at District Level** **11**  
a) District Planning Committee  
b) District Disaster Management Authority  
c) District Rural Development Agency

### Readings

1. Arora R. K. and Goyal Rajani, 2009, *Indian Public Administration*, New Delhi, VishwaPrakasahn.
2. अरोडा रमेश आणि चतुर्वेदीगीता, २००७, *भारतमें राज्याप्रशासन*, जयपूर, आरबीएसएपब्लिशर्स.
3. Battacharya M., Dayal Ishwar and Mathur Kuldeep, 1976, *District Administration*, New Delhi, McMillan.
4. इंगळे उत्तम, २०१२, *महाराष्ट्रातील पोलीस जनतासंबंध*, परभणी, प्रतिभा प्रकाशन.
5. Khera S.S, 1974, *District Administration in India*, New York, Asia Publishing House.
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8. वाघमारे आणि गजभारे, २०१८, *महाराष्ट्र आणि जिल्हा प्रशासन*, लातूर, अरुणा प्रकाशन.

**Savitribai Phule Pune University, Pune**  
**S. Y. B. A. Public Administration**  
**(CBCS pattern to be implemented from 2020-2021)**  
**DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE)**  
**PERSONNEL ADMINISTRATION**

**Objectives**

1. To acquaint students with basic ideas and concepts in Personnel Administration.
2. To make students aware of the various changes and issues in Personnel Administration.

<b>SEMESTER – III</b> <b>DSE-1A (3)</b>	<b>PERIOD</b>
<b>Unit 1: Personnel Administration</b>	<b>12</b>
a) Meaning, Nature and Scope	
b) Characteristics of Public Personnel Administration in India	
c) Functions and Significance	
<b>Unit 2: Civil Service</b>	<b>11</b>
a) Meaning, Features and Functions	
b) Classification of Civil Services System	
<b>Unit 3: Recruitment and Training</b>	<b>11</b>
a) Recruitment: Meaning, Importance and Types	
b) Methods of Recruitment: Spoils and Merit System	
c) Training: Meaning, Objectives and Types	
<b>Unit 4: Promotion and Retirement</b>	<b>11</b>
a) Meaning, Principles of Promotion	
b) Meaning, Needs and Benefits of Retirement	
<b>SEMESTER -IV</b> <b>DSE-1B (3)</b>	
<b>Unit 5: Problems of Personnel Administration</b>	<b>12</b>
a) Human Resource Development	
b) Performance Appraisal	
c) Stress Management and Motivation	
<b>Unit 6: Rights of Employees</b>	<b>11</b>
a) Right to form Association	
b) Right to Strike	
<b>Unit 7: Issues in Personnel Administration</b>	<b>11</b>
a) Discipline	
b) Accountability	
c) Corruption	
<b>Unit 8: Public Personnel Grievances &amp; Redress Mechanisms</b>	<b>11</b>
a) Whitley Council	
b) Staff Council	

c) Administrative Tribunals

**Readings**

1. Avasthi and Maheshwari, 2006, *Public Administration*, Agra, Laxmi Narayan Agarwal Publications.
2. Awari Vilas, 2020, *Public Administration*, Kanpur, Garima Prakashan.
3. बंग के.आर., २०१३, *कर्मचारीवित्तप्रशासन*, औरंगाबाद, विद्याबुक्स.
4. Fadia B.L., 2009, *Public Administration in India*, Agra, Sahitya Bhawan Publications.
5. Goel S.L., 2008, *Personnel Administration*, New Delhi, Deep & Deep Publication.
6. Hoshir Singh and D.P. Singh (ed. ), 1990, *Indian Administration*, Jaipur, Alekh Publishers.
7. Ramesh Arora and Rajni Goyal, (2006), *Public Administration in India*, New Delhi, New Age International Publication.
8. Rudrabasavaraj M.N., 1984, *Dynamic Personnel Administration*, Bombay, Himalaya Publishing House.
9. Maheshwari S. R., 2006, *Indian Administration*, New Delhi, Orient Longman.
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11. पाटील बी. बी., २०१८, *लोकप्रशासन*, कोल्हापूर, फडके प्रकाशन.
12. पोहेकर प्रीती, २०१९, *लोकप्रशासनाची तत्वे*, पुणे, निराली प्रकाशन.

**Savitribai Phule Pune University, Pune**  
**S. Y. B. A. Public Administration**  
**(CBCS pattern to be implemented from 2020-2021)**  
**DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE)**  
**DEVELOPMENT ADMINISTRATION**

**Objectives**

1. To acquaint students with the basic concepts and ideas of Development Administration
2. To give them an understanding of importance, relevance and new trends of Development Administration

<b>SEMESTER – III</b>	<b>PERIOD</b>
<b>DSE-2A (3)</b>	
<b>Unit 1: Introduction</b>	<b>12</b>
a) Development Administration- Meaning, Nature	
b) Scope and Importance	
c) Features of Development Administration	
<b>Unit 2: Origin and Development of Development Administration</b>	<b>11</b>
a) Evolution	
b) Rigg’s Model of Development Administration	
<b>Unit 3: Approaches to the Study of Development Administration</b>	<b>11</b>
a) Ecological Approach	
b) Participatory Approach	
<b>Unit 4: New Trends in Development Administration</b>	<b>11</b>
a) E- Governance – Concept and Importance	
b) Public Private Partnership	
<b>SEMESTER – IV</b>	
<b>DSE-2B (3)</b>	
<b>Unit 5: Bureaucracy in Development Administration</b>	<b>12</b>
a) Meaning	
b) Characteristics of Bureaucracy	
c) Role of Bureaucracy in Development Administration	
<b>Unit 6: Non-Governmental Agencies and Voluntary Organizations</b>	<b>11</b>
a) Meaning and Nature	
b) Role	
<b>Unit 7: New Perspectives of Development</b>	<b>11 20</b>



- a) Human Development Indicators
- b) Sustainable Development Goals

**Unit 8: Issues in Development Administration**

11

- a) Globalization and Development
- b) Gender Parity in Development

**Readings:**

1. Awari Vilas, 2020, *Public Administration*, Kanpur, Garima Prakashan.
2. बंगके.आर., २०११, *विकासप्रशासन*, औरंगाबाद, विद्याबुक्सपब्लिशर्स.
3. Basu Rumki, 2011, *Public Administration: Concepts and Theories*, New Delhi, Sterling Publishers.
4. Bhattacharya Mohit, 2006, *Social Theory, Development Administration, and Development Ethics*, New Delhi, Jawahar Publishers & Distributors.
5. Chakraborty Bidyut, 2018, *Public Administration in the Globalizing World*, New Delhi, Sage Publishers.
6. Chatterji S.K., 1981, *Development Administration with Special reference to India*, New Delhi, Surjit Publication.
7. Goel S.L., 2003, *Advanced Public Administration*, New Delhi, Deep and Deep Publications.
8. Goel S. L., 2009, *Development Administration: Potentialities and Prospects*, New Delhi, Deep and Deep Publications.
9. काणेपी. सी., १९९२, *लोकप्रशासन*, नागपूर, विद्याप्रकाशन.
10. Maheshwari S.R., 2017, *Administrative Theories*, New Delhi, Allied Publishers.
11. पाटीलबी.बी., २०११, *विकासप्रशासन*, कोल्हापूर, फडकेप्रकाशन.
12. Sapru R.K., 2002, *Development Administration*, New Delhi, Sterling Publishers Limited.
13. Sharma R.D., 1992, *Development Administration, Theory and Practice*, Delhi, H.K. Publishers and Distributors.
14. Sharma R.D., 1992, *Development Administration: Theory and Practice*, Delhi., R. D. Publishers and Distributors
15. Tyagi A.R., 1990, *Public Administration*, New Delhi, Atmaram & Sons.

**SAVITRIBAI PHULE PUNE UNIVERSITY**  
(Formerly University of Pune)

**S.Y.B.A. Public Administration Syllabus**  
(CREDIT & SEMESTER SYSTEM)

**Extra Credit syllabus will be implemented with effect from the  
academic year 2020-2021 at College Centers**

**SKILL ENHANCEMENT COURSE (SEC)**

( Value/Skill Based Course )

**Savitribai Phule Pune University**  
**Public Administration**  
**Syllabus for S.Y.B.A. (Extra Credit)**  
**BASICS OF INDIAN CONSTITUTION**

**Objectives:**

1. To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
2. To familiarize students with the working of the Constitution of India.

**SEMESTER III**  
**SEC-2A (2)**

**UNIT – I**

**1. Making of the Indian Constitution**

- a) Historical Background
- b) Constituent Assembly
- c) Preamble
- d) Salient Features

**UNIT - II**

**2. Fundamental Rights**

Major Fundamental Rights-

- a) Right to Equality
- b) Right to Liberty
- c) Right to Freedom of Religion
- d) Cultural and Educational Rights

**References:**

1. Austin Granville, 1999, *The Indian Constitution: Cornerstone of a Nation*, Oxford, Oxford University Press.
2. Austin Granville, 2003, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press.
3. आवटे श्रीरंजन आणि राही श्रुती गणेश , २०१९ , *आपलं आयकार्ड* , पुणे , द युनिक अॅकॅडमी पब्लिकेशन .
4. Basu D.D., 2018, *Introduction to the Constitution of India*, New York, LexisNexis.
5. Brass Paul, 1994, *The Politics of Indian Since Independence*, Cambridge, Cambridge University Press,
6. भोळे भा.ल., २०१५, *भारतीयगणराज्याचे शासन आणि राजकारण*, नागपूर, पिंपळापुरे प्रकाशन.
7. चपळगावकरनरेंद्र, २००२, *राज्यघटनेचे अर्धशतक*, मुंबई, मौज प्रकाशन.

8. जाधवतुकाराम आणि विशरापूरकरमहेश, २०१२, भारतीयराज्यघटनावघटनात्मक प्रक्रिया, पुणे, द युनिक अॅकॅडमी पब्लिकेशन.
9. देवरे सुरेश, २०२०, भारतीय राज्यघटनेची ओळखअमेझॉन एशिया पॉसिफिक (पुस्तक-ई, २/१-सेमेस्टर), .होल्डींगज प्रायव्हेट लिमिटेड
10. Jha Rajesh, 2011, *Fundamentals of Indian Political System*, Delhi, Pearson.
11. कांबळेबाळ, वकीलअलिम आणिवदेवरेपी .डी., २०१२, भारताचीराज्यघटना, राजकारणवकायदा, पुणे, डायमंड प्रकाशन.
12. साठे सत्यरंजन, १९९८, भारताच्याराज्यघटनेची५० वर्षे, पुणे, कॉन्टिनेंटल प्रकाशन.
13. व्होरा राजेंद्र आणि पळशीकर सुहास, २०१०, भारतीयलोकशाही: अर्थ आणि व्यवहार, पुणे, डायमंड प्रकाशन.

**Savitribai Phule Pune University**  
**Public Administration**  
**Syllabus for S.Y.B.A. (Extra Credit)**  
**BASICS OF INDIAN CONSTITUTION**

**Objectives:** This paper focuses in detail on the political processes and the actual functioning of the political system. It emphasizes on local influences that derive from social stratification of castes and jatis, from language, religion, ethic and economic determinants and critically assesses its impact on the political processes.

**SEMESTER – IV**  
**SEC 2B (2)**

**UNIT – I**

**1. Fundamental Duties**

- a) Concept of Fundamental Duties
- b) Nature of Fundamental Duties
- c) Importance of Fundamental Duties

**UNIT – II**

**2. Directive Principles of State Policy**

- a) Concept of Directive Principles of State Policy
- b) Nature of Directive Principles of State Policy
- c) Significance of Directive Principles of State Policy

**References:**

1. Austin Granville, 1999, *The Indian Constitution: Cornerstone of a Nation*, Oxford, Oxford University Press.
2. Austin Granville, 2003, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press.
3. आवटे श्रीरंजन आणि राही श्रुती गणेश , २०१९ , *आपलं आयकार्ड* , पुणे , द युनिक अॅकॅडमी पब्लिकेशन .
4. Basu D.D., 2018, *Introduction to the Constitution of India*, New York, LexisNexis.
5. Brass Paul, 1994, *The Politics of Indian Since Independence*, Cambridge, Cambridge University Press,
6. भोळे भा.ल., २०१५, *भारतीय गणराज्याचे शासन आणि राजकारण*, नागपूर, पिंपळापुरे प्रकाशन.
7. चपळगावकर नरेंद्र, २००२, *राज्यघटनेचे अर्धशतक*, मुंबई, मौज प्रकाशन.
8. जाधव तुकाराम आणि विशरापूरकर महेश, २०१२ , *भारतीय राज्य घटना व घटनात्मक प्रक्रिया* , पुणे , द युनिक अॅकॅडमी पब्लिकेशन.

9. देवरे सुरेश , २०२०, भारतीय राज्यघटनेची ओळखक अमेझॉन एशिया पॉसिफि (पुस्तक-ई , २/१-सेमेस्टर) ,  
.होल्डींगज प्रायव्हेट लिमि
10. Jha Rajesh, 2011, *Fundamentals of Indian Political System*, Delhi, Pearson.
11. कांबळे बाळ, वकील अलिम आणि व देव रेपी .डी., २०१२, *भारताची राज्यघटना , राजकारण व कायदा*, पुणे,  
डायमंड प्रकाशन.
12. साठे सत्यरंजन, १९९८ , *भारताच्या राज्य घटनेची ५० वर्षे*, पुणे , कॉन्टिनेंटल प्रकाशन.
13. व्होरा राजेंद्र आणि पळशीकर सुहास , २०१० , *भारतीय लोकशाही: अर्थ आणि व्यवहार* , पुणे , डायमंड  
प्रकाशन.



## सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

मराठी विषयाचा पुनर्रचित अभ्यासक्रम- जून २०२० पासून

### S. Y. B. Sc. मराठी

निवड आधारित श्रेयांक पद्धत

Choice Based Credit System [CBCS]

सत्र	विषयाचे नाव
पहिले	उपयोजित मराठी (AECC - 2 A)
दुसरे	मराठी साहित्य (AECC – 2 B)

S. Y. B. Sc. (द्वितीय वर्ष विज्ञान)

विषयाचे नाव

उपयोजित मराठी (AECC – 2 A)

पहिले सत्र

अभ्यासक्रमाची उद्दिष्टे :

- १ मराठी भाषा आणि साहित्य यांच्या परस्परसंबंधाची जाणीव करून देणे.
- २ मराठी भाषेचा परिभाषासापेक्ष आणि शैलीसापेक्ष विकास विद्यार्थ्यांच्या लक्षात आणून देणे.
- ३ मराठी भाषेची उपयोजनात्मक कौशल्ये विकसित करणे.

घटक	तपशील	श्रेयांक	तासिका
१	१ भाषा आणि जीवनव्यवहार : भाषा म्हणजे काय? शास्त्रीय – व्यवहार – साहित्य - कार्यालयीन भाषा, प्रसारमाध्यमे आणि समाजमाध्यमे भाषा. २ अर्जलेखन : विनंती अर्ज, नोकरीसाठी अर्ज ३ संगणकीय अर्जलेखन : युनिकोडमधून मायक्रोसॉफ्ट वर्डमध्ये अर्ज. ४ स्व- परिचय	१	१५
२	१ प्रसारमाध्यमांसाठी लेखन : (कृषि, विज्ञान, तंत्रज्ञान, क्रीडाविषयक) १.१ वृत्तपत्रे : लेख लेखन १.२ नभोवाणी : भाषण लेखन १.३ चित्रवाणी : माहितीपटासाठी संहिता लेखन १.४ महाजाल : ब्लॉग लेखन १.५ नवसमाजमाध्यमांसाठी लेखन : फेसबुक, ट्विटर.	१	१५

संदर्भ ग्रंथ :

- १ व्यावहारिक मराठी पाठ्यपुस्तक, पुणे विद्यापीठ प्रकाशन, पुणे.
- २ व्यावहारिक मराठी- डॉ. कल्याण काळे व डॉ. द.दि.पुंडे.
- ३ व्यावहारिक मराठी- ल.रा.नसिराबादकर, फडके प्रकाशन, कोल्हापूर.



- ४ नवभारत, व्यावहारिक मराठी विशेषांक, ऑगस्ट-सप्टें, १९८२, प्राज्ञ पाठशाला, वाई.
- ५ उपयोजित अभ्यासक्रम, मराठी भाषेची संवादकौशल्ये, यशवंतराव महाराष्ट्र मुक्त विद्यापीठ, नाशिक.
- ६ शासनाव्यवहारात मराठी (समस्या : स्वरूप: प्रक्रिया ), भाषा संचालनालय, शासकीय फोटो झिंको मुद्रणालय, पुणे १९९७.
- ७ व्यावहारिक मराठी- प्रकाश परब
- ८ व्यावहारिक मराठी, डॉ.स्नेहल तावरे
- ९ व्यावहारिक मराठी, डॉ. गोविलकर , डॉ. पाटणकर
- १० व्यावहारिक आणि उपयोजित मराठी, डॉ. मनोहर रोकडे
- ११ बातमीची कार्यक्षेत्रे, यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक.
- १२ दूरदर्शनसाठी लेखन, केशव केळकर
- १३ जाहिरातीचे युग, केशव केळकर
- १४ सृजनात्मक लेखन, आनंद पाटील
- १५ मराठी लेखन मार्गदर्शिका, यास्मिन शेख
- १६ भयंकर सुंदर मराठी भाषा, डॉ. द. दि. पुंडे
- १७ पत्रकारितेचा स्वभाव, ल. न. गोखले
- १८ फीचर रायटिंग, प्रसन्नकुमार अकलूजकर
- १९ भाषांतर मीमांसा, कल्याण काळे, अंजली सोमण
- २० पत्रकारिता : स्वरूप आणि चिकित्सा, महावीर जोंधळे
- २१ व्यावहारिक मराठी भाषा, शरदिनी मोहिते
- २२ जाहिरात शास्त्र, डॉ. वंदना खेडीकर

प्रश्नपत्रिकेचे स्वरूप

उपयोजित मराठी (AECC – 2 A) (सत्र १)

विद्यापीठ सत्र परीक्षा		
वेळ : २ तास	प्रश्नांचा तपशील	गुण : ५०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	अ) ७ पैकी ५ प्रश्नांची उत्तरे प्रत्येकी २० शब्दांपर्यंत लिहा. (घटक १.१)	०५
	ब) ३ पैकी २ प्रश्नांचे उत्तर (घटक १.२, १.३, १.४)	१०
प्रश्न २ रा	३ पैकी २ प्रश्नांचे उत्तर (घटक २.१, २.२, २.३)	१५
प्रश्न ३ रा	२ पैकी १ प्रश्नाचे उत्तर (घटक २.४, २.५)	०५
सत्र परीक्षा एकूण गुण		३५
अंतर्गत मूल्यमापन		
चाचणी		१०
चर्चासत्र / सादरीकरण / गृहपाठ / गटचर्चा / तोंडी परीक्षा / प्रकल्प लेखन		५
अंतर्गत मूल्यमापन एकूण गुण		१५
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		५०
अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे. विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.		
विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.		

S. Y. B. Sc. (द्वितीय वर्ष विज्ञान)

विषयाचे नाव

मराठी साहित्य (AECC – 2 B)

दुसरे सत्र

अभ्यासक्रमाची उद्दिष्टे :

१. साहित्यविषयक अभिरूची विकसित करणे.
२. मराठी भाषा, साहित्य आणि यांच्या परस्परसंबंधाची जाणीव करून देणे.
३. साहित्यविषयक अभ्यासातून जीवनविषयक समज विकसित करणे.
४. विज्ञानसाहित्यविषयक आकलनक्षमता वाढविणे.

घटक	तपशील	श्रेयांक	तासिका
१	१ निबंध लेखन (वैचारिक, सामाजिक, विज्ञानविषयक) २ अभ्यासपुस्तक : <b>मराठी कथा दर्शन</b> संपादक प्रा. डॉ. शिरीष लांडगे, सुनिताराजे पवार, प्रा. डॉ. शांताराम चौधरी रुद्र प्रकाशन, पुणे	२	३०

संदर्भ ग्रंथ :

- १ साहित्य अध्यापन आणि प्रकार, वा. ल. कुलकर्णी गौरव ग्रंथ, संपादक श्री. पु. भागवत, डॉ. सुधीर रसाळ.
- २ कथा : संकल्पना आणि समीक्षा, सुधा जोशी, मौज प्रकाशन.
- ३ मराठी कथा : विसावे शतक, संपादक के. ज. पुरोहित, सुधा जोशी.
- ४ निबंध : शास्त्र व कला - डॉ. प्र. न. जोशी
- ५ निबंधलेखन - निर्मला किराणे.

प्रश्नपत्रिकेचे स्वरूप

मराठी साहित्य (AECC - 2 B) (सत्र २)

विद्यापीठ सत्र परीक्षा		
वेळ : २ तास	प्रश्नांचा तपशील	गुण : ५०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	निबंध लेखन ( वैचारिक, सामाजिक आणि विज्ञानविषयक) ३ पैकी १ विषयावर ३०० शब्दांपर्यंत	१०
प्रश्न २ रा	५ पैकी ३ प्रश्नांची उत्तरे प्रत्येकी १०० शब्दांपर्यंत ( अभ्यासपुस्तक )	१५
प्रश्न ३ रा	२ पैकी १ प्रश्नाचे उत्तर प्रत्येकी ३०० शब्दांपर्यंत ( अभ्यासपुस्तक )	१०
सत्र परीक्षा एकूण गुण		३५
अंतर्गत मूल्यमापन		
चाचणी		१०
चर्चासत्र / सादरीकरण / गृहपाठ / गटचर्चा / तोंडी परीक्षा / प्रकल्प लेखन		५
अंतर्गत मूल्यमापन एकूण गुण		१५
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		५०
अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे. विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.		
विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.		



## सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

मराठी विषयाचा पुनर्रचित अभ्यासक्रम- जून २०२० पासून

द्वितीय वर्ष कला (S. Y. B. A.) मराठी

निवड आधारित श्रेयांक पद्धत

Choice Based Credit System [CBCS]

सत्र	विषयाचे नाव	संकेतांक	पूर्वीचे नाव
पहिले	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कादंबरी	[CC - 1 C (3)]	नियमित अभ्यासक्रम G2
दुसरे	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : ललितगद्य	[CC - 1 D (3)]	
पहिले	व्यावहारिक व उपयोजित मराठी - भाग ३	[CC - 1 C (3)]	पर्यायी अभ्यासक्रम G2
दुसरे	व्यावहारिक व उपयोजित मराठी - भाग ४	[CC - 1 D (3)]	
पहिले	आधुनिक मराठी साहित्य : प्रकाशवाटा	[DSE 1 A (3)]	S1
दुसरे	मध्ययुगीन मराठी साहित्य : निवडक मध्ययुगीन गद्य, पद्य	[DSE 1 B (3)]	
पहिले	साहित्यविचार	[DSE 2 A (3)]	S2
दुसरे	साहित्य समीक्षा	[DSE 2 B (3)]	
पहिले	प्रकाशनव्यवहार आणि संपादन	SEC 2 A (2)	DSE विषयांशी निगडित अनिवार्य
दुसरे	उपयोजित लेखनकौशल्ये	SEC 2 B (2)	

## द्वितीय वर्ष कला (S. Y. B. A.)

नियमित अभ्यासक्रम

पहिले सत्र

विषयाचे नाव

भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कादंबरी [CC – 1 C (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. कादंबरी या साहित्यप्रकाराचे स्वरूप, घटक, प्रकार आणि वाटचाल समजून घेणे.
२. नेमेलेल्या कादंबरीचे आकलन, आस्वाद आणि विश्लेषण करणे.
३. भाषिक कौशल्यविकास करणे.

घटक		तपशील	श्रेयांक	तासिका
१	अ	१ संगणक आणि मोबाईलवर युनिकोडमधून मराठी मुद्रण. २ कळफलक प्रकार : इनस्क्रिप्ट, फोनेटिक ३ मराठी टंकलेखन आणि युनिकोडचा वापर : गुगल इनपुट, मायक्रोसॉफ्ट इनपुट व इतर साधने	१	१५
	ब	१ कादंबरी : स्वरूप आणि घटक २ कादंबरी : प्रकार आणि वाटचाल		
२		अभ्यासपुस्तक रारंग ढांग – प्रभाकर पेंढारकर मौज प्रकाशन गृह, मुंबई	२	३०

संदर्भ ग्रंथ :

१. साहित्य अध्यापन आणि प्रकार, संपादक श्री. पु. भागवत आणि इतर.
२. आधुनिक मराठी वाङ्मयाचा इतिहास, खंड ४, ५, ६, संपादक रा. श्री. जोग.
३. आधुनिक मराठी वाङ्मयाचा इतिहास, अ. ना. देशपांडे
४. मराठी कादंबरी : समाजशास्त्रीय समीक्षा, डॉ. रवींद्र ठाकूर
५. मराठी कादंबरीतील प्रादेशिकता, डॉ. भास्कर शेळके
६. मराठी ग्रामीण कादंबरी, डॉ. रवींद्र ठाकूर
७. मराठी कादंबरीचे पहिले शतक, कुसुमावती देशपांडे
८. कादंबरी आणि मराठी कादंबरी, उषा हस्तक
९. मराठी कादंबरी आस्वादयात्रा, संपादक विजया राजाध्यक्ष
१०. मराठी कादंबरी : तंत्र आणि विकास, प्रा. वा. बापट, ना. वा. गोडबोले
११. मराठी प्रादेशिक कादंबरी : तंत्र आणि स्वरूप, डॉ. मदन कुलकर्णी
१२. मराठी कादंबरी : चिंतन आणि समीक्षा, डॉ. चंद्रकांत बांदिवडेकर
१३. कादंबरी : सार आणि विस्तार, डॉ. महेंद्र कदम

१४. कादंबरीविषयी, हरिश्चंद्र थोरात
१५. मराठी कादंबरी : परंपरा आणि चिकित्सा, राजेंद्र सलालकर
१६. मराठी कादंबरी आशय आणि आविष्कार, दत्ता घोलप
१७. सायबर संस्कृती, डॉ. रमेश वरखेडे
१८. उपयोजित मराठी, संपादक डॉ. केतकी मोडक, संतोष शेणई, सुजाता शेणई
१९. ओळख माहिती तंत्रज्ञानाची, टिमोथी जे. ओ लिअरी
२०. <https://play.google.com/store/apps/details?id=org.mkcl.solar.itmarathi&hl>
२१. <http://www.youtube.com/watch?v=oXAWMH5PDxY>

दुसरे सत्र  
विषयाचे नाव

भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : ललितगद्य [CC – 1 D (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. ललितगद्य या साहित्यप्रकाराचे स्वरूप, घटक, प्रकार आणि वाटचाल समजून घेणे.
२. नेमलेल्या अभ्यासपुस्तकातील ललितगद्याचे आकलन, आस्वाद आणि विश्लेषण करणे.
३. भाषिक कौशल्यविकास करणे.

घटक		तपशील	श्रेयांक	तासिका
१	अ	गुगल साधनांचा अध्ययनातील वापर : गुगल फॉर्म, गुगल क्लासरूम, यु ट्यूब.	१	१५
	ब	१ ललितगद्य : स्वरूप आणि घटक २ ललितगद्य : प्रकार आणि वाटचाल		
२		अभ्यासपुस्तक साहित्यरंग संपादक प्रा. डॉ. शिरीष लांडगे, प्रा. डॉ. दिलीप पवार, प्रा. डॉ. जया कदम अक्षर वाङ्मय प्रकाशन, पुणे	२	३०

संदर्भ ग्रंथ :

१. लघुनिबंध ते मुक्तछंद, वि. शं. चौगुले
२. ग्रंथ संवाद, वि. शं. चौगुले
३. मराठी लघुनिबंधाचा इतिहास, डॉ. आनंद यादव
४. निबंध : शास्त्र व कला, डॉ. प्र. न. जोशी
५. मराठी निबंध, प्रा. म. वि. फाटक
६. प्रतिभा साधन, ना. सी. फडके
७. प्रदक्षिणा खंड १ आणि २
८. आधुनिक मराठी वाङ्मयाचा इतिहास, म.सा.प.,पुणे.
९. मराठी प्रवासवर्णनाची वाटचाल, नीला पांढरे
१०. प्रवासवर्णन, वसंत सावंत
११. सायबर संस्कृती, डॉ. रमेश वरखेडे
१२. उपयोजित मराठी, संपादक डॉ. केतकी मोडक, संतोष शेणई, सुजाता शेणई
१३. ओळख माहिती तंत्रज्ञानाची, टिमोथी जे. ओ लिअरी
१४. <https://play.google.com/store/apps/details?id=org.mkcl.solar.itmarathi&hl>
१५. <http://www.youtube.com/watch?v=oXAWMH5PDxY>



## प्रश्नपत्रिकेचे स्वरूप

- भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कादंबरी [CC – 1 C (3)] (सत्र १)
- भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : ललितगद्य [CC – 1 D (3)] (सत्र २)

विद्यापीठ सत्र परीक्षा		
वेळ : ३ तास	घटकनिहाय प्रश्न तपशील	गुण : ७०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	५ पैकी ३ प्रश्नांची उत्तरे प्रत्येकी ५० शब्दांपर्यंत लिहा. (घटक १ व २)	१५
प्रश्न २ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी १५० शब्दांपर्यंत लिहा. (घटक १)	२०
प्रश्न ३ रा	३ पैकी २ उपप्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक २)	२०
प्रश्न ४ था	२ पैकी १ प्रश्नाचे उत्तर ३०० शब्दांपर्यंत लिहा. (घटक २)	१५
सत्र परीक्षा एकूण गुण		७०
अंतर्गत मूल्यमापन		
(घटक १)		
१	अभ्यासेतर-अभ्यासपूरक उपक्रम : जिल्हा ते आंतरराष्ट्रीय स्तरावरील यशस्वी सहभाग / साहित्यविषयक विशेष योगदान / अभ्याससहल / क्षेत्रभेट / अहवाल लेखन	१०
२	प्रकल्प कार्य / सादरीकरण / स्वाध्याय / चर्चासत्र / गटचर्चा / अभिवाचन	
चाचणी (घटक २)		२०
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		१००
विशेष सूचना :		
<ul style="list-style-type: none"> <li>● अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>● विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>● विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		

द्वितीय वर्ष कला (S. Y. B. A.)

पर्यायी अभ्यासक्रम

पहिले सत्र

विषयाचे नाव

व्यावहारिक व उपयोजित मराठी - भाग ३ [CC – 1 C (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. उपयोजित व सर्जनशील लेखनाची क्षमता विकसित करणे.
२. मराठी भाषेची कार्यालयीन, व्यावसायिक कामकाजातील गरज, स्वरूप आणि उपयोजन यांची माहिती करून घेणे.
३. कार्यालयीन, व्यावसायिक भाषा व्यवहारासाठी आवश्यक लेखनकौशल्ये प्राप्त करणे.
४. नवसमाजमाध्यमांतील विविध भाषिक आविष्कारांचे स्वरूप समजून घेणे.

घटक	तपशील	श्रेयांक	तासिका
१	भाषा आणि जीवनव्यवहार भाषा म्हणजे काय? परिभाषेची आवश्यकता, विविध शब्दकोशांची ओळख, शास्त्रीय, व्यवहार, साहित्य, कार्यालयीन भाषा.	१	१५
२	कार्यालयीन लेखन : औपचारिक : माहितीपत्रक, परिपत्रक, सूचना पत्रक इ. अनौपचारिक : ट्विटर, व्हाट्सअप, चित्रफिती इत्यादी	१	१५
३	स्वपरिचय, अर्ज लेखन, जाहिरात लेखन	१	१५

दुसरे सत्र  
विषयाचे नाव

व्यावहारिक व उपयोजित मराठी - भाग ४ [CC – 1 D (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. उपयोजित व सर्जनशील लेखनाची क्षमता विकसित करणे.
२. संगणकाची भाषा आणि त्यातील विविध भाषिक आविष्कारांचे स्वरूप समजून घेणे.
३. विविध कोशांसाठी नोंदलेखन क्षमता विकसित करणे.

घटक	तपशील	श्रेयांक	तासिका
१	इतिवृत्त आणि टिप्पणी लेखन	१	१५
२	संगणक आणि मराठी : मुक्तस्रोत साधनांचा वापर, युनिकोड टंक ओळख, वर्ड एक्सेल, पॉवर पॉईंट.	१	१५
३	विश्वकोश, ज्ञानकोश, विकिपीडिया लेखन : नोंद म्हणजे काय? नोंदीची उदाहरणे, नोंदीची भाषांतरे, प्रत्यक्ष नोंदलेखन	१	१५

संदर्भ ग्रंथ :

१. संगणक, अच्युत गोडबोले, मौज प्रकाशन, मुंबई.
२. इंटरनेट, डॉ. प्रबोध चोबे, मनोरमा प्रकाशन, मुंबई.
३. व्यावहारिक मराठी, डॉ. ल. रा. नसिराबादकर, फडके प्रकाशन, कोल्हापूर.
४. आधुनिक माहिती तंत्रज्ञानाच्या विश्वात, दीपक शिक्रापूरकर, उज्ज्वल मराठे, उत्कर्ष प्रकाशन, पुणे.
५. भाषांतरमीमांसा, कल्याण काळे, अंजली सोमण.
६. व्यावहारिक मराठी, पुणे विद्यापीठ प्रकाशन, पुणे.
७. व्यावहारिक मराठी, डॉ. कल्याण काळे, डॉ. दत्तात्रेय पुंडे, निराली प्रकाशन, पुणे.
८. व्यावहारिक मराठी, डॉ. लीला गोविलकर, डॉ. जयश्री पाटणकर, स्नेहवर्धन प्रकाशन, पुणे.
९. प्रसारमाध्यमांसाठी लेखन कौशल्य, यशवंतराव चव्हाण मुक्त विद्यापीठ नाशिक.
१०. व्यावहारिक मराठी, डॉ. सयाजीराजे मोकाशी, डॉ. रंजना नेमाडे
११. व्यावहारिक मराठी, डॉ. ल. रा. नसिराबादकर, फडके प्रकाशन, कोल्हापूर.
१२. प्रसार माध्यमे आणि मराठी भाषा, संपादक, डॉ. भास्कर शेळके
१३. व्यावहारिक व उपयोजित मराठी आणि प्रसारमाध्यमांची कार्यशैली, संपादक, डॉ. संदीप सांगळे
१४. व्यावहारिक आणि उपयोजित मराठी, डॉ. मनोहर रोकडे
१५. मराठी भाषा उपयोजन आणि सर्जन, प्रा. सुहासकुमार बोबडे
१६. व्यावहारिक मराठी, संपादक डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे.
१७. भाषांतरमीमांसा, संपादक डॉ. रमेश वरखेडे, यशवंतराव चव्हाण मुक्त विद्यापीठ, नाशिक.
१८. सायबर संस्कृती, डॉ. रमेश वरखेडे
१९. उपयोजित मराठी, संपादक डॉ. केतकी मोडक, संतोष शेणई, सुजाता शेणई
२०. ओळख माहिती तंत्रज्ञानाची, टिमोथी जे. ओ लिअरी
२१. <https://play.google.com/store/apps/details?id=org.mkcl.solar.itmarathi&hl>

प्रश्नपत्रिकेचे स्वरूप

- व्यावहारिक व उपयोजित मराठी - भाग ३ [CC – 1 C (3)] (सत्र १)
- व्यावहारिक व उपयोजित मराठी - भाग ४ [CC – 1 D (3)] (सत्र २)

विद्यापीठ सत्र परीक्षा		
वेळ : ३ तास	घटकनिहाय प्रश्न तपशील	गुण : ७०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	६ पैकी ४ प्रश्नांची उत्तरे लिहा. (घटक २ व ३)	२०
प्रश्न २ रा	३ पैकी २ उपप्रश्नांची उत्तरे लिहा. (घटक १)	२०
प्रश्न ३ रा	३ पैकी २ उपप्रश्नांची उत्तरे लिहा. (घटक २ आणि ३)	२०
प्रश्न ४ था	२ पैकी १ उपप्रश्नाचे उत्तर लिहा. (घटक २ आणि ३)	१०
सत्र परीक्षा एकूण गुण		७०
अंतर्गत मूल्यमापन		
चाचणी (घटक २ आणि ३)		२०
(घटक-१)		
१	अभ्यासेतर - अभ्यासपूरक उपक्रम : जिल्हा ते आंतरराष्ट्रीय स्तरावरील यशस्वी सहभाग / साहित्यविषयक विशेष योगदान / अभ्याससहल / क्षेत्रभेट / अहवाल लेखन	१०
२	प्रकल्प कार्य / सादरीकरण / स्वाध्याय / चर्चासत्र / गटचर्चा / अभिवाचन	
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		१००
विशेष सूचना :		
<ul style="list-style-type: none"> <li>● अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>● विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>● विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		

द्वितीय वर्ष कला (S. Y. B. A.)

पहिले सत्र

विषयाचे नाव

आधुनिक मराठी साहित्य : प्रकाशवाटा [DSE 1 A (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. आत्मचरित्र या साहित्यप्रकाराचे स्वरूप, संकल्पना समजावून घेणे.
२. आत्मचरित्र या साहित्यप्रकाराच्या प्रेरणा आणि वाटचाल यांची ओळख करून घेणे.
३. ललित गद्यातील अन्य साहित्यप्रकारांच्या तुलनेत आत्मचरित्राचे वेगळेपण समजावून घेणे.
४. नेमलेल्या या आत्मचरित्राचे आकलन, आस्वाद आणि विश्लेषण करणे.

घटक	तपशील	श्रेयांक	तासिका
१	आत्मचरित्र : संकल्पना, स्वरूप; प्रेरणा आणि वाटचाल अन्य साहित्यप्रकारांच्या तुलनेत आत्मचरित्राचे वेगळेपण	१	१५
२	अभ्यासपुस्तक प्रकाशवाटा - डॉ. प्रकाश आमटे समकालीन प्रकाशन, पुणे	२	३०

संदर्भ ग्रंथ:

१. चरित्र - आत्मचरित्र, अ. म. जोशी
२. चरित्र - आत्मचरित्र, सदा कऱ्हाडे
३. आत्मचरित्र मीमांसा, आनंद यादव
४. मराठीतील आत्मचरित्रपर लेखन, ऊषा हस्तक
५. मराठी वाङ्मय कोश, खंड ४, संपादक, विजया राजाध्यक्ष
६. आत्मचरित्र, मराठी विश्वकोश, खंड २
७. २० व्या शतकातील मराठी आत्मचरित्र, उषा हस्तक

दुसरे सत्र  
विषयाचे नाव

मध्ययुगीन मराठी साहित्य: निवडक मध्ययुगीन गद्य, पद्य [DSE 1 B (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. मध्ययुगीन गद्य – पद्य साहित्यप्रकारांची ओळख करून घेणे.
२. नेमलेल्या अभ्यासपुस्तकातील मध्ययुगीन गद्य - पद्यांचे आकलन, आस्वाद आणि विश्लेषण करणे.

घटक	तपशील	श्रेयांक	तासिका
१	मध्ययुगीन गद्य : महानुभावीय गद्य, बखर, ऐतिहासिक पत्रे; स्वरूप आणि विशेष मध्ययुगीन पद्य : अभंग, भारूड, गवळण, पोवाडा, लावणी; स्वरूप आणि विशेष	१	१५
२	अभ्यासपुस्तक निवडक मध्ययुगीन गद्य, पद्य संपादक प्रा. डॉ. शिरीष लांडगे, प्रा. डॉ. प्रभाकर देसाई, प्रा. डॉ. प्रकाश शेवाळे प्रशांत पब्लिकेशन्स, जळगाव	२	३०

संदर्भ ग्रंथ

१. पाच संतकवी, शं.गो.तुळपुळे
२. महाराष्ट्र सारस्वत, वि.ल.भावे,शं.गो.तुळपुळे
३. संत कवी आणि कवयित्री : एक अनुबंध, सुहासिनी इर्लेकर
४. संत साहित्य दर्शन, उषा देशमुख
५. प्राचीन मराठी वाङ्मयाचा इतिहास, ल. रा. नासिराबादकर
६. संत वचनमृत, रा. द. रानडे
७. ज्ञानेश्वरांची जीवननिष्ठा, गं. बा. सरदार
८. संत नामदेव, हे. वि. इनामदार
९. प्राचीन मराठी वाङ्मयाचा इतिहास, अ. ना. देशपांडे
१०. संत वाङ्मयाची सामाजिक फलश्रुती, गं. बा. सरदार
११. श्री एकनाथ: वाङ्मय आणि कार्य, न. र. फाटक
१२. तुकाराम दर्शन, सदानंद मोरे
१३. संतसाहित्य आकलन आणि अध्यापन, संपादक वसंत आबाजी डहाके आणि इतर, महाराष्ट्र राज्य माध्य. व उच्च माध्य. शिक्षण मंडळ, पुणे.
१४. नामदेव गाथा, ह. श्री. शेणोलीकर, साहित्य अकादेमी
१५. महानुभाव आणि वारकरी साहित्य, सुग्राम पुल्ले
१६. महानुभाव आणि वारकरी साहित्याचे अंतरंग, सुग्राम पुल्ले
१७. साहित्याची सामाजिकता, डॉ.सतीश बडवे,शब्दालय प्रकाशन,श्रीरामपूर,अहमदनगर.
१८. मध्ययुगीन साहित्याविषयी, डॉ.सतीश बडवे, मीरा बुक्स व पब्लिकेशन,औरंगाबाद.
१९. संत साहित्य समीक्षेचे बीजप्रवाह, डॉ.सतीश बडवे, गुरुकुल प्रतिष्ठान,पुणे.

२०. मराठी संत कवयित्रींचा इतिहास, डॉ. विद्यासागर पटांगणकर
२१. वारकरी संप्रदाय : साहित्य व तत्त्वज्ञान, डॉ. विद्यासागर पटांगणकर
२२. मध्ययुगीन मराठी वाङ्मयाचा इतिहास, डॉ. विद्यासागर पटांगणकर
२३. तुका झाला पांडुरंग, दीपक बिचे
२४. संत शिरोमणी बाबा नामदेव, दीपक बिचे

प्रश्नपत्रिकेचे स्वरूप

- आधुनिक मराठी साहित्य : प्रकाशवाटा - डॉ. प्रकाश आमटे [DSE 1 A (3)] (सत्र १)
- मध्ययुगीन मराठी साहित्य : निवडक मध्ययुगीन गद्य, पद्य [DSE 1 B (3)] (सत्र २)

विद्यापीठ सत्र परीक्षा		
वेळ : ३ तास	घटकनिहाय प्रश्न तपशील	गुण : ७०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	५ पैकी ३ प्रश्नांची उत्तरे प्रत्येकी ५० शब्दांपर्यंत लिहा. (घटक १ व २)	१५
प्रश्न २ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी १५० शब्दांपर्यंत लिहा. (घटक १)	२०
प्रश्न ३ रा	३ पैकी २ उपप्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक २)	२०
प्रश्न ४ था	२ पैकी १ प्रश्नाचे उत्तर ३०० शब्दांपर्यंत लिहा. (घटक २)	१५
सत्र परीक्षा एकूण गुण		७०
अंतर्गत मूल्यमापन		
(घटक-१)		
१. अभ्यासेतर-अभ्यासपूरक उपक्रम : जिल्हा ते आंतरराष्ट्रीय स्तरावरील यशस्वी सहभाग / साहित्यविषयक विशेष योगदान / अभ्याससहल / क्षेत्रभेट / अहवाल लेखन		१०
२. प्रकल्प कार्य / सादरीकरण / स्वाध्याय / चर्चासत्र / गटचर्चा / अभिवाचन		
चाचणी (घटक २ आणि ३)		२०
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		१००
विशेष सूचना :		
<ul style="list-style-type: none"> <li>● अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>● विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>● विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		



द्वितीय वर्ष कला (S. Y. B. A.)

पहिले सत्र

विषयाचे नाव

साहित्यविचार [DSE 2 A (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. भारतीय आणि पाश्चात्य साहित्यविचाराच्या आधारे साहित्याची संकल्पना, स्वरूप आणि प्रयोजनविचार समजावून घेणे.
२. साहित्याची निर्मितिप्रक्रिया समजावून घेणे.
३. साहित्याची भाषा आणि शैली विषयक विचार समजावून घेणे.

घटक	तपशील	श्रेयांक	तासिका
१	<ul style="list-style-type: none"><li>● साहित्याचे स्वरूप आणि प्रयोजन</li><li>१. साहित्याची संकल्पना (भारतीय, पाश्चात्यांच्या व्याख्या), साहित्यातील अनुभवाचे विशेष : वास्तव आणि कल्पित यांचा संबंध, संवेदनात्मकता, भावनात्मकता, वैचारिकता, सेन्द्रीयत्व, सूचकता, विशिष्ट आणि विश्वात्मकता</li><li>२. प्रयोजन म्हणजे काय? मम्मटाची प्रयोजने; तसेच इच्छापूती, जिज्ञासातृप्ती, विरेचन, आत्माविष्कार, अनुभवविश्वाची समृद्धी, स्वप्नरंजन, उद्धोधन, प्रचार, मनोरंजन, आनंद या प्रयोजनांचा विचार.</li></ul>	१	१५
२	<ul style="list-style-type: none"><li>● साहित्याची निर्मितिप्रक्रिया</li><li>१. प्रतिभा, स्फूर्ती, कल्पना, चमत्कृती यांचे स्वरूप, संकल्पना आणि कार्य; साहित्यिकाचे व्यक्तिमत्त्व : संवेदनक्षमता, शैशववृत्ती, अनुभवसमृद्धी व विद्वत्ता, साहित्यिकाचा जीवनविषयक आणि साहित्य विषयक दृष्टिकोन.</li></ul>	१	१५
३	<ul style="list-style-type: none"><li>● साहित्याची सामाजिकता व भाषा</li><li>१. साहित्य आणि समाज, जीवनमूल्ये आणि साहित्य मूल्ये, साहित्यवाचनाची प्रक्रिया व आवश्यकता</li><li>२. साहित्याची भाषा : शब्दार्थाचा वक्रव्यापार; वक्रोक्ती, अलंकार, प्रतिमा, प्रतीक, प्राक्कथा</li><li>३. शैली विषयक स्थूल चर्चा - लेखक, आशय, साहित्यप्रकार या अनुरोधाने चर्चा</li></ul>	१	१५

## संदर्भ साहित्य :

१. साहित्यविचार, डॉ. अ. वा. कुलकर्णी
२. साहित्यविचार, (संपा.) डॉ. द.दि. पुंडे, डॉ. स्नेहल तावरे
३. साहित्यविचार, भालचंद्र खांडेकर
४. भारतीय साहित्यविचार, डॉ. लीला गोविलकर
५. काव्यशास्त्र प्रदीप, डॉ. स. रा. गाडगीळ
६. वाङ्मयीन शैली आणि तंत्र, म. द. हातकणंगलेकर
७. साहित्य आणि सामाजिक संदर्भ – रा. ग जाधव
८. साहित्य व सामाजिक संदर्भ – डॉ. अंजली सोमण
९. कविता आणि प्रतिमा - सुधीर रसाळ
१०. साहित्यशास्त्र स्वरूप व समस्या, डॉ. वसंत पाटणकर
११. साहित्य स्वरूप आणि समीक्षा, वा. ल. कुलकर्णी
१२. पाश्चात्य साहित्यविचार, बालशंकर देशपांडे

## द्वितीय सत्र

विषयाचे नाव

### साहित्य समीक्षा [DSE 2 B(3)]

#### अभ्यासक्रमाची उद्दिष्टे :

१. साहित्य समीक्षेची संकल्पना, स्वरूप यांचा परिचय करून घेणे.
२. साहित्य आणि समीक्षा यांचे परस्पर संबंध समजावून घेणे व अभ्यासणे .
३. साहित्यप्रकारानुसार समीक्षेचे स्वरूप समजावून घेणे व अभ्यासणे .
४. ग्रंथ परिचय, परीक्षण व समीक्षण यातील फरक समजावून घेणे.

घटक	तपशील	श्रेयांक	तासिका
१	<ul style="list-style-type: none"><li>● समीक्षा : संकल्पना आणि स्वरूप</li><li>१. समीक्षा : संकल्पना, स्वरूप आणि प्रयोजन</li><li>२. समीक्षा : व्याप्ती आणि प्रकार</li><li>३. साहित्यविचार आणि समीक्षा यातील अनुबंध</li><li>४. साहित्यव्यवहारातील समीक्षेचे स्थान व कार्य</li></ul>	१	१५
२	<ul style="list-style-type: none"><li>● साहित्य आणि समीक्षा यांचे परस्पर संबंध</li><li>१. साहित्यकृती आणि वाचक</li><li>२. साहित्यकृती आणि समीक्षक</li><li>३. समीक्षेतील साहित्याच्या आकलन, आस्वाद, विश्लेषण, अर्थनिर्णयन, मूल्यमापन आणि शब्दांकन यांचे स्थान व कार्य</li></ul>	१	१५
३	<ul style="list-style-type: none"><li>● समीक्षकाचे गुण व पाळावयाची पथ्ये</li><li>१. समीक्षकाचे गुण : रसिकता, प्रज्ञा, तुलनाक्षमता, चिकित्सकता, मूल्यविवेक, विश्लेषकता, व्युत्पन्नता, तुलनाक्षमता इ.</li><li>२. समीक्षकाने पाळावयाची पथ्ये : समीक्षाविषयाचे अवधान व तारतम्य, निकषाचे तारतम्य, व्यक्तिनिष्ठता व वस्तुनिष्ठता यांचे तारतम्य, मांडणी व शैली यांचे तारतम्य, संगती व सुसूत्रता यांचे भान, नेमकेपणा व तार्किकता या संबंधीचा विवेक, वाङ्मयीन मूल्ये व जीवनमूल्ये यांचा परस्परसंबंध आणि त्यांच्या वापराबाबत करावयाचा विवेक.</li><li>३. भाषिक, साहित्यिक, सांस्कृतिक संकेत आणि मूल्यव्यवहार</li><li>४. उपयोजित समीक्षा : ग्रंथ परिचय, ग्रंथ परीक्षण, ग्रंथ समीक्षा</li></ul>	१	१५

#### संदर्भग्रंथ :

१. साहित्य : स्वरूप आणि समीक्षा, वा. ल. कुलकर्णी
२. समीक्षामीमांसा, गंगाधर पाटील
३. मराठीचे साहित्यशास्त्र, मा. गो. देशमुख
४. टीका आणि टीकाकार, वा. भा. पाठक
५. साहित्यविचार आणि सौंदर्यशास्त्र, रा. भा. पाटणकर

६. मराठी समीक्षेची वाटचाल, गो. म. कुलकर्णी
७. सौंदर्यानुभव, प्रभाकर पाध्ये
८. सौंदर्य आणि साहित्य, बा. सी. मर्ढेकर
९. साहित्यातील अधोरेखिते, म. द. हातकणंगलेकर
१०. अब्राह्मणी साहित्याचे सौंदर्यशास्त्र, शरद पाटील
११. मराठी समीक्षेची सद्यस्थिती, वसंत आबाजी डहाके
१२. मराठी समीक्षेची वाटचाल, नीला पांढरे
१३. साहित्याची भाषा, भालचंद्र नेमाडे
१४. टीकास्वयंवर, भालचंद्र नेमाडे
१५. आधुनिक समीक्षा सिद्धांत, मिलिंद मालशे, अशोक जोशी
१६. समीक्षेतील नव्या संकल्पना, संपा. मनोहर जाधव
१७. साहित्य समाज आणि संस्कृती, दिगंबर पाध्ये
१८. मराठी कादंबरीची उपयोजित समीक्षा, गोमटेश्वर पाटील, दर्या प्रकाशन, पुणे
१९. मराठी कादंबरी समाजशास्त्रीय समीक्षा, रवींद्र ठाकूर, दिलीपराज प्रकाशन, पुणे
२०. साहित्य संशोधन : वाटा आणि वळणे, डॉ. सुधाकर शेलार, अक्षरवाङ्मय प्रकाशन, पुणे.
२१. साहित्य संशोधन व समीक्षा, राजेंद्र सलालकर

प्रश्नपत्रिकेचे स्वरूप

- साहित्यविचार [DSE 2 A (3)]
- साहित्य समीक्षा [DSE 2 B (3)]

विद्यापीठ सत्र परीक्षा		
वेळ : ३ तास	घटकनिहाय प्रश्न तपशील	गुण : ७०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी ५० शब्दांपर्यंत लिहा. (घटक १, २, ३)	१०
प्रश्न २ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी १५० शब्दांपर्यंत लिहा. (घटक १)	२०
प्रश्न ३ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक २)	२०
प्रश्न ४ था	३ पैकी २ प्रश्नांची उत्तरे २०० शब्दांपर्यंत लिहा. (घटक ३)	२०
सत्र परीक्षा एकूण गुण		७०
अंतर्गत मूल्यमापन		
(घटक-१)		
१	अभ्यासेतर - अभ्यासपूरक उपक्रम : जिल्हा ते आंतरराष्ट्रीय स्तरावरील यशस्वी सहभाग / साहित्यविषयक विशेष योगदान / अभ्याससहल-क्षेत्रभेट अहवाल लेखन / प्रकल्प कार्य / सादरीकरण / स्वाध्याय / चर्चासत्र / गटचर्चा / अभिवाचन	१०
चाचणी (घटक २ आणि ३)		२०
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		१००
विशेष सूचना :		
<ul style="list-style-type: none"> <li>• अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>• विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>• विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		

## द्वितीय वर्ष कला (S. Y. B. A.)

कौशल्याधिष्ठित अभ्यासक्रम

पहिले सत्र

विषयाचे नाव

प्रकाशनव्यवहार आणि संपादन [SEC 2 A (2)]

### अभ्यासक्रमाची उद्दिष्टे :

१. प्रकाशनव्यवहार आणि संपादन यासाठी आवश्यक कौशल्ये प्राप्त करणे.
२. प्रकाशनव्यवहार आणि संपादन यासाठी आवश्यक प्रशिक्षण घेणे.
३. प्रकाशनव्यवहार आणि संपादन यासाठी प्रात्यक्षिकासह उपयोजनाची कौशल्ये प्राप्त करणे.
४. प्रकाशन संस्था, जाहिरात संस्था, छापखाने, वृत्तपत्र कार्यालये, वितरण संस्था, ग्रंथ विक्री दुकाने, प्लेक्स निर्मिती केंद्र, वार्ताहर यांना भेटी देऊन प्रशिक्षण घेणे.

घटक		तपशील	श्रेयांक	तासिका
१	१	प्रकाशन संस्था : स्वरूप, कार्यप्रणाली, कॉपीराईट कायद्याची तोंडओळख, ग्रंथविक्री, वितरण, जाहिरात, वाचकसंवाद.		
१	२	ग्रंथनिर्मिती प्रक्रिया, ग्रंथ प्रकार : ललित, माहितीपर, शास्त्रीय, संदर्भग्रंथ इ.; ग्रंथनिर्मिती : संहिता संपादन, संपादकीय संस्कार, लेखक संवाद, मुखपृष्ठ, मुद्रणप्रत, छपाई, ग्रंथ बांधणी.	१	१५
२	१	मुद्रितशोधन : लेखनविषयक नियम, मुद्रितशोधन खुणा, विरामचिन्हे, अवतरणे, संक्षेप, मजकुराची मांडणी, चित्र रेखाटन योजना, सूची, संदर्भग्रंथसूची, परिशिष्टे, दर्शनीय स्वरूप, आकार.	१	१५

### संदर्भ ग्रंथ :

- १ पॉप्युलर रीतिपुस्तक, रामदास भटकळ, मृदुला जोशी
- २ सुगम मराठी व्याकरण व लेखन - मो.रा. वाळंबे
- ३ मराठीचे व्याकरण, डॉ. लीला गोविलकर
- ४ मराठी लेखन मार्गदर्शिका, यास्मिन शेख
- ५ मुद्रित-शोधन, य. ए. धायगुडे
- ६ शुद्ध शब्दकोश, डॉ. स्नेहल तावरे
- ७ मराठी शुद्धलेखन नियमावली, डॉ. स्नेहल तावरे
- ८ मराठी लेखन कोश, अरुण फडके
- ९ शुद्धलेखन मार्गप्रदीप, अरुण फडके
- १० उपयोजित मराठी, संपादक डॉ. केतकी मोडक, संतोष शेणई, सुजाता शेणई

- ११ मराठी व्याकरण स्वरूप आणि चिकित्सा, खंडेराव कुलकर्णी
- १२ लेखनमित्र, संपादक, संकलक, संतोष शिंत्रे आणि लौकिका रास्ते – गोखले
- १३ प्रकाशनविश्व, संपादक मोहन वैद्य
- १४ ए डिक्शनरी ऑफ मराठी अँड इंग्लिश – मोल्स्वर्थ  
<https://dsal.uchicago.edu/dictionaries/molesworth/>
- १५ भाषा संचालनालयाने प्रकाशित केलेले विषयवार कोश [www.marathibhasha.org](http://www.marathibhasha.org)
- १६ महाराष्ट्र शब्दकोश – संपादक य . रा . दाते आणि चिं. ग. कर्वे  
<https://www.transliterate.org/dictionary/mr.kosh.maharashtra/source>

दुसरे सत्र  
विषयाचे नाव

उपयोजित लेखनकौशल्ये [SEC 2 B (2)]

अभ्यासक्रमाची उद्दिष्टे :

१. जाहिरात, मुलाखतलेखन आणि संपादन यासाठी आवश्यक कौशल्ये प्राप्त करणे.
२. जाहिरात, मुलाखतलेखन आणि संपादन यासाठी आवश्यक प्रशिक्षण घेणे.
३. जाहिरात, मुलाखतलेखन आणि संपादन यासाठी प्रात्यक्षिकासह उपयोजनाची कौशल्ये प्राप्त करणे.

घटक	तपशील	श्रेयांक	तासिका
१	जाहिरातलेखन : प्रयोजन, स्वरूप, प्रकार, विविध माध्यमांतील जाहिरातींचे स्थान, जाहिरात कल्पना आणि संहितालेखन, इंटरनेट (माहिती महाजाल) जाहिरात आणि संहितालेखन	१	१५
२	मुलाखतलेखन : वृत्तपत्रे, नियतकालिके, दृक्श्राव्य माध्यमांसाठी मुलाखतलेखन		
२	माहितीपर नोंदी : शास्त्रीय ज्ञानकोश, विविध प्रकारचे ज्ञानकोश (विकिपीडिया, विश्वकोश इ. साठी) नोंदलेखन, विविध माध्यमांसाठी नोंद लेखन, प्रात्यक्षिके इ.	१	१५

संदर्भ ग्रंथ :

१. संगणक, अच्युत गोडबोले, मौज प्रकाशन, मुंबई.
२. इंटरनेट, डॉ. प्रबोध चोबे, मनोरमा प्रकाशन, मुंबई.
३. व्यावहारिक मराठी, डॉ. ल. रा. नसिराबादकर, फडके प्रकाशन, कोल्हापूर.
४. आधुनिक माहिती तंत्रज्ञानाच्या विश्वात, शिक्रापूरकर दीपक, मराठे उज्ज्वल, उत्कर्ष प्रकाशन, पुणे.
५. भाषांतरमीमांसा, कल्याण काळे, अंजली सोमण.
६. व्यावहारिक मराठी, पुणे विद्यापीठ प्रकाशन, पुणे.
७. व्यावहारिक मराठी, डॉ. कल्याण काळे, डॉ. दत्तात्रेय पुंडे, निराली प्रकाशन, पुणे.
८. व्यावहारिक मराठी, डॉ. लीला गोविलकर, डॉ. जयश्री पाटणकर, स्नेहवर्धन प्रकाशन, पुणे.
९. व्यावहारिक मराठी, डॉ. सयाजीराजे मोकाशी, डॉ. रंजना नेमाडे
१०. व्यावहारिक मराठी, डॉ. ल. रा. नसिराबादकर, फडके प्रकाशन, कोल्हापूर.
११. प्रसारमाध्यमांसाठी लेखन कौशल्ये, यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक.
१२. प्रसार माध्यमे आणि मराठी भाषा, संपादक, डॉ. भास्कर शेळके
१३. व्यावहारिक व उपयोजित मराठी आणि प्रसारमाध्यमांची कार्यशैली, संपादक, डॉ. संदीप सांगळे
१४. व्यावहारिक आणि उपयोजित मराठी, डॉ. मनोहर रोकडे
१५. मराठी भाषा उपयोजन आणि सर्जन, प्रा. सुहासकुमार बोबडे



१६. व्यावहारिक मराठी, संपादक डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे.
१७. भाषांतरमीमांसा, संपादक डॉ. रमेश वरखेडे, यशवंतराव चव्हाण मुक्त विद्यापीठ, नाशिक.
१८. उपयोजित मराठी, संपादक डॉ. केतकी मोडक, संतोष शेणई, सुजाता शेणई
१९. साहित्य संशोधन : वाटा आणि वळणे, डॉ. सुधाकर शेलार, अक्षरवाङ्मय प्रकाशन, पुणे.
२०. जाहिरातविश्व, संपादक, नंदन दीक्षित, शब्द मल्हार प्रकाशन, प्रथम आवृत्ती, २०१९
२१. अक्षरनिष्ठांची मांदियाळी, (ग्रंथ-शोध आणि वाचन-बोध), अरुण टिकेकर, रोहन प्रकाशन, २०१२.
२२. विक्रत्यांचे अंतरंग, कि. मो. फडके, प्रथमावृत्ती, त्रिदल प्रकाशन, १९९७
२३. मुलाखतीचा मंत्र व नोकरीची हमी, भाऊसाहेब निमगिरीकर, श्रीविद्या प्रकाशन, २०१३.
२४. मुद्रणपर्व, दीपक घारे
२५. शब्दस्पर्श, दीपावली, २०१५
२६. पुस्तकांची मुखपृष्ठे आणि मांडणी, संपादक, अस्मिता मराठ
२७. शब्दस्पर्श, वार्षिक विशेषांक २०१७
२८. पुस्तकविक्रीच्या शटरमागे, संपादक, अस्मिता साठे
२९. मराठी ग्रंथप्रकाशनाची २०० वर्षे, शरद गोगटे, राजहंस प्रकाशन, २००८
३०. लेखनकला आणि लेखनव्यवसाय, वा. गो. आपटे, आनंद कार्यालय, पुणे, १९२६
३१. बखर एका प्रकाशकाची, कुलकर्णी पं. अ. , मेनका प्रकाशन, पुणे १९९२
३२. प्रकाशक रा. ज. देशमुख, प्रकाशक, सदानंद भटकळ, संपा. सदानंद भटकळ, मुकुंदराव किलोस्कर आणि जया दडकर
३३. जाहिरातीचं जग, यशोदा भागवत, मौज प्रकाशन, तिसरी आवृत्ती, २०१७
३४. दशक्रियेची चित्रकथा, संजय कृष्णाजी पाटील, साकेत प्रकाशन, पहिली आवृत्ती, २०१९
३५. अलका तू असं लिही, सौ. मालती दांडेकर, वरदा बुक्स, दुसरी आवृत्ती, १९९५
३६. प्रकाशनातील भावे प्रयोग आणि पतंगाची दोरी, ह. अ. भावे, मंदाकिनी भावे, वरदा बुक्स, पहिली आवृत्ती, २०१४
३७. डॉ. आनंदीबाई जोशी, एका लघुपटाची रोजनिशी, अंजली किर्तने, शब्द प्रकाशन, प्रथमावृत्ती मे २००९
३८. स्वातंत्र्यवीर सावरकर चित्रपटकथा व संवाद, भाग पहिला, विश्राम बेडेकर, पॉप्युलर प्रकाशन, पहिली आवृत्ती, १९९१
३९. पत्रकारितेची मूलतत्त्वे, प्रभाकर पाध्ये, अनु. प्र. ना. परांजपे, वसुधा परांजपे, मेहता पब्लिशिंग हाऊस, पुनर्मुद्रण, २०१४
४०. वृत्तपत्र व्यवसाय काल आणि आज, डॉ. सुधाकर पवार, प्रकाशक, प्रमोद पवार, प्रथमावृत्ती, मार्च १९८६
४१. गाथा कर्नाटक प्रिंटिंग प्रेसची, सदानंद भटकळ, मूळ ग्रंथ: द कर्नाटक प्रेस सागा, अनु. उषा टाकळकर, पद्मगंधा प्रकाशन, पहिली आवृत्ती, २०१०.
४२. ग्रंथालय संघटन, डॉ. रामेश्वर पवार, दिलीपराज प्रकाशन प्रा. लि, प्रथमावृत्ती २०१५.
४३. ग्रंथ महोत्सव, दिनकर पाटील, संस्कृती प्रकाशन, प्रथमावृत्ती २०११.
४४. वाचन कौशल्य, कृती, गती, आणि प्रगती, मेघमाला राजगुरू, उन्मेष प्रकाश, तृतीय आवृत्ती, मार्च २०१०.

४५. वाटा आणि मुक्काम (आशा बगे, भारत सासणे, सानिया, मिलिंद बोकील), मौज प्रकाशन, पहिली आवृत्ती २००९.
४६. वाचनसमृद्धीचे संदर्भ, नीलिमा भावे, परम मित्र पब्लिकेशन्स, आवृत्ती पहिली जून २०१९.
४७. एका ग्रंथपालाची प्रयोगशाळा, नरेंद्र लांजेवार, साकेत प्रकाशन, पहिली आवृत्ती, २०१२.
४८. वाचन का व कसे? प्रा. वा. शि. आपटे, सरिता प्रकाशन, चर्तुर्थ आवृत्ती जाने. २००९.
४९. साहित्यसूची, स्तंभलेखन विशेषांक, संपा. मोरेश्वर द. नादुरकर, १९९६.
५०. जनसंवाद आणि जनमाध्यम : सैद्धांतिक संकल्पन, श्रीपाद भालचंद्र जोशी, श्रीमंगेश प्रकाशन, २०००.
५१. राजहंस ग्रंथवेध, निमित्त विस्ताराचा रौप्यमहोत्सव, , संपा. विनया खडपेकर, जून २०१८
५२. व्यक्तिमत्त्व विकास आणि भाषा, डॉ. मधुकर मोकाशी
५३. व्यावहारिक आणि व्यावसायिक लेखन प्रणाली, डॉ. मधुकर मोकाशी
५४. <https://play.google.com/store/apps/details?id=org.mkcl.solar.itmarathi&hl>
५५. <http://www.youtube.com/watch?v=oXAWMH5PDxY>

प्रश्नपत्रिकेचे स्वरूप

- प्रकाशनव्यवहार आणि संपादन [SEC 2 A (2)]
- उपयोजित लेखनकौशल्ये [SEC 2 B (2)]

विद्यापीठ सत्र परीक्षा		
वेळ : २ तास	घटकनिहाय प्रश्न तपशील	गुण : २५
प्रश्न क्रमांक		गुण
प्रश्न १ ला	दोन पैकी एका प्रश्नाचे उत्तर लिहा. (घटक १.१)	१०
प्रश्न २ रा	दोन पैकी एका प्रश्नाचे उत्तर लिहा. (घटक १.२)	१०
प्रश्न ३ रा	दोन पैकी एका प्रश्नाचे उत्तर लिहा. (घटक २)	५
एकूण गुण		२५
<b>अंतर्गत मूल्यमापन</b>		
लेखी परीक्षा, गृहपाठ, चर्चासत्र सादरीकरण, समूह चर्चा, प्रकल्प कार्य, अभ्यास भेट यापैकी कोणत्याही दोन प्रकारांतून अंतर्गत मूल्यमापन करावे. (१५+१०)		२५
एकूण गुण		५०
<b>विशेष सूचना :</b>		
<ul style="list-style-type: none"> <li>● अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>● विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>● विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		



**SAVITRIBAI PHULE PUNE UNIVERSITY**

(Formerly University of Pune)

# **PSYCHOLOGY**

**SYBA Syllabus**

**(CBCS Pattern – To be implemented from 2020-2021)**

## Structure according to CBCS pattern

### SYBA (Semester III and IV)

Semester	Core Courses	Ability Enhancement Compulsory Courses	Skill Enhancement Courses	Discipline Specific Elective Courses	Generic Elective	Credit
	CC	AEC	SEC	DSE	GE	
<b>III</b>	Compulsory English (3)	Environment Science (2)	<b>SEC-1A (3)</b>	<b>DSE-1A (3)</b>		24
	MIL 2 (2)		SEC-2A (2) Value/skill based course	<b>DSE-2A (3)</b>		
	CC-1C (3)					
	CC-2C (3)					
<b>IV</b>	Compulsory English (3)	Environment Science (2)	<b>SEC-1B (3)</b>	<b>DSE-1B (3)</b>		24
	MIL 2 (2)		SEC-2B (2) Value/skill based course	<b>DSE-2B (3)</b>		
	CC-1D (3)					
	CC-2D (3)					
						48

Semester-3	Semester-4
DSE-1A: Psychology of Abnormal Behaviour-1	DSE-1B: Psychology of Abnormal Behaviour-2
DSE-2A : Developmental Psychology	DSE-2B: Theories of Personality
CC/SEC- 1A: Health Psychology	CC/SEC- 1B: Positive Psychology
SEC-2A: Health Promotion Life Skills	SEC-2B: Basic Counselling Skills

### **Semester-3**

#### **DSE-1A: PSYCHOLOGY OF ABNORMAL BEHAVIOR-I**

**Learning Outcomes:** After the completion of this course students will be able to:

1. acquire the knowledge about the symptoms, diagnostic criteria, and causes of various psychological disorders
2. examine multiple probable causes and correlates of behaviour.
3. understand critiques, limitations, and implications of diagnosis and classification of psychological diseases.
4. create awareness about mental health problems in society.

#### **UNIT-I: Abnormal Psychology: An Overview (12)**

- 1- Abnormality: Meaning, Definition, Nature.
- 2- Historical Background of Abnormality.
- 3- Criteria of abnormal behaviour (Biological, Psychological, Socio-cultural)
- 4- Current Classification Systems: DSM-5 & ICD-10/11 an Overview.

#### **UNIT-II: ANXIETY DISORDERS, OBSESSIVE-COMPULSIVE DISORDERS (OCD), TRAUMA & STRESSOR RELATED DISORDERS (11)**

- 1- Generalized Anxiety Disorders: Nature, Types, Symptoms, Diagnostic Criteria & Causes.
- 2- Panic & Agoraphobia, Social Anxiety (Phobia): Nature, Symptoms, Diagnostic Criteria & Causes
- 3- Obsessive-Compulsive Disorder and Body Dimorphic Disorders: Nature, Symptoms, Diagnostic Criteria & Causes
- 4- Post-Traumatic Stress Disorder & Acute Stress Disorder: Nature, Symptoms, Diagnostic Criteria & Causes

**UNIT-III: SOMATOFORM AND DISSOCIATIVE DISORDERS (11)**

- 1- Somatic symptoms Disorder: Nature, Symptoms, Diagnostic Criteria & Causes
- 2- Illness Anxiety Disorder: Nature, Symptoms, Diagnostic Criteria & Causes
- 3- Conversion Disorders: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 4- Dissociative Identity Disorders: Nature, Types, Symptoms, Diagnostic Criteria & Causes

**UNIT-IV: DEPRESSIVE AND BIPOLAR DISORDERS (11)**

- 1- Disruptive Mood Dysregulation Disorder, Major Depressive Disorder: Nature, Symptoms, Diagnostic Criteria & Causes
- 2- Bipolar-I Disorder: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 3- Bipolar-II Disorder: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 4- Suicide and Cyclothymic Disorder: Nature, Symptoms, Diagnostic Criteria & Causes

## **Books for Reading:**

- American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders (DSM-5) fifth Edition.
- Butcher, J. N., Hooley, J. M., & Mineka, S., (2014). Abnormal Psychology. (16th ed.). Pearson education.
- Comer, R. J. (2019). Fundamentals of Abnormal Psychology, (9th edi.). Macmillan Learning.
- Kring, A.M., Johnson, S. L., Davison, G.C., & Neale, J.M. (2013). Abnormal Psychology. (12th ed.). International student version, John Wiley & Sons, Singapore
- Nolen-Hoeksema, S. (2014). Abnormal Psychology. (6th ed.). New York: McGraw-Hill.
- Nolen-Hoeksema, S. (2019). ISE Abnormal Psychology, (8th edi.). McGraw-Hill Education
- Ray, W. J. (2019). Abnormal Psychology, (3rd edi.). SAGE Publications.
- Whitbourne, S. K., & Halgin, R. P. (2014). Abnormal Psychology: Clinical Perspectives on Psychological Disorders. (7th ed.). McGraw-Hill (Indian reprint 2015).
- World Health Organization. (1992). The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines. Geneva: World Health Organization.



### **Semester-3**

#### **DSE-2A: DEVELOPMENTAL PSYCHOLOGY:**

**Learning Outcomes:** After the completion of this course students will be able to:

- 1: Understand the importance, characteristics and concern in lifespan development
- 2: Understand biological, cognitive, and socio-emotional processes.
3. Understand the periods of development, the significance of age, and discuss developmental issues.
4. Understand Psychoanalytic, Cognitive, Behavioural and Social Cognitive, Ethological, Ecological and Eclectic theories of development
5. Understand methods of data collection and research designs used in Life-span development research

#### **Unit- I: Introduction to Lifespan Development (12)**

- 1- The Life-Span Perspective: The Importance of Studying Life- Span Development, Characteristics of the Life-Span Perspective, Some Contemporary Concerns
- 2- The Nature of Development: Biological, Cognitive, and Socio emotional Processes, Periods of Development, The Significance of Age, Developmental Issues
- 3- Theories of Development: Psychoanalytic Theories, Cognitive Theories, Behavioral and Social Cognitive Theories, Ethological Theory, Ecological Theory, Eclectic Theoretical Orientation
- 4-Research in Life-Span Development: Methods for Collecting Data, Research Designs, Time Span of Research

#### **Unit- II: Biological Beginnings & Prenatal Development (11)**

- 1- Genetic foundation of Development: The Collaborative Genes, Genes and Chromosomes, Genetic Principles, Chromosomal and Gene linked Abnormalities
- 2- Heredity and Environment interaction: The nature × Nurture Debate

3- a) The Teratology and Hazards to prenatal Development

b) Reproductive Challenges and Choices

4- The Course of Prenatal Development and Birth Process

5- Assessing the Newborn

**Unit - III: Infancy**

**(11)**

1- Physical growth and development in infancy

2- Motor, Sensory and Perceptual Development Cognitive Development

3- a) Piaget's Theory of Infant Development

b) Learning, Remembering, and Conceptualizing

4- Language Development

**Unit-IV: Early Childhood**

**(11)**

1- Physical changes, Cognitive Changes

2- a) Piaget's preoperational stages

b) Vygotsky's Theory

3- The Self, Emotional and Moral Development

4- Families, Peer relations and Play

**References:**

- Berk, L. E. (2004). Development through the lifespan. (3rd Ed). New Delhi: Pearson Education Dorling Kindersley India pvt ltd.
- Berk, L. E. (2006). Child Development. (7 Ed). New Delhi: Pearson Education Dorling Kindersley India pvt ltd.
- Cook, J. L., & Cook, G. (2009). Child Development: Principles and Perspectives. Boston: Pearson Education
- Crandell, T. L., Crandell, C. H., & Zanden, J. W. V. (2009). Human Development
- Dacey, J. S. & Travers, J. F. (2004). Human Development across the lifespan. (5 Ed). McGraw Hill co.
- Feldman, R. S., & Babu, N. (2011). Discovering the Life Span. Indian subcontinent adaptation, New Delhi: Dorling Kindersley India pvt ltd.
- Kail, R. V. (2007). Children and their Development. (4 Ed). New Jersey: Pearson Education Inc.
- McDevitt, T. M., & Omrod, J. E. (2007). Child Development and Education. (3 Ed). New Jersey: Pearson Education Inc.
- Papalia, D. E., Olds, S. W., & Feldman, R. (2012). Human Development. (12 Ed). McGraw Hill, international Edition
- Santrock, J.W. (2011). Life-Span Development (13th Edition). NY: McGraw Hill.
- Shaffer, D. R., & Kipp, K. (2007). Developmental Psychology: Childhood and

**Semester-3****SEC- 1A: HEALTH PSYCHOLOGY**

**Learning Outcomes:** After the completion of this course students will be able to:

- 1: Understand health psychology and arrive at the introduction to the role of psychology in health.
- 2: Understand the nature of stress and coping
- 3: Understand various factors related to health and diseases.
- 4: Understand quality of life and promoting the good health.

**Unit-I: An Introduction to Health Psychology (12)**

- 1- Health Psychology – Definitions, Nature, Aims
- 2- Biopsychosocial Model of Health
- 3- Psychology's Role in Health - Problems in the HealthCare System, "The Person" in Health and Illness, How the Role of Psychology Emerged and Progress in Health Psychology's Goals.
- 4- Application: The Need of Health Psychology- Changing Patterns of Illness, Expanded Health Care Services, Increased Medical Acceptance

**Unit-II: Stress and Coping (11)**

- 1- Stress – Definitions, Nature & Types
- 2- Sources of Stress - (Sources within the Person, Sources in the Family & Sources in the Community and Society)
- 3- Responding to Stress (Physiological, Emotional & Behavioural Response)
- 4- Coping Behaviour – Problem Focused coping (Ellis's rational thinking, Positive reinterpretation & Humor as a stress reducer) & Emotion Focused Coping (Using systematic problem solving, using time more effectively & improving self-control)

**Unit-III: Chronic Health Problems and Its Management****(11)**

- 1- Personal Issues in Chronic Health Disorders - The Physical Self, Achieving Self, Social Self & Private Self
- 2- Emotional Responses to Chronic Health Disorders – Denial, Anxiety & Depression
- 3- Major Chronic Health Problems- Heart Disease, Hypertension, Stroke, Cancer, Type II Diabetes & AIDS
- 4- Application: Psychological Interventions for Chronic Health Disorders (Pharmacological Interventions, Individual Therapy, Social Support Interventions and Relaxation, Stress Management after COVID-19)

**Unit-IV: Primary Prevention & Health Promotion****(11)**

- 1- Quality of life and Health Behaviour - Changing Health Habits & Health Beliefs (Attitude change & Placebo Effect)
- 2- Health Compromising Behaviours (Characteristics) - Obesity, Smoking & Drinking.
- 3- Developmental, Gender, and Sociocultural Factors in Health - Development and Health, Gender and Health, Sociocultural Factors and Health
- 4- Health Promoting Behaviours - Diet, Exercise, Sleep, Rest, Vaccination and Screening, Accident prevention

**Source Books**

- Ogden, J. (2017). Health psychology: A textbook (4th ed.). McGraw Hill Education.
- Sarafino, Edward P and Smith, Timothy W (2012). Health Psychology - Bio psychosocial Interaction (7th ed). Wiley India Edition.
- Taylor, Shelley E. (2018). Health Psychology (10th ed). McGraw Hill Higher Education. Indian Edition
- Weiten, W. and Lloyd, M. (2007). Psychology applied to modern life: Adjustment in the 21st century, Indian Edition 8th. Thomson

### SEC-2A: Skill Enhancement Courses (SEC) – (2 Credits)

#### Notes:

1. The University Grants Commission has made it compulsory for students to earn two credits from a Skill Enhancement Course (SEC) in each semester second year onwards.
2. It is mandatory for the student to complete one Skill Enhancement Course (SEC) in each semester from Semester III to Semester VI.
3. Skill Enhancement Course (SEC) will have two (2) credits only.

### SEC-2A: Health Promotion Life Skills

Unit-I: Hygienic behaviour (10)

- 1- Types of infectious diseases
- 2- Signs and symptoms of infectious diseases
- 3- How to prevent infectious diseases: hygienic habits

#### Unit-II: Relationships

- 1- Interpersonal relationship
- 2- Peer pressure- saying no to drugs, tobacco
- 3- Bullying and its effect

#### Unit-III: Competency Mapping

- 1: Competency mapping: Introduction
- 2: Methods of competency mapping
- 3: Competencies dealing with self-management

#### Ref:

Sanghi Seema (2016). The Handbook of Competency Mapping: Understanding, Designing and Implementing Competency Models in Organizations. Sage

**Semester-4****DSE-1B: PSYCHOLOGY OF ABNORMAL BEHAVIOR-II**

**Learning Outcomes:** After the completion of this course students will be able to:

1. Learn descriptions, and theories underlying diagnostic nosology of psychiatric disorders.
2. Learn and understand benefits, critiques, limitations, and implications of diagnosis and classification.
3. Help students to acquire the knowledge about the symptoms, diagnostic criteria, and causes of various psychological disorders.
4. Examine multiple probable causes and correlates of behaviour.
5. Create awareness about mental health problems in society.

**UNIT-I: SCHIZOPHRENIA & OTHER PSYCHOTIC DISORDERS****(12)**

- 1- Schizophrenia: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 2- Schizophreniform Disorder: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 3- Schizoaffective Disorder: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 4- Delusional Disorders: Nature, Types, Symptoms, Diagnostic Criteria & Causes

**UNIT-II: PERSONALITY DISORDERS AND IMPULSE CONTROL DISORDERS (11)**

- 1- Characteristics of Personality Disorder and Gender Differences
- 2- Personality Disorders Characterized by Odd or Eccentric Behavior: Paranoid, Schizoid & Schizotypal - Nature, Symptoms, Diagnostic Criteria & Causes
- 3- Personality Disorders Characterized by Dramatic, Emotional, or Erratic Behavior: Antisocial, Borderline, Histrionic, & Narcissistic - Nature, Symptoms, Diagnostic Criteria & Causes

- 4- Personality Disorders Characterized by Anxious or Fearful Behavior: Avoidant, Dependent, & Obsessive- Compulsive - Nature, Symptoms, Diagnostic Criteria & Causes

**UNIT-III: EATING DISORDERS, SLEEP-WAKE DISORDERS, SEXUAL DISORDERS, SUBSTANCE-RELATED AND ADDICTIVE DISORDERS (11)**

- 1- Eating Disorders (Anorexia Nervosa, Bulimia Nervosa, & Binge- Eating Disorder): Nature, Symptoms, Diagnostic Criteria & Causes
- 2- Sleep-Wake Disorders (Insomnia disorder, hyper somnolence disorder, Narcolepsy. Breathing related sleep disorder, Circadian rhythm sleep-wake Disorder): Nature, Symptoms, Diagnostic Criteria & Causes
- 3- Alcohol Related Disorders (Alcohol use Disorder, Alcohol Intoxication, Alcohol Withdrawal): Nature, Symptoms, Diagnostic Criteria & Causes
- 4- Gambling Disorder, Internet and Cell phone Addiction : Nature, Symptoms, Diagnostic Criteria & Causes

**UNIT-IV: NEURODEVELOPMENTAL DISORDERS (11)**

- 1- Autism Spectrum & ADHD: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 2- Intellectual Disability: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 3- Communication Disorders: Nature, Types, Symptoms, Diagnostic Criteria & Causes
- 4- Learning Disorders: Nature, Types, Symptoms, Diagnostic Criteria & Causes



## **Books for Reading:**

American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders (DSM-5) fifth Edition.

Butcher, J. N., Hooley, J. M., & Mineka, S., (2014). Abnormal Psychology. (16th ed.). Pearson education.

Comer, R. J. (2019). Fundamentals of Abnormal Psychology, (9th edi.). Macmillan Learning.

Kring, A.M., Johnson, S. L., Davison, G.C., & Neale, J.M. (2013). Abnormal Psychology. (12th ed.). International student version, John Wiley & Sons, Singapore

Nolen-Hoeksema, S. (2014). Abnormal Psychology. (6th ed.). New York: McGraw-Hill.

Nolen-Hoeksema, S. (2019). ISE Abnormal Psychology, (8th edi.). McGraw-Hill Education

Ray, W. J. (2019). Abnormal Psychology, (3rd edi.). SAGE Publications.

Whitbourne, S. K., & Halgin, R. P. (2014). Abnormal Psychology: Clinical Perspectives on Psychological Disorders. (7th ed.). McGraw-Hill (Indian reprint 2015).

World Health Organization. (1992). The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines. Geneva: World Health Organization.

**Semester-4****DSE-2B: THEORIES OF PERSONALITY**

**Learning Outcomes:** After the completion of this course students will be able to:

1. Understand the concept of personality with various theories of personality on the basis of personality psychology.
2. Understand different framework and theoretical aspects of personality.
3. Understand and observe, interpret individual differences in behaviour in the light of sound theoretical systems of personality.
4. Understand comprehensive overview of the major theories personality.

**Unit-I: Introduction to Personality (12)**

- 1- Nature and Definitions
- 2- Misconceptions, Determinants of personality
- 3- Idiographic and nomothetic approach
- 4- Classification of personality theories

**Unit-II: Psychodynamic perspectives (11)**

- 1- Introduction to Psychodynamic perspective
- 2- Freud's classical psychodynamic theory
- 3- Jung's Analytical Psychology
- 4- Adler's individual psychology

**Unit-III: Behavioral perspectives (11)**

- 1- Pavlov's classical conditioning
- 2- Skinners operant conditioning
- 3- Bandura's social cognitive theory
- 4- Dollard and Millers stimulus- response theory

**UNIT-IV: Trait & Motivation, Emotion perspectives (11)**

- 1- Allports traits theory, Cattells factor theory
- 2- Eysenck ,Costa &McCrae theory
- 3- Carl Rogers person centered theory
- 4- Motivation and Emotion perspectives
  - Murrays Need theory
  - Lazarus cognitive mediation theory

**Books**

- Hall, C.S., Lindzey, G., & Campbell, J.B. (2007). Theories of Personality. 4th Edn. Wiley: India.
- Hall, C.S., Lindzey, G. & Campbell, J. B. (1998). Theories of Personality. New York: John Wiley & Sons.
- Frager, R. & Fadiman, J. (2007). Personality and personal growth. 6th Edn. Pearson Prentice Hall, India.
- McCrae, R.R. & Allik, J. (eds) (2002). Five-factor model across cultures. Dordrecht: Netherlands: Kluver.
- Mischel, W.; Shoda, Y.; & Smith, R. E. (2004). Introduction to personality. John Wiley & Sons.
- Pervin, L.A. (1996). The science of personality. NY: John Wiley & Co.
- Schultz, D.P & Schultz, E.S. (2005). Theories of personality. Delhi: Thomson Wadsworth.
- Weiten, W. and Lloyd, M. Indian Edition 8th (2007). Psychology applied to modern life: Adjustment in the 21st century. Thomson

**Semester-4****SEC- 1B: POSITIVE PSYCHOLOGY**

**Learning Outcomes:** After the completion of this course students will be able to:

1. Understand how the positive psychology as the science of happiness, human strengths, positive aspects of human behavior and 'psychology of well-being.'
2. How we lead our lives, find happiness and satisfaction, and face life's challenges.
3. How positive psychology has become an evolving mosaic of research and theory from many different areas of psychology.

**Unit-I: Meaning, Definition and Nature of Positive Psychology (12)**

1. Definitions and Nature of Positive Psychology.
2. Traditional Psychology, Assumptions and Goals of Positive Psychology.
3. Fields of Positive Psychology.
4. The Nun study: Living longer with positive emotions.

**Unit-II: Happiness and the Facts of Life (11)**

1. Psychology of well-being. Positive affect and Meaningful Life
2. Subjective Well-being: Hedonic basis of happiness.
3. Self-Realization: The Eudaimonic basis of happiness
4. Happiness Across the Life Span, Gender and happiness, Marriage and happiness, other facts of life.

**Unit-III: Positive Emotions, Wellbeing and Resilience (11)**

1. What are positive emotions? The Broaden and Build Theory of Positive Emotions.
2. Positive Emotions and Health Resources: Physical, Psychological and Social Resources.
3. Positive emotions & well-being, Flow experiences and Savoring.
4. What is resilience? Perspectives of Resilience, Resilience Research, Growth through Trauma.

**Unit-IV: Personal Goals, Positive Traits and Life above Zero. (11)**

1. What are personal goals? The Search for Universal Human Motives, Materialism and its discontents.
2. What makes a trait positive? Personality, Emotions and Biology.
3. Positive beliefs, Virtue and Strengths of Character.
4. Logotherapy: Basic concepts, Contours of positive life: Meaning and Means, Mindfulness and Well-being.

**Books for Reading:**

Badgujar, Chudaman, & Warkhede, Prabhakar (2016) Sakaratmak Manasashatra, Prashant Publications, Jalgaon.

Baumgardner, S. R., & Crothers, M. K. (2009). Positive Psychology: Pearson Education.

Carr, Alan (2007). Positive Psychology: The science of human happiness and human strengths. Routledge, Taylor and Francis Group-London.

Csikzentmihalyi, Mihaly (1990) Flow: The Psychology of Optimal Experience, Harper Perennial.

Garcia, Hector., & Mirrales. Francesc. (2017) IKIGAI-The Japanese Secret to a Long and Happy Life, Hutchinson London.

Frankl, Viktor E. (1988). The Will to Meaning: Foundations and Applications of Logotherapy. Meridian/Plume

Frankl, Viktor E. (2000) Man's Search for Ultimate Meaning, Basic Books.

Shinde, Vishwanath (2016). Sakaratmak Manasashatra, Daimond Publications, Pune.

Snyder, C. R., & Lopez, S. J., & Pedrotti, J. T (2011) Positive Psychology: The Scientific and Practical Explorations of Human Strengths, Sage Publications India Pvt Ltd.

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**SEC-2B: Skill Enhancement Courses (SEC) – (2 Credits)**

Notes:

1. The University Grants Commission has made it compulsory for students to earn two credits from a Skill Enhancement Course (SEC) in each semester second year onwards.
2. It is mandatory for the student to complete one Skill Enhancement Course (SEC) in each semester from Semester III to Semester VI.
3. Skill Enhancement Course (SEC) will have two (2) credits only.

**SEC-2B: Basic Counselling Skills****Unit-I: Introduction of counselling**

- 1- Counselling process: counselors and helpers
- 2- What are basic counseling skills?
- 3- Helping relationship and helping process

**Unit-II: Counselling skills**

- 1- Starting, structuring and summarizing
- 2- Facilitating problem solving
- 3- Improving clients feedback

**Unit-III: Considerations in counseling**

- 1- Ethical issues and dilemmas
- 2- Multicultural and gender aware helping
- 3- Getting support and being supervised

Ref.:

Richard Nelson-Jones (2012). Basic counseling skills: A helper's manual (3<sup>rd</sup> edition). Sage

## VOCATIONALIZATION OF UNDERGRADUATE COURSES

### S.Y.B.A. FUNCTIONAL ENGLISH

(w.e.f. 2020-21)

(Choice Based Credit System)

(70- Semester End Exam and 30- Internal Evaluation)

Each semester will have 03 credits for teaching. Each Credit is equal to 15 hours. Therefore this course shall have 45 teaching hours. In addition to that there shall be 03 hours allotted to Internal Evaluation. ( $03 \times 15 = 45 + 3 = 48$  Hrs). It is equally applicable to both Papers of Functional English.

#### Course Contents

SYFE

#### Paper III: Advanced Writing Skills and Introduction to Electronic Media

##### Objectives:

- Enhancing students' ability to communicate in written mode
- Training students in extended writing in different formats
- Developing awareness about the need to change language according to situations
- Helping students to recognize the need for referencing
- Acquainting students to career options in electronic media and equipping them to be prepared for the same
- Making students aware of change in language use as per the nature of Media
- Giving students exposure to English language through on the job training
- Introducing students to various aspects of Blog writing
- Initiating students into research through scrape book

#### Semester III

##### Course Contents

**Hours: 48 (45+3 for Internal Evaluation)**

(Figures to the right indicate hours allotted per topic)

<b>I Vocabulary Building and Basic Sentence Structures:</b>	<b>7</b>
Students will learn affixation, homonyms, polysemy, hypernyms, one word substitutes, scrambled words and Basic Sentence Structures.	
<b>II Register and Style:</b>	<b>7</b>
Introduction to the concepts of Register and Style with appropriate examples.	
<b>III Defining and Describing:</b>	<b>9</b>
Distinction between defining and describing from the language point of view.	



Students will define and describe day-to-day things, places, persons, devices, tools etc. (Students will be given home assignments on task related to definitions & descriptions so also, they will paste sample passages/sentences of different style and register and analyze them in their journals )

#### **IV Introduction to Creative Writing**

What is Creative Writing?, Definition, Scope, features and elements of Creative Writing.

Writing descriptions, slogans and tag lines for advertisements of products and services. **10**

#### **V Letter writing**

Lay out of a letter, formal and informal letters and writing preparing resume/CV. **8**

#### **VI Scrape Book 4**

Students may be acquainted with the concept of scrape book, its usefulness and relevance. Students will prepare a scrape book on a topic of their interest.

#### **Pattern of Evaluation**

Internal Evaluation: 30 Marks

1. Mid-Semester Exam: 20 Marks
2. Scrape Book: 10 Marks

#### **Question Paper Pattern ( Semester III ) 70 marks**

- |  |    |
|--|----|
| Q1. Objective questions on vocabulary and sentence structures.   | 14 |
| Q2. A paragraph/sentences to identify register/style.  | 6  |
| Q3. a)Writing a formal letter and Resume/CV.<br>(08 Marks for the letter+4 Marks for Resume/CV)                      | 12 |
| Q3. b) Writing an informal letter.   | 8  |
| Q4. a) Define Any TWO items out of Four  | 8  |
| Q4. b) Describe Any TWO items out of Four  | 8  |
| Q5. Questions on Creative Writing (06 Marks for Aspects of Creative Writing and<br>08 Marks for Practical Questions) | 14 |

## **Semester IV**

### **Course Contents**

**Hours: 48 (45+3 for Internal Evaluation)** (Figures to the right indicate hours allotted per topic)

- I. Writing Reports** **8**  
Nature and structure of reports, Types of reports: visit reports, survey reports and reports on events.
- II. Writing Scripts for Compeering a Programme** **7**  
Writing Scripts for Compeering a programme, functions, festivals etc.
- III. Introduction to Blog Writing** **7**  
Introduction to Blog Writing (Discussions on various blog platforms viz. Wordpress, Blogspot.com/Blogger)  
Types of Blogs: Features of different types of blogs like Travel, Recipe, Hobbies, Vlog- Video Blog, etc.  
**(3 contacts for teaching and 4 for classroom practicals)**
- IV. Introduction to Electronic Media: A) Radio:** **8**
- a. Radio as Mass Media
  - b. Functions and structure of Radio Studio
  - i) Types of Radio programmes
    - a) Educational
    - b) Informative
    - c) Entertainment
    - d) Miscellaneous
- V. Introduction to Electronic Media:**
- B) TV:** **8**
- a. TV as Mass Media
  - b. TV Studio
  - i) Types of TV programmes
    - a) Educational
    - b) Informative
    - c) Entertainment

d) Miscellaneous

**A visit to local/nearby TV channel and radio station should be arranged. Students have to write a report on the visit.**

**VI. Similarities and differences between Radio and TV as Mass Media with special reference to the use of language in both:**

7

**Pattern of Evaluation**

<b>Internal Evaluation</b>	<b>30 marks</b>
<b>Mid-Semester Examination</b>	<b>20 Marks</b>
<b>On the Job Training Report, Visit Report &amp; Journals</b>	<b>10 Marks</b>

**Semester IV**

**Question Paper Pattern ( Semester IV )** **70 marks**

Q 1. Writing reports based on the given data. (any two out of 3)	16
Q 2. a) Writing a Script for a programme (1 out of 2)	10
Q 2. b) Questions on Blog Writing	10
Q 3. Questions on the Unit 4 (Radio) (2 out of 3)	12
Q 4. Questions on the Unit 5 (Television) (2 out of 3)	12
Q 5. Questions on role of radio/TV as Mass media, comparison between the two and other relevant issues (2 out of 3)	10

**Important suggestions**

*It is strongly recommended that the Head of English Dept, Coordinator of Functional English and teachers in consultation with one another prepare an academic calendar planning details of activities, practicals and assignments for students at the beginning of the year for the benefit of both teachers and students. This will be helpful in case of any change in faculty mid-term and for the awareness in students about their internal work.*

**On the Job Training**

Students will complete their on the job training during Semester IV. It has to be for at least 20 clock hours. The students may complete it at any place where they can use English such as ad agencies, newspapers group, primary/secondary schools, colleges etc. The student will be required to submit the completion certificate from the Institution on their letterhead duly signed by the certifying authority mentioning the details regarding English used during the period. The student will have to write a detailed report and submit it along with documentary evidence of the job done.

**Suggestions for Teaching**

- 1) The teacher will prepare a need-based list of words and students will be encouraged to add

to it. The teacher will help students acquire language through language games, quiz, pair/ group activities and creating situations in the classroom so as to enable them to collect and use appropriate words, proverbs, phrasal verbs etc. accordingly. Students will be encouraged to guess meaning in context. Attention should be drawn to appropriateness in word-use.

Students may be encouraged to collect samples of writings from various books and some of the samples may be discussed in the class with reference to above points.

2) Teacher's role should be to enable learning, rather than teaching. Students may be provided samples or encouraged to collect samples of various registers and styles.

3) Teacher will point out the difference between language skills required for defining and describing with the help of samples.

4) Teacher will encourage students to listen to/watch various programmes on radio/TV to observe the role of the anchor to understand use of language skills in these programmes.

### **Books recommended**

- 1) **Modern English** N. Krishnaswamy (Macmillan, India)
- 2) **Strengthen Your English** Bhaskaran and Horsburgh (OUP)
- 3) **The New Oxford Guide to writing** Kane Thomas (OUP)
- 4) **Writing With a Purpose** Tikoo and Sasikumar (OUP)
- 5) **Working With Words** Gairns, R & redman S (CUP)
- 6) **Instant word Power** Norman Lewis (Penguin Random House)
- 7) **Word Power Made Easy** Norman Lewis (Penguin Random House)
- 8) **Words in Action** Martin Steinman (Harcourt Brace Jovanovich, Inc.)
- 9) **Strengthen Your Writing** Narayanswami, V.R. (Orient Blackswan Pvt Ltd)
- 10) **English for the Office** Peter Little (Financial Times Prentice Hall)
- 11) **English Language in Advertising** Pandya Indubala (Ajanta Publications)
- 12) **The art of Broadcasting** S.P.Jain (Intellectual Publishing House)
- 13) **Radio news writing and Editing** Carl Warren (Harper & Brothers)
- 14) **The Techniques of TV Production** G. Millerson (Focal Press)
- 15) **Mass Media Forces in our Society** Voelker, Francis H.; Voelker, Ludmila A.
- 16) **Advertising Made Simple** Jefkins Frank (Elsevier Science)
- 17) **Television and Radio News** Siller, Bob, Ted White (Macmillan)
- 18) **Basic Audio Visual Media** Shipra Kundra (Anmol)
- 19) **News writing & reporting for Today's Media** Itule et al (McGraw-Hill)
- 20) **Cliff's TOEFL** Michael A. Pyle
- 21) **Barron's TOEFL** Pamela J. Sharpe
- 22) **Television: an Introduction** Jonathan Bicknell
- 23) **Script to Screen** Sharda Koushik (Macmillan)
- 24) **Writing With Ease** Usha Pandit ( Mindspring Publishing LLP)  
(Writing Strategies-Creative Writing – Literature- Word Lists)
- 25) **How to Write a Good Advertisement** Victor Schwab (Wilshire Book Company)
  
- 26) **The One-Hour Content Plan** Kothand Meera (Createspace Independent)

## FUNCTIONAL ENGLISH: SYBA

### SYFE Paper IV Oral Communication in English: Intermediate & Key Competency Modules (Practical Paper)

#### Objectives

- Building confidence in communicative English through active participation
- Enabling students to learn through activities
- Introducing students to a wide variety of conversational situations, both formal and informal
- Creating awareness about what to say and when to say it
- Creating awareness about developing voice quality for effective oral communication
- Making students appreciate audio and video programmes
- Making students aware of proper use of body language during interaction or in video media
  
- Leading students to overall development of personality through key competency modules
  
- Acquainting Students with Digital/Online Learning Platforms
- Making students aware about language and etiquettes of Social Media

#### Semester III

##### Course Contents

II. **Hours: 48 (45+3 for Internal Evaluation)** (Figures to the right indicate hours allotted per topic)

##### A: Oral Communication in English

<b>I - Non-verbal Communication: Importance of Body Language</b>	<b>3</b>
<b>II- Conversation in Formal and Informal Situations: Identifying formal/informal situations and using appropriate expressions to make conversation creative.</b>	<b>7</b>
<b>III- Reading out news from the newspaper:</b>	<b>5</b>
<b>IV- Talking in different situations: Formal and informal:</b>	<b>8</b>
<b>V- Compeering/anchoring a programme:</b>	<b>6</b>
<b>VI- Role playing</b>	<b>6</b>
<b>VII- Debating</b>	<b>5</b>

**B: Key competency Modules:** **5**

- I- Logical Thinking, Reasoning, Analytical Ability**
- II- Introduction to various Digital Learning Platforms: Google Classroom, Google Meet, Zoom, YouTube etc.**

## Pattern of Evaluation

<b>Internal Evaluation</b>	<b>30 marks</b>
<b>Mid-Semester Examination (Practical)</b>	<b>20 marks</b>
<b>Class Practicals/Class Activity/ Home Assignment/Class Test based on Digital Learning Platform</b>	<b>10 marks</b>
<b>Question Pattern for Practical Exam (Semester III)</b>	<b>70 marks</b>
Q1 Reading news from the news paper	10
Q2 Talking in a given formal situation (Pair activity)	10
Q3 Talking in a given informal situation (Pair/ group activity)	10
Q4 Role play or anchoring	10
Q5 Debating	10
Q6 Digital Learning Platforms (The Examiner will choose between Oral or Practical Questions as per the availability of Digital Platforms)	10
Non-verbal communication, key competency modules like logical thinking, reasoning, analytical ability to be tested with these platforms.	10

## Semester IV

### Course Contents

III. **Hours: 48 (45+3 for Internal Evaluation)** (Figures to the right indicate hours allotted per topic)

#### **A: Oral Communication in English**

<b>I. Talk on a Particular Topic</b>	<b>6</b>
<b>II. Personal Interview:</b> Preparing for an interview	<b>6</b>
<b>III. Interviewing:</b> Preparations for interviewing others	<b>6</b>
<b>IV. Conducting Panel Discussion</b>	<b>6</b>
<b>V. Preparing and Presenting an Ad of a Product</b>	<b>6</b>
<b>VI. Opening/Closing a Radio/TV Programme</b>	<b>5</b>
<b>VII. Appreciation of a TV/Radio Programme</b> With reference to its type, content, presentation: use of sounds/colours/music/ acting/ voice modulation/ (TV) long shots, close ups and total impact.	<b>5</b>

#### **B: Key Competency Modules:**

<b>I- Abstract Thinking</b>	<b>5</b>
<b>II- Responsible and Conscious Use of Social Media Platforms like Facebook, WhatsApp, etc.</b>	

## Pattern of Evaluation

<b>Internal Evaluation</b>	<b>30 marks</b>
<b>Mid-Semester Examination (Practical)</b>	<b>20 marks</b>
<b>Class Practicals/Class Activity/ Home Assignment/Class Test</b>	<b>10 marks</b>

**Semester IV examination Total marks** **70 marks**

### Question Paper Pattern

Q1 a) Appreciation of an audio programme (The center will keep two audio recordings (of about 15 minutes) ready out of which the external examiner will select one. It will be played twice. The external examiner will set appreciation questions based on the same for the students to give written response. 10

Q1 b) Appreciation of an audio-video programme. The procedure will be the same as above however the responses of the students will be oral. 10

Q2 Talk on Given Topic/ Situation (Individual Activity) 10

Q3 Interviewing (Pair Activity) 10

Q4 A. Preparing and presenting an Ad of a product (Group Activity) (Detailed specifications to be given in the question paper) 7

Q4 B. Panel Discussion (Group Activity) 7

Q5 Opening/Closing a Radio/TV Programme ( Individual Activity) 6

Q6 Interaction/ Personal Interview with the Examiner (Key competency modules also to be tested) 10

### Suggestions for Teaching

1) Careful listening is a prerequisite to effective speaking; hence teacher will provide classroom opportunities for students to listen to/watch variety of programmes and will also encourage them to attend speeches, interviews, group and panel discussions in college and outside.

2) Teacher will point out the importance of non-verbal communication through demonstration and with the help of pictures, cartoons etc.

3) Teacher will prepare a list of topics for talking in formal/informal situations, role-play, debate, panel discussion, conduct them in the class and make other students to observe and comment.

4) Teacher will organize and monitor mock interviews by allotting roles of interviewer and interviewee.

5) Teacher will provide and comment on the sample words, expressions used creatively in different ads pointing out the niceties and nuances of language used so as to enable students to use language creatively for making ads of their own. The teacher will also provide necessary details of



the products to be advertised by students.

- 6) Authentic and reliable web resources and hands on experience to be used for topics related to Digital Learning Platforms and Social Media.

## **Books Recommended**

- 1) **Effective Communication and Public Speaking** Mundal, S.K. (Jaico Publishing House)
- 2) **Speaking Effectively** Jeremy, C, Rogerson P. et al (Cambridge)
- 3) **English Conversation Practice** Grant Taylor (Tata McGraw-Hill Education India)
- 4) **How to Speak without Fear** Natalie Rogers (Ward Lock)
- 5) **Conversation** Nalasco R.S. & Arthur L. (OUP)
- 6) **Advanced Conversational English** Crystal D. & Davy D. (Longman)
- 7) **Keep Talking** Klippel F. (Cambridge University Press)
- 8) **What to Say When** Huggins V.
- 9) **Spoken English** Bernard G
- 10) **English in Situation** O'Neill Robert (OUP)
- 11) **Success with English** Baird A. et al (Penguin Books)
- 12) **Success With English** Penguin Books, Course Book
- 13) **The Etiquette of Social Media** Kim, Leonard Createspace Independent Pub,2014
- 14) **Talk Like TED** Carmine Gallo (Macmillan)
- 15) **The Art of Public Speaking** Dale Carnegie (Prabhat Prakashan)
- 16) **The Definitive Book of Body Language** Allan Pease, Barbara Pease (**Random House**)
- 17) **Talk to Me: How to Ask Better Questions** Dean Nelson (Harper Perennial)
- 18) **How to Prepare for Gd and Interview** Hari Prasad (McGraw Hill )

## Annexure-II

### Structure/ Pattern of Syllabus: S. Y. B. A. (Vocational)

- 1) Title of the Course: **Functional English**
- 2) Introduction: **Pattern Semester**
- 3) Eligibility: **Should have offered Functional English at F.Y.B. A. and passed F.Y.B. A. as per Savitribai Phule Pune University Rules**
- 4) Examination:
  - A) Pattern of examination:
    - i) **70:30** (University Semester examination of 70 marks & Internal assessment of 30 marks). Details as per the syllabus.
    - ii) Pattern of the question paper: **As per the specimen given.**
  - B) Standard of Passing : **As per Savitribai Phule Pune University norms**
  - C) ATKT Rules : **As per Savitribai Phule Pune University norms**
  - D) Award of Class : **As per Savitribai Phule Pune University norms**
  - E) External Students : **As per Savitribai Phule Pune University norms**
  - F) Setting of Question paper/ Pattern of Question paper: **As per university norms**
  - G) Verification of Revaluation: **As per university norms**
- 5) Structure of the Course :
  - i) **Optional**
  - ii) Medium of instruction: **English**
- 6) Equivalence subject/ papers & Transitory Provision: Travel and Tourism:  
**Functional English**
- 7) University terms : **As per Savitribai Phule Pune University Norms**
- 8) Subject wise Detail Syllabus : **Attached**
- 9) Recommended books : **Mentioned in syllabus.**

## S. Y. B. A.

### Compulsory English (Core Course-CC)

#### (Choice Based Credit System-70:30-Pattern)

(w. e. f- 2020-2021)

(03 Credit Course)

#### **Preamble:**

The course aims at contributing to the overall personality development of the students. They have to be good human beings before anything else. This laudable aim involves instilling essential human values like tolerance, understanding, sympathy, respecting the differences, living in harmony with nature, protecting the environment etc. In our prose and poetry selections we have kept these considerations in mind. We offer an adequate mix of British, American, Indian and other writers and poets because we want our students to be responsive to an era of globalization but at the same time they have to be rooted in Indian culture and ethos.

Our students have to develop into responsible citizens of the world. They have to become confident and face the challenges of life successfully. Effective use of language is necessary for success in all walks of life. Hence we have focused on enhancing the linguistic skills of the students by concentrating on essential aspects of grammar and enrichment of vocabulary. Apart from the professional and technical qualifications of the employees, the present day employers generally look for certain soft skills which relate to some positive personality traits, attitudes and social skills. Hence the course includes units on some essential soft skills. The course is thus a value oriented and a skill-based course.

#### **Objectives:**

- a) To expose students to the best examples of literature in English and to contribute to their emotional quotient as well as independent thinking.
  - b) To instill universal human values through best pieces of literature in English
  - c) To develop effective communication skills by developing ability to use right words in the right context.
  - d) To enhance employability of the students by developing their basic soft skills
  - e) To revise and reinforce the learning of some important areas of grammar for better linguistic competence.
- **Each** semester shall have 3 credits for teaching. Each credit is equal to 15 hours, so this course shall have 45 teaching hours. In addition to that there shall be 03 hours allotted to internal evaluation. ( $3 \times 15 = 45 + 3 = 48$ ). It is applicable to all other papers/courses.
  - **Considering** the choice-based credit system (CBCS) and the semester pattern, both Semesters-III & IV will have a uniform evaluation pattern of 100 marks each. There will be an 'Internal Examination' for 30 marks and 'Semester-end Examination' for 70 marks.
  - **The Internal** Examination for 30 marks will be conducted at college level.  
Assignment/group discussion/tutorial/seminar/oral/project for 10 marks  
A Mid-semester Written Test for 20 marks

## **Semester-III**

**Prescribed Text: *Panorama: Values and Skills through Literature* (Board of Editors- Orient BlackSwan)**

### **Unit-I- Prose**

1. A Simple Philosophy- **Seathl**
2. The Homecoming- **Rabindranath Tagore**
3. The Verger- **Somerset Maugham**

### **Unit-II- Poetry**

1. The Palanquin Bearers- **Sarojini Naidu**
2. On the Grasshopper and the Cricket- **John Keats**
3. Pied Beauty- **George Manley Hopkins**

### **Unit-III- Grammar**

1. The Passive Voice
2. Direct and Indirect Speech
3. Negative Sentences

### **Unit-IV- Vocabulary**

1. One-word substitutes
2. Idioms
3. Suffixes and prefixes

### **Unit-V- Soft Skills**

1. Leadership skills
2. Teamwork skills

## **Semester-IV**

**Prescribed Text: *Panorama: Values and Skills through Literature* (Board of Editors- Orient BlackSwan)**

### **Unit-I- Prose**

1. The Chicago Speech- **Swami Vivekananda**
2. The Lottery Ticket- **Anton Chekhov**
3. The Open Window- **Saki (H. H. Munro)**

### **Unit-II- Poetry**

1. On Another's Sorrow- **William Blake**
2. Laugh and Be Merry- **John Masefield**
3. The Rock and the Bubble- **Louisa May Alcott**

### **Unit-III- Grammar**

1. Question tags
2. Simple, Compound and Complex sentences
3. Degrees of Comparison

### **Unit-IV- Vocabulary**

1. Collocations: Words that go together
2. Phrasal Verbs
3. Commonly Confused Words

### **Unit-V- Soft Skills**

1. Problem-solving skills
2. Time management

## **Question paper Patterns**

### **SEMESTER-III** **(Semester-End Exam)**

**Time: Three Hours**

**Marks: 70**

- Q. 1) A.** Answer the following questions in one or two sentences each (6 out of 9) **Marks 06**  
**B.** Attempt the following: (Any 2 out of 3 questions) **Marks 14**  
(Questions on **Unit-I- Prose**)
- Q. 2) A.** Answer the following questions in one or two sentences each (6 out of 9) **Marks 06**  
**B.** Attempt the following: (Any 2 out of 3 questions) **Marks 14**  
(Questions on **Unit-II-Poetry**)
- Q. 3)** Objective questions on **Grammar** as under: **Marks 10**  
a) Change the following into passive voice (4 out of 6)  
b) Change the following into indirect speech (3 out of 5)  
c) Change the following into negative sentence (3 out of 5)
- Q.4)** Objective questions on **Vocabulary** as under: **Marks 10**  
a) Give one-word substitute for the following (4 out of 6)  
b) Match the following pairs of idioms and their meanings (3 out of 5)  
c) Give examples of the words with following suffixes/prefixes (3 out of 5)
- Q.5)** Answer the following questions in brief (2 out of 3) **Marks 10**  
(Questions on **Unit-V- Soft Skills**)

**SEMESTER-IV**  
**(Semester-End Exam)**

**Time: Three Hours**

**Marks: 70**

- Q. 1) A.** Answer the following questions in one/two sentences each (6 out of 9) **Marks 06**  
**B.** Attempt the following: (Any 2 out of 3 questions) **Marks 14**  
(Questions on **Unit-I-Prose**)
- Q. 2) A.** Answer the following questions in one/two sentences each (6 out of 9) **Marks 06**  
**B.** Attempt the following: (Any 2 out of 3 questions) **Marks 14**  
(Questions on **Unit-II- Poetry**)
- Q. 3)** Objective questions on **Grammar** as under: **Marks 10**  
a) Add question tags to the following. (4 out of 6)  
b) Identify the type of the sentence (simple/compound/complex) (3 out of 5)  
c) Change into comparative/superlative degree (3 out of 5)
- Q.4)** Objective questions on **Vocabulary** as under: **Marks 10**  
a) Specify whether the underlined collocation is right or wrong. (4 out of 6)  
b) Fill in the blanks with correct phrasal verbs chosen from those given in the brackets (3 out of 5)  
c) Complete the sentences with an appropriate word chosen from those in the brackets (3 out of 5)
- Q.5)** Answer he following questions in brief (2out of 3) **Marks 10**  
(Questions on **Unit-V- Soft Skills**)

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## S. Y. B. A.

### Skill Enhancement Course-SEC-1A

(Old General English-G-2)

**(Choice Based Credit System-70:30-Pattern)**

**(w. e. f- 2020-2021)**

**(03 Credit Course)**

**Title of the Paper: Advanced Study of English Language**

**Prescribed Text: *Linguistics: An Introduction-* (Ed. Board of Editors, Orient BlackSwan)**

#### **Preamble:**

Language is basically a skill-based subject. The present course is a skill enhancement course. Effective use of language involves multiple skills, namely listening, speaking, reading and writing. In order to acquire these skills and become efficient users of language our students need to be conversant with different aspects of language. Thus the students need to know phonological aspects of language like correct pronunciation, stress, tone groups, intonation patterns etc. The basics of morphology acquaint students with the structure of words and word formation processes. Morphology combined with lexical semantics contributes to the enrichment of vocabulary and helps the students to use right words in a right place in their communication. English in India is a second language and in a second language learning situation, developing insight into the process of sentence formation is very important. Syntax part of the course takes care of this crucial aspect in the development of language skills.

Mere correctness of language is not enough. We have to use language appropriately in a given context. Grounding in pragmatics contributes to the language skills of students by helping them produce contextually appropriate utterances. The sociolinguistics part of the course focuses on language variation because language is not a monolithic phenomenon. Awareness of diversity in language use can make the learner a better user of language. The course thus enhances the linguistic and communicative skills of the students.

#### **Objectives of the Course:**

- a) To familiarize students with the various components of language.
- b) To develop overall linguistic competence of the students.
- c) To introduce students to some advanced areas of language study.
- d) To prepare students to go for detailed study and understanding of language.

### Semester-III

#### Course Content-

1. Phonetics and Phonology part from- **Linguistics: An Introduction**
2. Morphology part from- **Linguistics: An Introduction**



### 3. Sociolinguistics part from- **Linguistics: An Introduction**

(Following topics from **chapter – 1, 2, 3 and 4 of the prescribed book**)

#### **1. Phonology:**

**15 Clock Hours**

1. Organs of speech, speech mechanisms,
2. Description and classification of consonants and vowels,
3. Concept of syllable,
4. Word accent, sentence accent,
5. Tone groups, placement of nuclear/tonic accent,
6. Concept of intonation, uses/types of tones

#### **2. Morphology:**

**15 Clock Hours**

1. What is morphology?
2. Concept of morpheme, allomorph, zero allomorph, types of morphemes (free and - bound), Prefixes and Suffixes (class-changing and class-maintaining),
3. Inflectional and Derivational suffixes, borrowings

#### **3. Sociolinguistics:**

**15 Clock Hours**

1. National varieties of English: British, American and Indian
2. Regional and social dialects, standard dialect, concept of register, formal and informal styles
3. Pidgins and Creoles, code-switching and code mixing

## **Semester-IV**

**Prescribed Text: *Linguistics: An Introduction-* (Ed. Board of Editors, Orient BlackSwan**

#### **Course Content-**

1. Syntax part from- **Linguistics: An Introduction**
2. Semantics part from- **Linguistics: An Introduction**
3. Pragmatics part from- **Linguistics: An Introduction**

(Following topics from **chapter – 5, 6 and 7 of the prescribed book**)

#### **1. Syntax:**

**15 Clock Hours**

1. Concept of Phrase, Phrase structure rules/ types of Phrases: Noun phrase, Adjective phrase, Adverb phrase, Prepositional phrase and Verb phrase.
2. Concept of Clause, Parts of Clauses: Subjects and objects, complements and Adverbials, Concept of Subject –verb Concord, Clause patterns.
3. Types of Sentences: Structural Classification - Simple Sentence, Compound Sentence and Complex sentence
4. Types of Sentences: Functional Classification - (affirmatives/interrogatives/imperatives) Wh –questions, Yes-No Questions, Tag

Questions, Negative Sentences, Do-support, Imperatives

**2. Semantics:** (Introductory)

**15 Clock Hours**

1. What is Semantics? Difference between Denotative and Connotative meaning.
2. Lexical relations: Synonymy, Antonymy, Homonymy, Homography and Homophony, Polysemy, Difference between Homonymy and Polysemy, Superordinate terms and Hyponymy, Metonymy.

**3. Pragmatics:** (Introductory)

**15 Clock Hours**

1. What is Pragmatics?
2. Speech Acts: Types
  - a. Austin's typology - locutionary, illocutionary, perlocutionary.
  - b. Searle's typology – the six types
  - c. Direct and Indirect Speech Acts
3. The Co-operative Principle and Its Maxims
4. The Politeness Principle and Its Maxims

- As indicated in the CBCS (Choice Based Credit System) Restructured Programme of Savitribai Phule Pune University at undergraduate level to be introduced from the academic year 2019-20, this subject SEC (old-G-2-General English), like other subjects under B.A. Degree Course, shall have 70 +30 pattern. There will be written examination of 70 marks of 3 hrs duration for this subject at the end of each semester. The class work (internal evaluation) shall carry 30 marks. Each semester shall have 3 credits for teaching. Each credit is equal to 15 hours so this course shall have 45 teaching hours. In addition to that there shall be 03 hours allotted to internal evaluation.

**Reference Books:**

1. Study of Language: An Introduction – George Yule, (CUP, 1985)
2. English Grammar for Today: A New Introduction – Margaret Deuchar, Geoffrey Leech, Robert Hoogenraad (Palgrave Macmillan, 1982)
3. Semantics – F.R. Palmer (CUP, 1981)
4. Pragmatics - George Yule, (OUP, 2000)
5. Modern Linguistics: An Introduction - Verma and Krishnaswamy (OUP, 1989)
6. Pragmatics and Discourse: A Resource Book for Students - Joan Cutting, (Routledge, 2002)
7. Structure and Meaning in English – Graeme Kennedy (Pearson, 2011)
8. Making Sense of English: A Textbook of Sounds, Words and Grammar – M.A. Yadugiri (New Delhi: Viva Books Pvt. Ltd., 2006)

**Question Paper Patterns**  
**(Semester-III)**  
**(Sem-End Exam)**  
**(w.e.f- 2020-21)**

**Time: Three Hours**

**Total Marks: 70**

- |   |                 |
|---|-----------------|
| Q. 1) Attempt any three out of five questions-<br>(Short notes on <b>Phonology part</b> )   | <b>15 Marks</b> |
| Q. 2) Attempt following questions-<br>(Practical/Objective questions on <b>Phonology part</b> )<br>A) Transcribe the words (Five out of Seven) - 10 marks<br>B) Do as directed (Five out of Seven) - 05 Marks | <b>15 Marks</b> |
| Q. 3) Attempt any four out of six questions-<br>(Questions on <b>Morphology</b> )   | <b>20 Marks</b> |
| Q. 4) Attempt any four out of six questions-<br>(Questions on <b>Sociolinguistics</b> )   | <b>20 Marks</b> |

**Question Paper Patterns**  
**(Semester-IV)**  
**(Sem-End Exam)**  
**(w.e.f- 2020-21)**

**Time: Three Hours**

**Total Marks: 70**

- |   |                 |
|---|-----------------|
| Q. 1) Attempt any three out of five questions-<br>(Questions on <b>Syntax</b> )                 | <b>15 Marks</b> |
| Q. 2) Attempt any three out of five questions-<br>(Questions on <b>Syntax &amp; Semantics</b> ) | <b>15 Marks</b> |
| Q. 3) Attempt any three out of five questions-<br>(Questions on <b>Semantics</b> )              | <b>20 Marks</b> |
| Q. 4) Attempt any four out of six questions-<br>(Questions on <b>Pragmatics</b> )               | <b>20 Marks</b> |

**Internal Evaluation-Total-30 Marks**  
**(Applicable to both Semesters III & IV)**

1. Written Test - **20 Marks**
2. Project/Group Discussion/ Tutorial/ Home Assignment/ Seminar/ Participation in a Classroom Activity- **10 Marks**

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## S. Y. B. A.

### Discipline Specific Course (DSC-1A)

(Old Special Paper-I)

(Choice Based Credit System-70:30-Pattern)

(w. e. f- 2020-2021)

(03 Credit Course)

#### Title of the Paper: Appreciating Drama

##### **Preamble:**

Drama is an age-old form of literature. Moreover, it is a performing art form. It has been undergoing several transformations in its form and performance till date. In this sense, the world of drama has been exploring and exposing very many distinguishing theoretical, literary and theatrical dimensions. At the backdrop of the very dynamics of drama, the syllabus prescribed under this paper attempts to give justice to the multi-dimensional aspects of drama. The course contents and the evaluation patterns are radically designed to keep pace with the age of technology and to empower the learners for futuristic academic avenues.

##### **Objectives:**

1. To introduce Drama as a major form of literature
2. To introduce minor forms of Drama
3. To acquaint and enlighten students regarding the literary and the performing dimensions of drama
4. To acquaint and familiarize the students with the elements and the types of Drama
5. To encourage students to make a detailed study of a few sample masterpieces of English Drama from different parts of the world
6. To develop interest among the students to appreciate and analyze drama independently
7. To enhance students' awareness regarding aesthetics of Drama and to empower them to evaluate drama independently

### Semester-III

#### **Course contents-**

##### UNIT-I

##### Theory of Drama:

1. Drama, the Literary Form
2. Drama, the Performing Art Form
3. Elements of Drama:
  - i) Literary Elements: (Theme, Plot, Characters, Diction, Conflict, Setting etc.)
  - ii) Theatrical Elements: (Stage directions, Light effects, Music, Costumes, Stage

- property, Makeup etc.)
4. Types of Drama: (Tragedy, Comedy, Tragicomedy, Problem play, Absurd drama)
  5. An Introduction to Minor Forms of Drama: (e.g. One-act-play, Skit, Street play, a short Radio play, Pantomime etc.)

## **UNIT-II**

**A Midsummer Night's Dream** by William Shakespeare

## **Semester-IV**

### **Title of the Paper: Appreciating Drama**

#### **UNIT-I**

**Arms and the Man** by George Bernard Shaw

#### **UNIT-II**

**The Fire and the Rain** by Girish Karnad

#### **Select Bibliography:**

1. Abrams M.H. 1957. A Glossary of Literary Terms. Madras: Macmillan India Press.
2. Anandlal. 2004. Ed. The Oxford Companion to Indian Theatre. New Delhi: Oxford University Press.
3. Berthold M. 1999. The History of World Theatre. New York: Continuum.
4. Briggs J. & Jefferson N.C. 2003. Encyclopedia of Stage Lighting. : McFarland
5. Brown J.R. 1972. Theatre Language. London: The Penguin Press.
6. Craig E.G. 1911. On the Art of the Theatre. London: William Heinemann Ltd.
7. Crook T. 1999. Radio Drama. Routledge; 1st Edition
8. Dharwadkar A. 2005. Theatres of Independence. New Delhi: Oxford University Press
9. Hughes M. 2013. A History of Pantomime. Remember When
10. Jagdale U.S. 2014. Communication in Drama: A Pragmatic Approach. PartridgeIndia.
11. Mamet D. 1994. Goldberg Street: Short Plays and Monologues. Grove Press

12. Pease A. 1998. Body Language. London: Sheldon Press.
13. Srampickal J. 1994. Voice to the Voiceless: the Power of People's Theatre in India. London: Hurst & Company.
14. Stanislavski C. 1981. Creating a Role. London: Methuen Publishing Ltd.
15. Zuber O. 1980. Ed. The Languages of Theatre. Oxford: Pergamon Press

### **EVALUATION PATTERN**

Considering the choice-based credit system (CBCS) and the semester pattern, both Semester-3 and Semester-4 will have a uniform evaluation pattern of 100 marks each. There will be an 'Internal Examination' for 30 marks followed by a 'Semester-end Examination' for 70 marks.

The Internal Examination for 30 marks will be conducted in two parts.

#### **1) Practical Examination for 10 marks:**

The practical examination aims at testing practical applications of the course contents. Hence, the evaluation pattern has to be a practical one. The following choice-based modes of evaluation can be considered in this concern.

**(Modes of evaluation:** Dramatic performances, Group discussions, Seminars, Project presentations, Library work, Oral examination etc.)

**In Semester-III**, the practical examination aims at testing practical applications of Unit-I: 'Theory of Drama' on the basis of the above-mentioned choices of evaluation modes.

**In Semester-IV**, the practical examination aims at testing practical applications of Unit-I: **Arms and the Man** on the basis of the above-mentioned choices of evaluation modes.

#### **2) A Mid-semester Written Test for 20 marks:**

Being a written test, it aims at testing the theoretical subject knowledge of the students, on the basis of the semester-wise syllabus given below.

**For Semester-III** the syllabus for the test will be **Unit-I: 'Theory of Drama'**.

**For Semester-IV** the syllabus for the test will be **Unit-I: Arms and the Man**.

### **SEMESTER-III**

#### **SEMESTER-END EXAMINATION**

##### **Question Paper Pattern**

**Marks: 70**

**Time: 3 Clock Hours**

**Instructions:**

**1. All questions are compulsory.**                      **2. Figures to the right indicate full marks.**

- Q.1) Short-answer questions on the play A Midsummer Night's Dream  
(3 out of 5) (15)
- Q.2) Short-answer questions on the play A Midsummer Night's Dream  
(3 out of 5) (15)
- Q.3) Long-answer questions on the play A Midsummer Night's Dream  
(1 out of 2) (10)
- Q.4) Long-answer question on the play A Midsummer Night's Dream  
(1 out of 2) (10)
- Q.5) Short-answer questions on the theory topics 'Types of Drama' and 'An Introduction to  
Minor Forms of Drama'  
(4 out of 6) (20)

**SEMESTER-IV**

**SEMESTER-END EXAMINATION**

**Question Paper Pattern**

**Marks: 70**

**Time: 3 Clock Hours**

**Instructions:**

1. All questions are compulsory.                      2. Figures to the right indicate full marks.

- Q.1) Short-answer questions on the play The Fire and the Rain  
(3 out of 5) (15)
- Q.2) Short-answer questions on the play The Fire and the Rain  
(3 out of 5) (15)
- Q.3) Long-answer questions on the play Arms and the Man  
(1 out of 2) (10)
- Q.4) Long-answer questions on the play Arms and the Man  
(1 out of 2) (10)
- Q.5) Short-answer questions on The Fire and the Rain  
(4 out of 6) (20)

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## **S. Y. B. A.**

### **Discipline Specific Course (DSC-2A)**

**(Old Special Paper-II)**

**(Choice Based Credit System-70:30-Pattern)**

**(w. e. f- 2020-2021)**

**(03 Credit Course)**

### **Title of the Paper: Appreciating Poetry**

#### **Rationale:**

Poetry has been the oldest form of literature and continues to be an important part of art and culture. It conveys a thought, describes a scene, or narrates a story in a concentrated, lyrical arrangement of words. It can be structured with rhyming lines and meter or can also be freeform that follows no formal structure. Poetry on the level of content offers a huge variety of aesthetic and worldly experiences. It offers new perspectives to look at the usual matters. The present course is designed in line with such liberating and enriching nature of poetry. This is an introductory course and it is intended that students learn the basics of poetry through its theory and the practical application of some of the terms related to poetry. Given its elementary nature this course cannot afford to be ambitious in its scope and selection of poems. Poems are not necessarily selected from different nationalities and cultures and no specific theme is maintained in the selection of poems. However it is seen in the selection that students get exposed to a variety of experiences through poems of different mold and that their aesthetic and human sensibilities get enriched.

#### **Objectives:**

1. To acquaint students with the terminology in poetry criticism (i.e. the terms used in appreciation and critical analysis of poems)
2. To encourage students to make a detailed study of a few sample masterpieces of English poetry
3. To enhance students awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate poetry independently

### **Semester-III**

#### **Course Content-**

**Prescribed Text: *Mirage: An Anthology of English Poetry* Ed. Board of Editors, Orient Blackswan**

#### **A) Theory of Poetry**



- (a) What is poetry? Significant development in the art of poetry during major periods
- (b) Elements of poetry: Rhythm, Meter, Sound Structure, Stanza Forms,
- (c) Figures of Speech, Symbols, Imagery, Simile, Metaphor, Personification and other Poetic Devices like Repetition and Contrast.
- (d) Types of Poetry: Elegy, Sonnet, Dramatic Monologue, Lyric, Ode, Ballad

### **B) Poems:**

1. The Nightingale- **Philip Sidney**
2. Sonnet 3- **William Shakespeare**
3. The Sun Rising- **John Donne**
4. London- **William Blake**
5. Ode on a Grecian Urn- **John Keats**
6. To a Skylark- **P. B. Shelley**

## **Semester-IV**

**Prescribed Text: *Mirage: An Anthology of English Poetry* Ed. Board of Editors, Orient Blackswan**

### **Poems:**

1. My Last Duchess- **Robert Browning**
2. Sailing to Byzantium- **W. B. Yeats**
3. Futility- **Wilfred Owen**
4. A Bird Came Down the Walk- **Emily Dickinson**
5. Talking in Their Sleep- **Edith M. Thomas**
6. What Is Life- **John Clare**
7. Sympathy- **Paul Laurence Dunbar**
8. The Awakening- **James Weldon Johnson**
9. The Wind- **Amy Lowell**
10. Freedom- **Rabindranath Tagore**
11. Caged Bird- **Maya Angelou**
12. Failure of Communication- **Judith Wright**

### **Select Bibliography:**

1. Abrams M.H. 1957. *A Glossary of Literary Terms*. Madras: Macmillan India Press.
2. Drew Elizabeth. 1959. *Poetry- A Modern Guide to Its Understanding and Enjoyment*. Dell Publishing Co.
3. Lennard John. 2005. *The Poetry Handbook: A Guide to Reading Poetry for Pleasure and Practical Criticism*. OUP.
4. Moon Brian. 2001. *Studying Poetry: Activities, Resources and Texts*. NCTE.
5. Oliver Mary. 1994. *A Poetry Handbook*. Harcourt Brace & Company.
6. Williams Rhian. 2009. *The Poetry Tool Kit: The Essential Guide to Studying Poetry*. Bloomsbury
7. Wolosky Shira. 2001. *The Art of Poetry: How to Read Poem*. OUP.

## EVALUATION PATTERNS

As indicated in the CBCS (Choice Based Credit System) Restructured Programme of Savitribai Phule Pune University at undergraduate level, this course shall have 70+30 pattern. There will be a written examination of 70 marks of 3 hours duration for this course at the end of each semester. The class work (internal evaluation) shall carry 30 marks. Each semester shall have 3 credits for teaching. Each credit is equal to 15 hours so this course shall have 45 teaching hours. In addition to that there shall be three hours allotted to internal evaluation.

**The Internal Evaluation for 30 marks shall be conducted in two parts-**

### **1) Practical Examination for 10 marks:**

The practical examination aims at testing practical application of the course contents. Hence, the evaluation pattern has to be a practical one. The following choice-based modes of evaluation may be considered-

**Modes of evaluation:** Recitation of Poems, Group discussions, Seminars, Project Presentations, Library Work, Oral Examination, etc.

### **2) Written Test for 20 marks**

## SEMESTER-III

### SEMESTER-END EXAMINATION

(Question Paper Pattern)

**Time: Three Hours**

**Total Marks:-70**

- |   |      |
|---|------|
| Q 1- Questions on the theory of poetry (5 out of 7)<br>(Elements of Poetry, Types of Poetry)                      | [10] |
| Q 2- Practical questions on the application of theory to the poems prescribed (5 out of 7)<br>(Figures of Speech) | [10] |
| Q 3-Theme-based questions on the poems prescribed (2 out of 3)  | [20] |
| Q 4- Theme-based questions on the poems prescribed (2 out of 3)   | [20] |
| Q 5- Reference to context (2 out of 4)  | [10] |

## SEMESTER-IV

### SEMESTER-END EXAMINATION

(Question Paper Pattern)

**Time: Three Hours**

**Total Marks: 70**

- |  |      |
|--|------|
| Q-1- Theme-based questions on the poems prescribed (3out of 5)<br>(Questions on Poems 1, 2, 3)   | [15] |
| Q. 2- Theme-based questions on the poems prescribed (3 out of 5)<br>(Questions on Poems 4, 5, 6) | [15] |

- Q 3- Theme-based questions on the poems prescribed (3 out of 5) [15]  
(Questions on Poems 7, 8, 9)
- Q 4- Theme-based questions on the poems prescribed (3 out of 5) [15]  
(Questions on Poems 10, 11, 12)
- Q 5- Reference to context- poems prescribed (2 out of 4) [10]

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(S.Y.B.A)

**Skill Enhancement Course-(SEC-2A)**  
**(w.e.f-2020- 2021)**

**“A Certificate Course in Skill Development”**

**[Two Credit Course (2x15=30 Hours)]**

**Objectives:**

1. Enhancing the skill of using English for everyday communication
2. To acquaint the students with the verbal and nonverbal communication
3. To create opportunities to access exposure of speaking in various contexts
4. To acquaint and familiarize the students with soft skills
5. To develop interest among the students to interact in English

**Suggestions to Teachers:**

1. It is a learner-centric course.
2. The course aims at developing skill among the students.
3. Learning can be facilitated through interactive and informal guiding sessions.
4. Participation and up-gradation of the students' performance needs to be encouraged.
5. Practicals, Exercises, Activity monitoring, Projects, Seminars, Presentations, Group Discussions are some of the activities that the teachers are expected to encourage.
6. Relevant and innovative ideas of both the students and the teachers are always appreciable for a successful completion of this course
7. The concerned faculty/teachers have to maintain the record of the students (Given in the Evaluation pattern) as the credits to the students need to be given on the basis of preserved record.

**SEMESTER-III**

**Course content:**

- A) Introducing Yourself and Others
- B) Joining and Leaving Conversation
- C) Accepting/Declining Invitations
- D) Asking/Giving/Refusing Permission
- E) Digital Literacy
- F) Project Management

**SEMESTER-IV**

**Course content:**

- A) Asking/Giving/Refusing Information

- B) Agreeing/Partial Agreeing/Disagreeing
  - C) Complaining
  - D) Apologizing
  - E) Vocabulary Building
  - F) Delivering a Speech
- .....

### **EVALUATION PATTERN**

At the end of both the semesters, an activity-based evaluation of the skill development is to be conducted using ANY ONE of the following evaluation modes.

1. Submission of a Project
2. Seminar
3. Group Discussion
4. Mock Interviews
5. Presentations
6. Any other mode of evaluation relevant to the course contents

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## सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

मराठी विषयाचा पुनर्रचित अभ्यासक्रम - जून २०२१ पासून

तृतीय वर्ष कला (T.Y.B.A.) मराठी

निवड आधारित श्रेयांक पद्धत

Choice Based Credit System [CBCS]

सत्र	विषयाचे नाव	संकेतांक	पूर्वीचे नाव
पहिले	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन	[CC – 1 E (3)]	नियमित अभ्यासक्रम G3
दुसरे	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कविता	[CC – 1 F (3)]	
पहिले	व्यावहारिक व उपयोजित मराठी : भाग ५	[CC – 1 E (3)]	पर्यायी अभ्यासक्रम G3
दुसरे	व्यावहारिक व उपयोजित मराठी : भाग ६	[CC – 1 F (3)]	
पहिले	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स. १६००	[DSE 1 C (3+1)]	S3
दुसरे	मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : इ.स. १६०१ ते इ.स. १८१७	[DSE 1 D (3+1)]	
पहिले	वर्णनात्मक भाषाविज्ञान : भाग १	[DSE 2 C (3)+1]	S4
दुसरे	वर्णनात्मक भाषाविज्ञान : भाग २	[DSE 2 D (3)+1]	
पहिले	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग १	[SEC 2 C (2)]	DSE विषयांशी निगडीत अनिवार्य
दुसरे	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग २	[SEC 2 D (2)]	

## तृतीय वर्ष कला (T. Y. B. A.)

नियमित अभ्यासक्रम

पहिले सत्र

विषयाचे नाव

भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन [CC – 1 E (3)]

अभ्यासक्रमाची उद्दिष्टे :

- मुद्रित माध्यमांसाठी लेखन कौशल्ये आत्मसात करणे.
- प्रवासवर्णन या साहित्यप्रकाराचे स्वरूप, प्रेरणा, प्रयोजने, वैशिष्ट्ये आणि वाटचाल समजून घेणे.
- नेमलेल्या प्रवासवर्णनाचे आकलन, आस्वाद आणि विश्लेषण करणे.

घटक		तपशील	श्रेयांक	तासिका
१	अ	मुद्रित माध्यमांसाठी लेखन कौशल्ये : १ वृत्तलेख : स्वरूप व वैशिष्ट्ये २ अग्रलेख : स्वरूप व वैशिष्ट्ये ३ सदर लेखन : स्वरूप व वैशिष्ट्ये ४ परीक्षण : स्वरूप व वैशिष्ट्ये	१	१५
	ब	प्रवासवर्णन साहित्यप्रकार : स्वरूप, प्रेरणा, प्रयोजने, वाटचाल आणि वैशिष्ट्ये		
२		अभ्यासपुस्तक तीन मुलांचे चार दिवस आदर्श पाटील, विकास वाळके, श्रीकृष्ण शेळके साधना प्रकाशन, पुणे	२	३०

संदर्भ ग्रंथ :

- साहित्य अध्यापन आणि प्रकार, संपादक श्री. पु. भागवत आणि इतर
- मराठी प्रवासवर्णनांची वाटचाल, डॉ. नीला पांढरे
- मराठी वाङ्मय इतिहास, खंड ४, महाराष्ट्र साहित्य परिषद, पुणे
- मराठी वाङ्मय इतिहास, खंड ७, भाग १, महाराष्ट्र साहित्य परिषद, पुणे
- आधुनिक मराठी वाङ्मयाचा इतिहास, खंड १ आणि २, अ. ना. देशपांडे
- प्रवासवर्णन एक वाङ्मयप्रकार, वसंत सावंत
- प्रदक्षिणा खंड २, वि. ह. कुलकर्णी
- अग्रलेख, गोविंद तळवलकर, प्रेस्टीज प्रकाशन, पुणे.
- मुद्रित माध्यमांसाठी लेखन कौशल्ये : पुस्तक पहिले व दुसरे, य. च. म. मु. वि. नाशिक
- आधुनिक मराठी वाङ्मय : स्वरूप, आकलन आणि आस्वाद, सांगळे संदीप
- <https://shabdakosh.marathi.gov.in/ananya-glossary>
- <https://shabdakosh.marathi.gov.in/>

दुसरे सत्र  
विषयाचे नाव

भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कविता [CC – 1 F (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. मराठी साहित्य, भाषिक कौशल्यविकास आणि शासनव्यवहार यांची माहिती घेणे.
२. कविता या साहित्यप्रकाराचे स्वरूप, वाटचाल, प्रेरणा, प्रवृत्ती आणि वैशिष्ट्ये, समजून घेणे.
३. नेमलेल्या अभ्यासपुस्तकातील निवडक कवितांचे आकलन, आस्वाद आणि विश्लेषण करणे.
४. कविता या साहित्यप्रकारातील विविध आविष्कार व भाषा रूपांची अभ्यासपुस्तकातील कवितांच्या आधारे ओळख करून घेणे.

घटक		तपशील	श्रेयांक	तासिका
१	अ	मराठी साहित्य, भाषिक कौशल्यविकास आणि शासनव्यवहार १ राज्यघटनेतील भाषाविषयक तरतुदी २ मराठी राजभाषा अधिनियम ३ मराठीविषयक कार्य करणाऱ्या शासकीय संस्थांचा परिचय	१	१५
	ब	कविता : स्वरूप, वाटचाल, प्रेरणा आणि वैशिष्ट्ये		
२		संपादित अभ्यासपुस्तक रूप : कवितेचे संस्कृती प्रकाशन, पुणे	२	३०

संदर्भ ग्रंथ :

१. साहित्य अध्यापन आणि प्रकार, संपादक श्री. पु. भागवत आणि इतर
२. कवितेचा रूपशोध, म.सु. पाटील, शब्दालय प्रकाशन, पुणे.
३. कविता आणि प्रतिमा, सुधीर रसाळ, मौज प्रकाशन, मुंबई.
४. परंपरा आणि नवता, गो.वि.करंदीकर, पॉप्युलर प्रकाशन, मुंबई.
५. सुहृदगाथा, प्रस्तावना, गंगाधर पाटील
६. विद्रोही कविता, संपादक, केशव मेश्राम, कॉन्टिनेन्टल प्रकाशन, पुणे.
७. निळी पहाट, रा.ग.जाधव
८. साहित्य आणि अस्तित्वभान, दि.पु.चित्रे, शब्दालय प्रकाशन, श्रीरामपूर.
९. टीकास्वयंवर, भालचंद्र नेमाडे, साकेत प्रकाशन, औरंगाबाद.
१०. दलित कविता व दलित साहित्याचे सौंदर्यशास्त्र, म.सु.पाटील, पद्मगंधा प्रकाशन, पुणे
११. काव्यार्थ चिंतन, जी.एस.शिवरुद्रप्पा, साहित्य अकादमी
१२. कवितेचा शोध, वसंत पाटणकर, मौज प्रकाशन, मुंबई
१३. सौंदर्य आणि साहित्य, बा.सी.मर्ढेकर
१४. वाङ्मयप्रकार संकल्पना व स्वरूप, संपादक, आनंद वास्कर



१५. कविता संदर्भ आणि दृष्टिकोन, आशुतोष पाटील, अक्षर वाङ्मय प्रकाशन, पुणे
१६. कामगार कवितेतील सामाजिक जाणिवा, डॉ.दिलीप पवार,सुगावा प्रकाशन, पुणे
१७. मराठी वाङ्मयाची वाटचाल: स्वरूप व संकल्पना, शब्दालय प्रकाशन, श्रीरामपूर.
१८. कवितेचं अंतःस्वर, देवानंद सोनटक्के
१९. नव जग, नवी कविता, विश्राम गुप्ते ,संस्कृती प्रकाशन, पुणे
२०. <https://shabdakosh.marathi.gov.in/ananya-glossary>
२१. <https://shabdakosh.marathi.gov.in/>
२२. <https://director.marathi.gov.in/>
२३. <https://sahitya.marathi.gov.in/>
२४. <https://rmvs.marathi.gov.in/>
२५. <https://vishwakosh.marathi.gov.in/>
२६. <http://sahitya-akademi.gov.in/>

### प्रश्नपत्रिकेचे स्वरूप

- भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : प्रवासवर्णन [CC – 1 E (3)] (सत्र १)
- भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कविता [CC – 1 F (3)] (सत्र २)

विद्यापीठ सत्र परीक्षा		
वेळ : ३ तास	घटकनिहाय प्रश्न तपशील	गुण : ७०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	५ पैकी ३ प्रश्नांची उत्तरे प्रत्येकी ५० शब्दांपर्यंत लिहा. (घटक १ व २)	१५
प्रश्न २ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक १)	२०
प्रश्न ३ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक २)	२०
प्रश्न ४ था	२ पैकी १ प्रश्नाचे उत्तर ३०० शब्दांपर्यंत लिहा. (घटक २)	१५
सत्र परीक्षा एकूण गुण		७०
<b>अंतर्गत मूल्यमापन</b>		
(घटक १)		१०
अभ्यासेतर-अभ्यासपूरक उपक्रम : महाविद्यालयातील विविध उपक्रमातील सहभाग / साहित्यविषयक विशेष योगदान / अभ्याससहल / क्षेत्रभेट / अहवाल लेखन / प्रकल्प कार्य / सादरीकरण / स्वाध्याय / चर्चासत्र / गटचर्चा /अभिवाचन (यापैकी कोणतेही एक)		
चाचणी (घटक २)		२०
<b>सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण</b>		<b>१००</b>
<b>विशेष सूचना :</b>		
<ul style="list-style-type: none"> <li>● अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>● विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>● विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		

तृतीय वर्ष कला (T. Y. B. A.)

नियमित अभ्यासक्रम

पहिले सत्र

विषयाचे नाव

व्यावहारिक व उपयोजित मराठी - भाग ५ [CC – 1 E (3)]

अभ्यासक्रमाची उद्दिष्टे :

- १ संभाषणविषयक भाषिक कौशल्ये आत्मसात करणे.
- २ वृत्तपत्रविषयक भाषिक कौशल्ये आत्मसात करणे.
- ३ मराठी साहित्य, भाषिक कौशल्यविकास आणि शासनव्यवहार यांची माहिती घेणे.

घटक	तपशील	श्रेयांक	तासिका
१	विविध कार्यक्रम, स्पर्धाविषयक भाषा कौशल्ये : १ गटचर्चा २ वादविवाद ३ वक्तृत्व ४ चर्चासत्र ५ परिसंवाद	१	१५
२	वृत्तपत्रासाठी लेखन : १ सदरलेखन २ अग्रलेख ३ समीक्षणात्मक लेखन ४ सांस्कृतिक वार्ताकन ५ वृत्तपत्रविषयक पारिभाषिक संज्ञा	१	१५
३	मराठी साहित्य, भाषिक कौशल्यविकास आणि शासनव्यवहार १ राज्यघटनेतील भाषाविषयक तरतुदी २ मराठी राजभाषा अधिनियम ३ मराठीविषयक कार्य करणाऱ्या शासकीय संस्थांचा परिचय	१	१५

दुसरे सत्र  
विषयाचे नाव

व्यावहारिक व उपयोजित मराठी - भाग ६ [CC – 1 F (3)]

अभ्यासक्रमाची उद्दिष्टे :

१. भाषाविषयक उपयोजित लेखन क्षमता विकसित करणे.
२. विविध माध्यमे आणि नवसमाजमाध्यमांतील विविध भाषिक आविष्कारांचे स्वरूप समजून घेणे.
३. विविध माध्यमे आणि नवसमाजमाध्यमांसाठी लेखन क्षमता विकसित करणे.

घटक	तपशील	श्रेयांक	तासिका
१	<b>निवडक लेखन प्रकारांसाठी परीक्षण :</b> परीक्षण : स्वरूप १ एकांकिका २ मालिका ३ लघुपट ४ चित्रपट	१	१५
२	<b>विविध माध्यमे आणि नवसमाजमाध्यमांतील माध्यमांसाठी लेखन कौशल्ये:</b> विविध माध्यमे आणि नवसमाजमाध्यमांतील स्वरूप आणि लेखनप्रकार १ संकेतस्थळावरील लेखन २ फेसबुकवरील लेखन ३ अनुदानी लेखन ४ ई – वृत्तपत्रासाठी लेखन ५ न्यूज पोर्टलसाठी लेखन	१	१५
३	<b>जाहिरातीसाठी लेखन</b> १ जाहिरात : स्वरूप, प्रकार २ जाहिरातीची भाषा आणि माध्यमे ३ जाहिरात मसुदा लेखन : जाहिरात हेतू आणि उद्देश, मथळा, उपमथळा, तपशील लेखन, घोषवाक्य इत्यादी.	१	१५

संदर्भ ग्रंथ :

१. संगणक, अच्युत गोडबोले, मौज प्रकाशन, मुंबई.
२. व्यावहारिक मराठी, डॉ. ल. रा. नसिराबादकर, फडके प्रकाशन, कोल्हापूर.
३. आधुनिक माहिती तंत्रज्ञानाच्या विश्वात, दीपक शिक्रापूरकर, उज्ज्वल मराठे, उत्कर्ष प्रकाशन, पुणे.
४. भाषांतरमीमांसा, कल्याण काळे, अंजली सोमण.

५. व्यावहारिक मराठी, पुणे विद्यापीठ प्रकाशन, पुणे.
६. व्यावहारिक मराठी, डॉ. कल्याण काळे, डॉ. दत्तात्रेय पुंडे, निराली प्रकाशन, पुणे.
७. व्यावहारिक मराठी, डॉ. लीला गोविलकर, डॉ. जयश्री पाटणकर, स्नेहवर्धन प्रकाशन, पुणे.
८. प्रसारमाध्यमांसाठी लेखन कौशल्य, यशवंतराव चव्हाण मुक्त विद्यापीठ, नाशिक.
९. व्यावहारिक मराठी, डॉ. सयाजीराजे मोकाशी, डॉ. रंजना नेमाडे
१०. कहाणी वर्तमानपत्राची, चंचल सरकार अनुवाद, दिनकर गांगल, नॅशनल बुक ट्रस्ट
११. द्विभाषी व्यावहारिक शब्दकोश ( इंग्लिश - मराठी ) गणेश ओतुरकर
१२. व्यावहारिक मराठी भाषा, शरदिनी मोहिते
१३. भाषांतरमीमांसा, संपादक डॉ. रमेश वरखेडे, यशवंतराव चव्हाण मुक्त विद्यापीठ, नाशिक.
१४. सायबर संस्कृती, डॉ. रमेश वरखेडे
१५. प्रसार माध्यमे आणि मराठी भाषा, संपादक, डॉ.भास्कर शेळके
१६. व्यावहारिक आणि उपयोजित मराठी, डॉ. मनोहर रोकडे
१७. मराठी भाषा उपयोजन आणि सर्जन, प्रा. सुहासकुमार बोबडे
१८. व्यावहारिक मराठी, संपादक डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे.
१९. उपयोजित मराठी, संपादक डॉ. केतकी मोडक, संतोष शेणई, सुजाता शेणई
२०. व्यावहारिक व उपयोजित मराठी आणि प्रसारमाध्यमांची कार्यशैली, संपादक, डॉ. संदीप सांगळे
२१. ओळख माहिती तंत्रज्ञानाची, टिमोथी जे. ओ लिअरी
२२. <https://shabdakosh.marathi.gov.in/ananya-glossary>
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२४. <https://director.marathi.gov.in/>
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२६. <https://rmvs.marathi.gov.in/>
२७. <https://vishwakosh.marathi.gov.in/>
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**प्रश्नपत्रिकेचे स्वरूप**

- व्यावहारिक व उपयोजित मराठी - भाग ५ [CC – 1 E (3)]
- व्यावहारिक व उपयोजित मराठी - भाग ६ [CC – 1 F (3)]

<b>विद्यापीठ सत्र परीक्षा</b>		
<b>वेळ: ३ तास</b>	<b>घटकनिहाय प्रश्नतपशील</b>	<b>गुण: ७०</b>
<b>प्रश्न क्रमांक</b>		<b>गुण</b>
प्रश्न १ ला	६ पैकी ४ प्रश्नांची उत्तरे लिहा ( घटक २ व ३ )	२०
प्रश्न २ रा	३ पैकी २ उपप्रश्नांची उत्तरे लिहा. ( घटक १ )	२०
प्रश्न ३ रा	३ पैकी २ उपप्रश्नांची उत्तरे लिहा. ( घटक २ आणि ३ )	२०
प्रश्न ४ था	२ पैकी १ उपप्रश्नाचे उत्तरे लिहा. ( घटक २ आणि ३ )	१०
	<b>सत्र परीक्षा एकूण गुण</b>	<b>७०</b>
	<b>अंतर्गत मूल्यमापन</b>	
	लेखी परीक्षा (घटक १ आणि २)	२०
	<b>घटक ३</b>	१०
	अभ्यासेतर - अभ्यासपूरक उपक्रम : अभ्याससहल / क्षेत्र भेट / अहवाल लेखन / प्रकल्प कार्य / सादरीकरण / गृहपाठ / चर्चासत्र (यापैकी कोणतेही एक)	
	<b>अंतर्गत मूल्यमापन एकूण गुण</b>	<b>३०</b>
	<b>सत्र परीक्षा व अंतर्गत मूल्यमापन एकूण गुण</b>	<b>१००</b>
<b>विशेष सूचना :</b>		
<ul style="list-style-type: none"> <li>■ अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>■ विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार , विहित कालावधीत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>■ विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		

तृतीय वर्ष कला (T. Y. B. A.)

नियमित अभ्यासक्रम

पहिले सत्र

विषयाचे नाव

मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स. १६०० [DSE 1 C (3+1)]

अभ्यासक्रमाची उद्दिष्टे :

- १ वाङ्मयेतिहास संकल्पना, स्वरूप, प्रेरणा, प्रवृत्ती समजून घेणे.
- २ मध्ययुगीन कालखंडाची सामाजिक, सांस्कृतिक पार्श्वभूमी समजून घेणे.
- ३ मराठी भाषा, साहित्याची कालखंडानुरूप इतिहास समजून घेणे.

घटक	तपशील	श्रेयांक	तासिका
१	<b>वाङ्मयेतिहास संकल्पना आणि मराठी भाषा, वाङ्मयाचा उगम</b> १. वाङ्मयेतिहास : संकल्पना आणि स्वरूप २. मराठी वाङ्मयेतिहासाचे कालखंड : स्वरूपचर्चा मराठी भाषा व वाङ्मयाचा उगम (कोरीव लेख आणि ग्रंथ या साधनांच्या आधारे ) <b>यादव काळ आणि बहामनी काळातील वाङ्मयनिर्मिती</b> १ या कालखंडांची सामाजिक आणि सांस्कृतिक पार्श्वभूमी २ महानुभाव वाङ्मय : प्रेरणा, प्रवृत्ती व स्वरूप	१	१५
२	३ महानुभाव वाङ्मय : गद्य ग्रंथ - लीळाचरित्र, स्मृतिस्थळ, दृष्टान्तपाठ. पद्य ग्रंथ - महदंबेचे धवळे, साती ग्रंथ. १. वारकरी वाङ्मय : प्रेरणा, प्रवृत्ती व स्वरूप ( संत ज्ञानेश्वर, संत नामदेव, संतमेळा, संत एकनाथ, शेख महंमद )	१	१५
३	१. मुकुंदराज, नृसिंहसरस्वती, दासोपंत, फादर स्टीफन्स, ब्रह्मगुणदास : वाङ्मयनिर्मितीचे स्वरूप	१	१५
४	संशोधनपर प्रकल्प / क्षेत्र कार्य (घटक १, २ आणि ३)	१	१५

दुसरे सत्र  
विषयाचे नाव

मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास - इ.स. १६०० ते इ.स. १८१७ [DSE1 D (3+1)]

घटक	तपशील	श्रेयांक	तासिका
१	<b>शिवकाल आणि पेशवेकाळातील वाङ्मयनिर्मिती</b> १. या कालखंडांची सामाजिक आणि सांस्कृतिक पार्श्वभूमी २. संत तुकाराम : वाङ्मयनिर्मितीचे स्वरूप ३. संत रामदास : वाङ्मयनिर्मितीचे स्वरूप	१	१५
२	<b>पंडित आणि शाहिरांची वाङ्मयनिर्मिती</b> १. पंडिती वाङ्मय : स्वरूप, प्रेरणा, प्रवृत्ती, आणि वैशिष्ट्ये मुक्तेश्वर, वामनपंडित, रघुनाथपंडित, मोरोपंत २. शाहिरी वाङ्मय : स्वरूप, प्रेरणा, प्रवृत्ती आणि वैशिष्ट्ये अनंत फंदी, परशराम, राम जोशी, प्रभाकर, होनाजी बाळा	१	१५
३	<b>बखर आणि गद्य वाङ्मयनिर्मिती</b> १. बखर वाङ्मय : स्वरूप, प्रेरणा, प्रवृत्ती आणि वैशिष्ट्ये सभासदाची बखर, शिवछत्रपतींचे सप्तप्रकरणात्मक चरित्र, शिवदिग्विजय, पानिपतची बखर, भाऊसाहेबांची बखर. २. आज्ञापत्र	१	१५
४	संशोधनपर प्रकल्प / क्षेत्र कार्य (घटक १, २ आणि ३)	१	१५

संदर्भ ग्रंथ :

१. महाराष्ट्र सारस्वत, वि. ल. भावे
२. मराठी भाषेचा व वाङ्मयाचा इतिहास, बा. अ. भिडे
३. मराठी वाङ्मयाचा इतिहास, खंड पहिला, ल. रा. पांगारकर
४. प्राचीन मराठी वाङ्मयाचा इतिहास, भाग १, पूर्वार्ध आणि उत्तरार्ध, अ. ना. देशपांडे
५. महाराष्ट्रीयानांचे काव्यपरीक्षण, श्री. व्यं. केतकर
६. मराठी वाङ्मयाभिरुचीचे विहंगमावलोकन, जोग रा. श्री.
७. पाच भक्तीसंप्रदाय, र. रा. गोसावी
८. महाराष्ट्रातील पाच संप्रदाय, पं. रा. मोकाशी
९. नाथ संप्रदाय : उदय व विकास, प्र. न. जोशी
१०. मराठी साहित्याचे आदिबंध, उषा मा. देशमुख
११. यादवकालीन महाराष्ट्र, मु. गो. पानसे
१२. यादवकालीन मराठी, शं. गो. तुळपुळे
१३. महानुभवीय मराठी वाङ्मय, य. खु. देशपांडे
१४. महानुभाव पंथ आणि त्यांचे वाङ्मय, शं. गो. तुळपुळे
१५. श्रीचक्रधर : चरित्र, वि. भि. कोलते

१६. चक्रपाणि : आद्य मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी, रा. चिं. ढेरे
१७. श्रीविठ्ठल : एक महासमन्वय, रा. चिं. ढेरे
१८. वारकरी पंथाचा इतिहास , शं. वा. दांडेकर
१९. वारकरी पंथ : उदय व विकास, भा. पं. बहिरट
२०. संतवाङ्मयाची सांस्कृतिक फलश्रुती, गं. बा. सरदार
२१. पाच संतकवी, शं. गो. तुळपुळे
२२. ज्ञानदेव आणि नामदेव, शं. दा. पेंडसे
२३. प्राचीन मराठी गद्य : प्रेरणा आणि प्रवृत्ती, श्री. रं. कुलकर्णी
२४. संत साहित्य : काही अनुबंध, अशोक कामत
२५. ओवी ते लावणी, श्री. रं. कुलकर्णी
२६. मध्ययुगीन मराठी वाङ्मय : एक पुनर्विचार, श्री. रं. कुलकर्णी
२७. मराठी भाषेचे मूळ, विश्वनाथ खैरे
२८. श्रीसमर्थ विरचित स्तोत्रवाङ्मय, र. रा. गोसावी
२९. रामदासांची काव्यदृष्टी : एक अभ्यास, रा. वि. चिटणीस
३०. पुन्हा तुकाराम, दिलीप चित्रे
३१. आनंदाचा डोह, रा. ग. जाधव
३२. दासबोध : वाङ्मयीन समीक्षा, रमेश तेंडुलकर
३३. टीकास्वयंवर, भालचंद्र नेमाडे
३४. तुकाराम : अंतर्बाह्य संघर्षाची अनुभवरूपे, म. सु. पाटील
३५. धर्मसंप्रदाय आणि मध्ययुगीन मराठी वाङ्मय, र. बा. मंचरकर
३६. प्राचीन मराठी वाङ्मयाचे स्वरूप, ह. श्री. शेणोलीकर
३७. मराठी संतवाणीचे मंत्राक्षरत्व, ह. श्री. शेणोलीकर
३८. मध्ययुगीन मराठी नाथसंप्रदायिक साहित्य संशोधनाच्या काही दिशा, र. रा. गोसावी
३९. तुकारामविषयक अभ्यासाचा मागोवा, मा. ना. आचार्य
४०. संत एकनाथांचा वारसा, रा. ग. जाधव
४१. संतसाहित्य : अभ्यासाच्या काही दिशा, कल्याण काळे व रा. शं. नगरकर
४२. मध्ययुगीन मराठी साहित्य : एक पुनर्विचार, श्री. रं. कुलकर्णी
४३. वाङ्मयेतिहासाची संकल्पना, द. दि. पुंडे
४४. शिवकालीन राजनीती आणि रणनीती, श्री. रं. कुलकर्णी
४५. संतसाहित्याचे समाजशास्त्रीय दृष्टिक्षेप, सदानंद मोरे
४६. तुकारामदर्शन, सदानंद मोरे
४७. महानुभाव साहित्य : शोध संचार, अविनाश आवलगावकर
४८. श्रीगोविंदप्रभुविषयक साहित्य : शोध आणि समीक्षा, अविनाश आवलगावकर
४९. लीळाचरित्र : संशोधन आणि समीक्षा, अविनाश आवलगावकर
५०. महानुभाव साहित्य : शोध आणि चिकित्सा, अविनाश आवलगावकर.
५१. प्राचीन मराठी भक्तीवाङ्मयाची स्वातंत्र्योत्तर समीक्षा, सतीश बडवे
५२. संतसाहित्याचा वाङ्मयीन अभ्यास, सुहासिनी इर्लेकर



**प्रश्नपत्रिकेचे स्वरूप**

- मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास : प्रारंभ ते इ.स. १६०० [DSE 1 C (3+1)]
- मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास - इ.स. १६०१ ते इ.स. १८१७ [DSE1 D (3+1)]

<b>विद्यापीठ सत्र परीक्षा</b>		
<b>वेळ : ३ तास</b>	<b>घटकनिहाय प्रश्न तपशील</b>	<b>गुण : ७०</b>
<b>प्रश्न क्रमांक</b>		<b>गुण</b>
प्रश्न १ ला	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी ५० शब्दांपर्यंत लिहा. (घटक १, २, ३)	१०
प्रश्न २ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक १)	२०
प्रश्न ३ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक २)	२०
प्रश्न ४ था	३ पैकी २ प्रश्नांची उत्तरे २०० शब्दांपर्यंत लिहा. (घटक ३)	२०
<b>सत्र परीक्षा एकूण गुण</b>		<b>७०</b>
<b>अंतर्गत मूल्यमापन</b>		
लेखी परीक्षा (घटक १, २ आणि ३)		२०
संशोधनपर प्रकल्प / क्षेत्रकार्य (घटक १, २ आणि ३)		१०
<b>सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण</b>		<b>१००</b>
<b>विशेष सूचना :</b>		
<ul style="list-style-type: none"> <li>● अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>● विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>● विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		

तृतीय वर्ष कला (T. Y. B. A.)

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वर्णनात्मक भाषाविज्ञान : भाग १ [DSE 2 C (3)+1]

अभ्यासक्रमाची उद्दिष्टे :

- १ भाषा स्वरूप, वैशिष्ट्ये व कार्ये समजावून घेणे.
- २ भाषा अभ्यासाची आवश्यकता स्पष्ट करणे.
- ३ भाषा अभ्यासाच्या शाखा आणि विविध पद्धतींचा थोडक्यात परिचय करून घेणे.
- ४ वागिन्द्रियाची रचना, कार्ये आणि स्वननिर्मितीची प्रक्रिया समजावून घेणे.
- ५ स्वनविज्ञान, स्वनिमविचार आणि मराठीची स्वनिमव्यवस्था समजावून घेणे.

घटक	तपशील	श्रेयांक	तासिका
१	<p><b>भाषा : स्वरूप व संकल्पना</b></p> <p>१ भाषा : स्वरूप, वैशिष्ट्ये व कार्ये</p> <p>२ संदेशन : मानव व मानवेतर संदेशन</p> <p>३ भाषाभ्यासाच्या शाखा (ध्वनिविचार – व्याकरणविचार – अर्थविचार – शब्दसंग्रह - स्थूल परिचय)</p> <p>४ भाषेच्या अभ्यासाचे महत्त्व व भाषाभ्यासाच्या पद्धती (ऐतिहासिक, वर्णनात्मक, सामाजिक, तुलनात्मक – स्थूल परिचय)</p>	१	१५
२	<p><b>स्वनविचार</b></p> <p>१ स्वनविज्ञान : स्वरूप व संकल्पना ( उच्चारणकेंद्री - संचारणकेंद्री – श्रवणकेंद्री)</p> <p>२ वागिन्द्रिय : रचना व कार्ये स्वनांची निर्मितीप्रक्रिया</p> <p>३ स्वनांचे वर्गीकरण व वर्गीकरणाची तत्त्वे ( उच्चारण स्थान, उच्चारण अवयव, प्रयत्न )</p>	१	१५
३	<p><b>स्वनिमविचार</b></p> <p>१ स्वन -स्वनिम-स्वनांतर (परस्पर संबंध व प्रकार)</p> <p>२ स्वनिमनिश्चितीची तत्त्वे</p> <p>३ विनियोग संकल्पना (व्यवच्छेदक विनियोग- पूरक विनियोग - मुक्त परिवर्तन ) मराठीची स्वनिमव्यवस्था ( स्वरस्वनिम - अर्धस्वरस्वनिम - व्यंजन स्वनिम – खंडित व खंडाधिष्ठीत स्वनिम -बलाघात, सुरावली – नासिक्यरंजन - सीमासंधी)</p>	१	१५
४	संशोधनपर प्रकल्प / क्षेत्रकार्य (घटक १, २ आणि ३)	१	१५

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वर्णनात्मक भाषाविज्ञान : भाग २ - ४ [DSE 2 D (3)+1]

अभ्यासक्रमाची उद्दिष्टे :

१. रूपविन्यास आणि मराठीची रूपव्यवस्था समजावून घेणे
२. वाक्यविन्यास आणि वाक्यव्यवस्थेचा मराठी भाषेच्यासंदर्भात परिचय करून देणे
३. अर्थविन्यास या संकल्पनेचा भाषावैज्ञानिक अंगाने परिचय करून देणे

घटक	तपशील	श्रेयांक	तासिका
१	<b>रूपिमविचार</b> १ रूपविन्यास (संकल्पना) २ रूपिका - रूपिम - रूपिकांतर : स्वरूप व प्रकार ३ रूपिम निश्चितीची तत्त्वे ४ विनियोग संकल्पना ५ प्रकृती आणि प्रत्यय यांचे वर्गीकरण	१	१५
२	<b>वाक्यविचार</b> १ वाक्यविन्यास (संकल्पना परिचय) २ घटक आणि रचना : परस्पर संबंध ३ वाक्याचे घटक (उद्देश्य, विधेय) ४ प्रथमोपस्थित संघटक संकल्पना व वाक्यविश्लेषण ( शब्द - शब्दबंध - उपवाक्य - वाक्य ) ५ वाक्यांचे प्रकार	१	१५
३	<b>अर्थविचार</b> १ अर्थ : स्वरूप व संकल्पना २ अर्थविन्यास (संकल्पना परिचय) ३ अर्थाचे वर्गीकरण (प्रकार: सांकल्पनिक अर्थ - साहचर्यपर अर्थ- शैलीगत अर्थ- भावपर अर्थ- परावर्तीत अर्थ - विषय अर्थ ) ४ अर्थविन्यासाची व्यापकता ( समानार्थी शब्द, अनेकार्थी शब्द - सरूपता - अर्थसमावेश - अर्थविरोध)	१	१५
४	संशोधनपर प्रकल्प / क्षेत्रकार्य (घटक १, २ आणि ३)	१	१५

**संदर्भ ग्रंथ :**

१. वैखरी, अशोक केळकर
२. भाषाविज्ञान : वर्णनात्मक आणि ऐतिहासिक, मिलिंद मालशे, लोकवाड.मय प्रकाशन,मुंबई.
३. मराठीचा भाषिक अभ्यास, मु.श्री.कानडे
४. वर्णनात्मक भाषाविज्ञान :स्वरूप आणि पद्धती, संपा.कल्याण काळे,डॉ.सोमण
५. आधुनिक भाषाविज्ञान, संपा. कल्याण काळे
६. अभिनव भाषाविज्ञान, डॉ.गं.ना.जोगळेकर
७. वर्णनात्मक भाषाविज्ञान, डॉ.लीला गोविलकर
८. भाषाशास्त्रविचार, डॉ. र. बा.मंचरकर
९. ध्वनिविचार, ना.गो.कालेलकर, डॉ.प्रभाकर जोशी
१०. सुलभ भाषाविज्ञान, दत्तात्रय पुंडे
११. भाषाविज्ञान परिचय, स.गं.मालशे
१२. सुबोध भाषाविज्ञान, प्र.न. जोशी
१३. आधुनिक भाषाविज्ञान : सिद्धांत,उपयोजन, मिलिंद मालशे
१४. आधुनिक भाषाविज्ञान, डॉ.मिलिंद सं. मालशे
१५. भाषाशास्त्र प्रदीप, संपा. स. गं. मालशे, द. दि. पुंडे, अंजली सोमण
१६. भाषा आणि भाषाविज्ञान, रमेश धोंगडे
१७. मराठीचे वर्णनात्मक भाषाविज्ञान, डॉ. महेंद्र कदम, स्नेहवर्धन प्रकाशन,पुणे
१८. भाषाविज्ञान परिचय, संपा. डॉ. वसंत शेकडे, संजय नगरकर व इतर, नवनरेन्द्र प्रकाशन .
१९. भाषाविज्ञान : संकल्पना व स्वरूप, डॉ.आरती कुलकर्णी

**प्रश्नपत्रिकेचे स्वरूप**

- वर्णनात्मक भाषाविज्ञान : भाग १ [DSE 2 C (3)+1]
- वर्णनात्मक भाषाविज्ञान : भाग २ [DSE 2 D (3)+1]

<b>विद्यापीठ सत्र परीक्षा</b>		
<b>वेळ : ३ तास</b>	<b>घटकनिहाय प्रश्न तपशील</b>	<b>गुण : ७०</b>
<b>प्रश्न क्रमांक</b>		<b>गुण</b>
प्रश्न १ ला	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी ५० शब्दांपर्यंत लिहा. ( घटक १,२, ३)	१०
प्रश्न २ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक १)	२०
प्रश्न ३ रा	३ पैकी २ प्रश्नांची उत्तरे प्रत्येकी २०० शब्दांपर्यंत लिहा. (घटक २)	२०
प्रश्न ४ था	३ पैकी २ प्रश्नांची उत्तरे २०० शब्दांपर्यंत लिहा. (घटक ३ )	२०
<b>सत्र परीक्षा एकूण गुण</b>		<b>७०</b>
<b>अंतर्गत मूल्यमापन</b>		
<b>लेखी परीक्षा (घटक १, २ आणि ३)</b>		<b>२०</b>
<b>संशोधनपर प्रकल्प / क्षेत्र कार्य (घटक १, २ आणि ३)</b>		<b>१०</b>
<b>सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण</b>		<b>१००</b>
<b>विशेष सूचना :</b>		
<ul style="list-style-type: none"> <li>● अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>● विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>● विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		

तृतीय वर्ष कला (T. Y. B. A.)

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कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग -१ [ SEC 2 C (2) ]

अभ्यासक्रमाची उद्दिष्टे :

१. कार्यक्रमांचे स्वरूप आणि प्रकार समजून घेणे.
२. कार्यक्रम संयोजनातील भाषिक कौशल्ये प्राप्त करणे.

घटक	तपशील	श्रेयांक	तासिका
१	<b>कार्यक्रमांचे स्वरूप आणि प्रकार</b> १. कार्यक्रमांचे स्वरूप आणि प्रकार : भाषणे, चर्चासत्रे, परिषदा, गटचर्चा, बैठक, मेळावे, कला – सांस्कृतिक कार्यक्रम, जाहिरात, विपणनविषयक, आभासी २. कार्यक्रम संयोजनातील विविध घटक ( आयोजक, प्रायोजक, जाहिरात, निवेदक) आणि त्यांचे कार्य	१	१५
२	<b>कार्यक्रम संयोजनातील भाषिक कौशल्ये</b> १. पूर्वतयारी २. कार्यक्रम संयोजनातील भाषेचे महत्त्व ३. कार्यक्रमाची योजना, आखणी आणि रूपरेषा १. कार्यक्रमपूर्व नियोजन २. कार्यक्रमातील विविध घटक ३. भाषेचा वापर : निवेदन, प्रास्ताविक, परिचय, स्वागत, मनोगत, आभार, सूत्रसंचालन. ४. कार्यक्रमपश्चात कामे	१	१५

दुसरे सत्र  
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कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग २ [ SEC 2 D (2) ]

अभ्यासक्रमाची उद्दिष्टे :

- १ कार्यक्रम संयोजनातील लेखन कौशल्ये संपादन करणे.
- २ कार्यक्रम संयोजनातील भाषिक कौशल्ये प्राप्त करणे.
- ३ आभासी कार्यक्रमांचे भाषिक कौशल्ये संयोजन करणे.

घटक	तपशील	श्रेयांक	तासिका
१	<b>कार्यक्रम संयोजनातील लेखन कौशल्ये</b> १ निमंत्रणपत्र व निमंत्रणपत्रिका लेखन २ कार्यक्रमपत्रिका लेखन ३ मानपत्र लेखन ४ बातमी लेखन ५ कार्यक्रम अहवाल लेखन	१	१५
२	<b>कार्यक्रम संयोजन</b> १ कविसंमेलन २ वाचन प्रेरणा दिन ३ मराठी भाषा पंधरवाडा ४ मराठी भाषा दिन ५ व्याख्यानमाला ६ पुस्तक प्रदर्शन <b>आभासी कार्यक्रम संयोजन</b> १ झूम / गुगल मिट वरील व्याख्यान २ फेसबुक व यूट्यूब वरील कार्यक्रम live करणे वा अपलोड करणे.	१	१५

संदर्भग्रंथ :

- १ व्यावहारिक मराठी, पुणे विद्यापीठ प्रकाशन.
- २ मराठी भाषेची संवाद कौशल्ये, य. च. म. मुक्त विद्यापीठ, नाशिक.
- ३ व्यक्तिमत्त्व विकासासाठी संभाषण व लेखन कौशल्ये, संपा. डॉ. पृथ्वीराज तौर, डॉ. शैलेन्द्र लेंडे, डॉ. वंदना महाजन.
- ४ व्यावहारिक व उपयोजित मराठी, संपादक संदीप सांगळे, डायमंड प्रकाशन.
- ५ कार्यक्रमाचे प्रभावी संयोजन आणि सूत्रसंचालन, जयप्रकाश बगदे, साकेत प्रकाशन
- ६ व्यावहारिक मराठी, ल रा. नासिराबादकर, फडके प्रकाशन

- ७ प्रसारमाध्यमे आणि मराठी भाषा, संपादक डॉ. भास्कर शेळके, कर्मवीर प्रकाशन पुणे  
 ८ व्यावहारिक मराठी, डॉ. लीला गोविलकर, डॉ. जयश्री पाटणकर  
 ९ व्यावहारिक मराठी, डॉ. कल्याण काळे, डॉ. दत्तात्रय पुंडे, निराली प्रकाशन

### प्रश्नपत्रिकेचे स्वरूप

- कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग १ [ SEC 2 C (2) ]
- कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग २ [ SEC 2 D (2) ]

विद्यापीठ सत्र परीक्षा		
वेळ : २ तास	घटकनिहाय प्रश्न तपशील	गुण : २५
प्रश्न क्रमांक		गुण
प्रश्न १ ला	दोन पैकी एका प्रश्नाचे उत्तर लिहा. (घटक १)	१०
प्रश्न २ रा	दोन पैकी एका प्रश्नाचे उत्तर लिहा. (घटक २)	१०
प्रश्न ३ रा	दोन पैकी एका प्रश्नाचे उत्तर लिहा. (घटक १ आणि २)	५
एकूण गुण		२५
अंतर्गत मूल्यमापन		
लेखी परीक्षा, गृहपाठ, चर्चासत्र, सादरीकरण, समूह चर्चा, प्रकल्प कार्य, अभ्यास भेट यापैकी कोणत्याही दोन प्रकारांतून अंतर्गत मूल्यमापन करावे. (१५+१०)		२५
एकूण गुण		५०
विशेष सूचना :		
<ul style="list-style-type: none"> <li>● अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे.</li> <li>● विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.</li> <li>● विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.</li> </ul>		



## VOCATIONALIZATION OF UNDERGRADUATE COURSES

### T. Y. B. A. Functional English

(w.e.f. 2021-22)

(Credits 03+01 =04)

(70- Semester End Exam and 30- Internal Evaluation)

Each semester will have 03 credits for teaching. Each credit is equivalent to 15 teaching hours. Thus this course shall have 45 teaching hours and 03 additional hours for internal evaluation. ( $03 \times 15 = 45 + 03 = 48$  Hrs.) This pattern is applicable to both Functional English V and VI papers.

- Both semester V and VI: Apart from 03 credits allotted for teaching 01 credit in each semester will be allotted to shooting and uploading a short video on YouTube/making a short documentary film/ writing or making a user manual (Using MS Office Word)

#### Course Contents

#### Paper V: Introduction to Print Media and Writing for Mass Media and Key

##### Competency Modules

#### Objectives:

- To enhance students' ability to communicate in written mode
- To acquaint students with technical forms of written communication
- Making students aware about the change in language use as per they switch to different media platforms
- Introducing newer career options viz. translation, content writer, technical writer, writing for mass media and advertising and equipping to be prepared for the same
- To facilitate the skill based learning
- Encouraging students to observe, compare and analyze the language activities of media through exposure in classroom teaching

#### Semester V

#### Course Contents

**Hours: 48 (45+ 3 for internal evaluation)**

(Figures to the right indicate hours allotted per topic)

1. **Writing News:** (12)
  - i. Elements of News- headline, intro, date line, lead, main body etc
  - ii. Characteristics of News- clarity, precision, simplicity, objectivity, credibility,

authenticity etc.

- iii. Types of News- political, commercial, sports, social, cultural, local, regional, international etc.
- iv. Comparison of news items appearing in print and electronic media with special reference to language
- v. Column writing for newspaper

**2. Letter writing: (08)**

- i. Formal Letter- Application Letter
- ii. Letters to editors and structure of letters to editors
- iii. Letter to editors and their relevance for media

**3. Making of an Advertisement (10)**

- i. Writing script for advertisement
- ii. Features of language used in Advertisement: effectiveness, precision, catchy language, tagline and innovativeness of an idea etc.
- iii. Difference between Advertisement in Print Form and in Electronic Media from Language point of view

**4. Technical writing (15)**

- i. What is technical writing/ communication? Nature and scope.
- ii. Routine Correspondences: Memos, Email messages, Instant messages, text messages
- iii. Writing instructions, User Manuals and Standard operating procedures
- iv. Writing for social media: Building online communities through Blogging (Using Blog for business communication) YouTube (How to shoot and upload a short video on YouTube, Digital Marketing), Twitter, Facebook (Business uses of Facebook)
- v. Technical writing as a career

**Pattern of Evaluation**

**Internal Evaluation:**

- 1. Mid- Semester Examination : 20 Marks**
- 2. Assignment/ Project/ Group Discussion, User Manual writing, script writing, Shooting and uploading a short and innovative video, Blog writing: 10 Marks**

(Teacher can select any one form of assessment suitable to both teacher and students)

**Question Paper Pattern: (Semester- V) Total Marks: 70**

Q1. Objective Questions (Short answers) on News writing.	14
Q2. Writing news or column on given data	06
Q3. A. Writing an application letter seeking a job	08
B. Writing a letter to editor based on the given situation	08
Q4. A. Writing a script for a short advertisement based on given data	08
B. Writing taglines for an advertisement based on the description (Any Two out of Four)	04
Q5.A. Short note/ short answer question on technical writing (Any Three out of five)	12
Q6.A. Writing an Email Message on given situation (Any two out of four)	06
B. Writing a blog based on given situation	04

## **Semester VI:**

### **Course Content**

**Hours: 48 (45 +03 for internal evaluation)**

**(Figures to the right indicate hours allotted per topic)**

- I. Writing Book Review** **12**
  - i) What is Book Review?
  - ii) Nature, characteristics and purpose of book review
  - iii) Types of Review
  - iv) Review and critical analysis
- II. Basics of Translation studies with reference to mass media** **10**
  - i) Meaning, definition and Nature of translation in Mass media
  - ii) Scope for translation in media sector
  - iii) Writing and translating news, articles, column in print media
  - iv) Study of the translated words and phrases for their effective use while writing for media
  - v) Translating given text from Hindi/ Marathi into English and vice-a versa
- III. Appreciating Film and Writing Film Reviews:** **15**
  - i) A Brief History of film studies (Origin, Development and Present)
  - ii) Types of Films: Documentary, Feature film
  - iii) Essentials of a film:
    - a. Story and Plot
    - b. Screenplay and dialogue
    - c. Direction or Authorship
    - d. Acting

- e. Mise en Scene
- f. Cinematography
- g. Sound and Music
- h. Costume and Make up
- i. Writing film reviews with reference to the above points
- ii. Similarities and differences between a film and a literary work with special reference to the structure and language

**B: Key Competency Modules 08**

- i. Stress, Time and Conflict Management
- ii. Introduction to Right to Information
- iii. Creative and Critical Thinking

**Pattern of Evaluation:**

**Internal Evaluation: Mid Semester Examination: 20**  
**Marks**

**Assignment/ Project/ Book Review/ Film Review / Translation activity: 10 Marks**

(A teacher may select any one of the above for assessment)

**Semester- VI**

**Question Paper Pattern: Total Marks: 70**

- |   |    |
|---|----|
| Q1. Short Notes or short answer questions (40 words) on theoretical part of Book Review (Any three out of five) | 12 |
| Q2. Writing a Book review   | 08 |
| Q3. A. Short answer questions on aspects of translation (Any Three)   | 12 |
| B. Translating a news item or a given passage into English  | 08 |
| Q4. A. Giving Marathi/ Hindi words/ phrases for the English term  | 05 |
| B. Translating given text into English and vice a versa   | 05 |
| Q5. A. Short notes/ Short answer questions on essentials of film (Any three)                                    | 12 |
| B. Writing a Film Review  | 08 |

**Suggestions for teaching:**

- *Teacher's role should be of the facilitator, who enables learning, rather than teaching*
- *Teacher shall provide samples for all subtopics prescribed for paper V and also encourage students to collect samples*
- *Teacher will promote the authentic use of social media and encourage students to*

*express their ideas and thoughts on social media leading to inculcation of digital skills*

- *Teacher will encourage students to collect news from different newspapers and ask them to translate it*
- *Teacher may encourage students to maintain a file of news/ articles/ features appearing on the same subject in different papers/ magazines/ weekly etc. as well as commentary on social media on the same subject and compare them from language point of view*
- *It is strongly recommended that the teacher should arrange screening of various types of films for students and encourage classroom discussion*
- *Teacher can use local resources to collect material and can have fruitful collaborations with group/ agencies engaged in similar kind of activities*

### **Books Recommended:**

1. **News Writing and Reporting for Today's Media-** Itule Bruce
2. **The Elements of International English Style-**Edumund H. Wess
3. **Technical Communication Process and Product-** Sharon J. Gerson, Steven M. Gerson
4. **Technical Communication: Principles and Practice-** Meenakshi Raman
5. **Technical Communication-** Mike Markel, Sturat A. Selber
6. **Technical Writing Essentials-** Jon Balzotti
7. **The Structure of Technical English-** A. J. Herbert
8. **An Introduction to Journalism-** Carole Fleming
9. **Mass Communication in India –** Keval Kumar
10. **Television News Writing and Reading-** H. H. Mustafa Jaidi
11. **The Handbook of Technical Writing-** Gerald J. Alred et. Al
12. **User Guides, Manuals and Technical Writing-** Adrian Wallwork
13. **A Short Guide to Write About film-** Timothy Corriganr
14. **How to Write a Simple Book Review-** Allyson R. Abbott
15. **Writing a Book Review-** Rebecca Grat
16. **A companion to Film Theory-** Toby Miller and Robert Stam
17. **Oxford Dictionary of Film Studies-** Annette Kuhn and Guy Westwell
18. **The Pocket Essential: Film Studies-** Andrew M. Butler
19. **Film Studies: An Introduction-** Ed Sikov
20. **Film Studies : The Basics-** Ed. Jill Nelmes
21. **The Oxford History of World Cinema-** Ed. Geoffrey Nowell Smith

**Paper VI Entrepreneurship Development, Project Report & Oral  
Communication in English: Advanced ( Practical Paper)  
(03+ 01= 04 Credits)**

Semester V and VI 3+1 = One credit is for **Interview of an Entrepreneur, Field (SME/Start-up/Service Industry) Visit and Report, or any other Subject-centric activities** to be undertaken by the students in consultation with the teacher concerned. The teachers concerned have to evaluate and maintain the record of these activities.

**OBJECTIVES:**

1. Encouraging students to motivate about the possibility of self employment through entrepreneurship
2. Providing them with basic sources of information regarding Small and Medium Enterprises (SMEs)
3. Introducing students to the idea and aspects of Start-ups and government schemes to promote Start-ups
4. Introducing Students to the opportunities in Service Industry Sector
5. Promoting the idea of self employment through field work, study reports and interviews
5. Leading students to overall development of personality through key competency modules
6. Initiating students into research through project report
7. Creating a possibility of focused writing in the field of their interest

**Expected Outcomes:**

1. Students will able to identify the traits of an entrepreneur
2. They should become aware about the scope, challenges and opportunities in entrepreneurship
3. They will be aware about the basics required for setting up a start-up/ small or medium enterprise
4. They will be able to explore the opportunities in Service Industry Sector
5. They will be proficient in oral and written modes of expression

**Semester V (Theory + Practical)**

**Course Content**

(Figures to the right indicate hours allotted per topic)

- i. Meaning and Concept of Entrepreneurship Development
- ii. Who is an Entrepreneur?
- iii. Factors affecting the growth of Entrepreneurship
- iv. Benefits of Being an Entrepreneur
- v. Qualities of an Entrepreneur
- vi. SWOT Analysis
- vii. Functions of an Entrepreneur

## **Unit II: SME and Start-ups**

**07 + Practical 02**

- i. Promotional steps for starting a Small and Medium Enterprises (SMEs)
- ii. Meaning, definition and types of SME
- iii. Role of the Government in promoting SME
- iv. Role of the Government in promoting Start-ups (Eg. Startup India)

• Sources of Information: **Practical and Government Websites**

District Industry Centre, MIDC, MS SSI Development Corporation, National Institute of E and Small Business Development (IESBUD), National E Development Board (NEDB), E D Institute of India (EDII), State Industrial Development Bank (SIDBI), MSEB, office of the Charity Commissioner  
[www.startupindia.gov.in](http://www.startupindia.gov.in) [www.smechamberofindia.com](http://www.smechamberofindia.com) <https://msme.gov.in/>

## **Unit III: Service Industry**

**07**

- i. Meaning, definition and scope
- ii. Process of registration: SME and service industries
- iii. Similarities and differences between SMEs and service industries

Note: Some features of SMEs/Startups and Service Industries can be overlapping. Teachers are expected to explain these nuances.

## **Unit IV. Techno Economic Feasibility Assessment**

**08**

- i. Primary Project Report
- ii. Detailed Project Report
- iii. Techno Economic Feasibility Report

## **Unit V. Introduction to Laws and Regulations**

**07**

- i. Legal Aspects: Agreement, Franchisee, Lease, MOU etc. (Basics. Teachers can use some examples to explain these documents)
- ii. Basic Knowledge of Income Tax and GST
- iii. Factory Act and Payment of wages Act, shop act

## **Unit VI. Motivational Stories**

**07**

- i. Motivational Stories of minimum Two Successful Entrepreneurs: Practical : Field work as well as reading Biographies/ Autobiographies of Entrepreneurs.
- ii. Screening of Films based on such success/ innovative ideas stories can also be done.

**Practical: Teachers are expected to guide students before the practical 03**

1. Experiences of an Entrepreneur (Unit I): Mode: Interview (Actual/ Email/On Phone)
2. Understanding SME/ Service Industry/ Start-up (Unit II and III): Mode: Visit to SME/ Service Industry/ Start-up

**Evaluation Pattern**

**Internal Evaluation: for 30 Marks**

**Internal Evaluation: 1. Mid Semester Examination: 20 Marks**

**2. Summary of a Successful Entrepreneur's Biography/Autobiography: 10 Marks**

- Note:**
1. Practical Exam to be conducted for the assessment of Interview and Report.
  2. Summary of a Successful Entrepreneur's Biography/Autobiography to be considered for the assessment *only in exceptional situation when the visit is not possible.*

**External Evaluation: for 70 Marks**

**Semester End Theory Examination Pattern**

- |  |    |
|--|----|
| 1. Questions on Unit 1 (Short Notes Any THREE out of Four)     | 12 |
| 2. Questions on Unit 2 (Short Notes Any THREE out of Four)     | 12 |
| 3. Questions on Unit 3 (Any TWO out of Four)                   | 14 |
| 4. Questions on Unit 4 (Any TWO out of Four)                   | 16 |
| 5. Questions on Unit 5 and 6 (Short Notes Any FOUR out of Six) | 16 |

**Semester VI**

**Course Content**

**48 (38+ 10 for Project Report Guidance)**

**A**

**I. Voice Culture, Voice Modulation:** breath- control, sharpness, and volume of voice, pitch variation, pronunciation and intonation

4

The above will be tested in the external practical exam for 5 marks from the overall performance.

**II. Preparing News Bulletin for Radio/TV** containing international, national, regional, local and sports news, weather news, all types of news

10

This bulletin will be prepared by students themselves and will not be downloaded. Students will work on it for the term and keep it ready before final practical exam for reading. A copy of the same will be submitted to the dept



beforehand. (The students may be encouraged to transcribe their script phonemically)

**III. Speech** of about 5 to 7 minutes on a given topic.

10

Students will be encouraged to hear public speeches and write analysis of the same in their journal from the point of view of language, organization of thought, expressions of ideas and emotions, information, use of illustrations, quotations, body language, effectiveness etc. They may be given a list of topics for practice as well as to write the outline plan of the speech they will make.

**IV. Talking in a group-** a 'free-talk' activity to test spontaneity, naturalness, vocabulary, initiation, cooperation, consistency in expressing opinion etc

12

## **B**

**Project Report or exercises in creative performance in any one area of language use studied in FE Syllabi**

10

*Suggestions for Teaching*

- 1) Extensive use of newspapers, radio and TV in the classroom is necessary
- 2) Teacher, with the help of the Head and Coordinator will plan the field and other activities beforehand and will prepare academic calendar
- 3) Students will be encouraged to spend more time with the department for fruitful activity
- 4) Guest lectures may be arranged from time to time
- 5) There will be insistence on students attending public speeches/ internet may be used for the same in absence of public functions
- 6) For project students must be able to use all the 4 language skills
- 7) As an option to project they may be encouraged to do exercise in any one area of language use studied in SY/TYFE syllabi; for example a student interested in newspaper may write articles, features, news of different types, letters to editors to show his/her proficiency in using language comfortably in that particular area.

*He may be encouraged to write several different headlines for the same news to show his creativity or a student interested in trying his/her language skills in the field of advertising may write copy of ads of different types (eg. Domestic, cosmetics, health drinks, social cause) for different media. The respective dept/college may give a certificate for such a student showing proficiency of language skills required for a particular vocation*

## Evaluation Pattern 30:70

**Internal Evaluation: TV/Radio News reading/Preparing: 20 Marks**

**Assignment/ Participation in visits/activities Activity Report/ Industry Visit Report : 10 Marks** (A teacher may select any one of the above for assessment)

**Pattern for Semester Examination: (Practical) 70 marks**

**A:**

Q1 Reading news for TV/Radio – the students will present the News bulletin they have prepared as term work 10

Q2 Speech on the given topic for approximately 7 minutes 10

**B:**

Viva on Project Report 50

### Books recommended

- 1. An Introduction to Academic Writing:** Davis, Lloyd & Mackry, Susan
- 2. Entrepreneurship Development:** G.R. Basotia / K K Sharma.
- 3. Strengthen Your English :** Bhaskaran M (Oxford University Press)
- 4. One Step Ahead Writing Reports :** Selly John
- 5. Entrepreneurial Development:** S. S. Khanna (S. Chand)
- 6. Entrepreneurship Development and Small Business Enterprise:** Charantimath Poornima M. (Pearson)
- 7. Entrepreneurship | 11th Edition:** Robert D. Hisrich, Michael P. Peters, Dean A. Shepherd (McGraw Hill)



# **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Three Year B.A. and B.Sc. Degree Program in Geography (Faculty  
of Science & Technology)**

**T.Y.B.A. (Geography)**

## Choice Based Credit System Syllabus

### To be implemented from Academic Year 2021-2022

T.Y.B.A. (Geography) Choice Based Credit System Syllabus

To be implemented from Academic Year 2021-2022

#### Course Structure

#### F. Y. B. A. GEOGRAPHY

Sr. No.	Semester	Course No	Name of the Course	Category
1	Semester I	Gg.110 (A)	Physical Geography	CC – 1 A
2	Semester II	Gg.110 (B)	Human Geography	CC – 1 B

#### S. Y. B. A. GEOGRAPHY

Paper Code	Semester	Paper	Subject
Gg: 210(A)	III	G2 CC1C	Environmental Geography I OR Economic Geography -I
Gg: 220(A)	III	S1 DSE 1 A	Geography of Maharashtra - I OR Population Geography – I
Gg: 201(A)	III	S2 DSE 2 A	Practical Geography – I (Scale and Map Projections)
(Value/skill based course)	III	SEC 2 A	Applied Course of Disaster Management
Gg: 210(B)	IV	G2 CC1D	Environmental Geography- II OR Economic Geography -II
Gg: 220(B) DSE 1 B	IV	S1 DSE 1 B	Geography of Maharashtra – II OR Population Geography – II
Gg: 201(B) DSE 2 B	IV	DSE 2 B	Practical Geography – II (Cartographic Techniques, Surveying and Excursion / Village / Project Report)
(Value/skill based course)	IV	SEC 2 B	Applied Course of Travel and Tourism Geography

## T.Y.B.A. Geography

Paper Code	Semester	Paper	Subject
Gg: 310(A)	V	CC1E	Geography of Disaster Management-I OR Geography of Tourism- I
Gg: 320(A)	V	DSE 1 C	Geography of India –I OR Geography of Rural Development -I
Gg: 301(A)	V	DSE 2 C	Practical Geography – I (Techniques of Spatial Analysis)
(Value/skill based course)		SEC 2C	Research Methodology – I
Gg: 310(B)	VI	CC1F	Geography of Disaster Management-II OR Geography of Tourism -II
Gg: 320(B)	VI	DSE 1D	Geography of India -II OR Geography of Rural Development -II
Gg: 301(B)	VI	DSE 2D	Practical Geography – II (Techniques of Spatial Analysis, Surveying and Excursion / Village / Project Report)
(Value/skill based course)		SEC 2 D	Research Methodology – II

## Equivalence of Previous syllabus along with new syllabus:

Paper	Old Course	New Course
G3	Gg-310 Regional Geography of India OR Gg-310 Human Geography	Geography of Disaster Management-I OR Geography of Tourism- I
G3		Geography of Disaster Management-II OR Geography of Tourism- II
S3	Gg-320 Agricultural Geography OR Gg-320 Population and Settlement Geography	Geography of India –I OR Geography of Rural Development -I
S3		Geography of India –II OR Geography of Rural development -II
S4	Gg-301 Techniques of Spatial Analysis	Practical Geography – I (Techniques of Spatial Analysis)
S4		Practical Geography – II (Techniques of Spatial Analysis, Surveying and Excursion / Village / Project Report)

## Semester V

## Geography of Disaster Management-I CC1E(No. of Credits: 03)

**Objectives:**

- 1) To introduce students the concept of disaster & its relation with Geography.
- 2) To acquaint the students with the utility & application of hazards in different areas & its management.
- 3) To make the students aware of the need of protection & disaster management.

Sr. No.	Topic	Learning Points	No. of Lectures
1	Concepts in disaster management.	a) Concept of management b) Aims and objectives c) Pre-disaster management and Post – disaster management	12
2	Introduction to hazards, disasters	a) Meaning and definition of Disasters b) Geographical conditions and disasters c) Classification of Disasters	12
3	Disaster management and measures	a) Structure of disaster management - Preparedness, Response, Recovery, Mitigation, Rehabilitation b) Standard operating procedure of management on government level c) Role of media	12
4	Climatic disasters and their management	a) Hail Storm & Cloud Burst a) Cyclones and Storms b) Droughts and Floods	12

- Alexander, D. (1993). Natural Disasters. UCL Press Ltd., London
- Bloom, A.L., 1998. Geomorphology. A Systematic Analysis of Late Cenozoic Landforms. Pearson Education (Singapore) Pte. Ltd.
- Chandna, R. C., 2000. A Geography of Population, Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
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- Hamblin, W.K., 1989. The Earth's Dynamic Systems, Macmillan Publishing Company, New York.
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- Kale, V.S. and Gupta, A., 2001. Introduction to Geomorphology, Orient Longman, Calcutta.
- Knox, P. and Agnew J., 1998. The Geography of the World Economy, Arnold, London.
- Lutgens, F.K. and Tarbuck, E.J., 2007. The Atmosphere. Prentice Hall, Englewood Cliffs, New Jersey, USA.
- Ross, D. A., 1988. Introduction to Oceanography. Prentice Hall, New Jersey.

- Saptarshi P. G., More J. C., Ugale V. R. and Arjun Musmade (2009), “Geography and Natural Hazard” Diamond, Pune.
- Savindra Singh, (2000): Environmental Geography. PrayagPustakBhavan, Allahabad
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- Strahler, A.A. and Strahler, A. N., 2002. Physical Geography: Science and Systems of the Human Environment, John Wiley and Sons, INC.
- Musmade Arjun. H., More J. C., 2014, Geography of Disaster Management, Diamond, Pune.
- A.H.Choudhar ,P.N.Salve, S.M.Kadam.R.H.Choudhar,V.C.Ithape (2010), “Contemporary Issues and Geography”,Atharva ,Pune.

CBCS PATTERN TYBA GEOGRAPHY

**Semester V**  
**Geography of Tourism- I CC1E(No. of Credits: 03)**

**Objectives:**

- 1) To understand the history of Tourism
- 2) To introduce the students to the basic concepts in Tourism Geography.
- 3) To understand the types of Tourism
- 4) To gain knowledge different aspects of Tourism Geography.

Sr. No.	Topic	Sub Topic & Learning Point	No. of Lectures
1	Introduction	a) Definition and Nature <ol style="list-style-type: none"> <li>i. Definition of Tourists and Tourism</li> <li>ii. Nature of Tourism</li> <li>iii. Importance of Tourism</li> </ol> b) Scope and Extent <ol style="list-style-type: none"> <li>i. Tourism and Travel as basic needs of mankind.</li> <li>ii. Tourism and Development.</li> <li>iii. Tourism as product</li> </ol> c) Role of Geography in Tourism	12
2	Determinants of Tourism Development	a) Physical <ol style="list-style-type: none"> <li>i. Relief</li> <li>ii. Climate</li> <li>iii. Forest</li> </ol> b) Socio-Cultural <ol style="list-style-type: none"> <li>i. Religious</li> <li>ii. Historical</li> <li>iii. Sports</li> </ol> c) Political --i) Policies ii) Safety of Tourists iii) Accessibility	12
3	Concept and Classification of Tourism	a) Classification of tourism based on <ol style="list-style-type: none"> <li>i. Nationality</li> <li>ii. Travel Time</li> <li>iii. Purpose</li> </ol> b) Concept of Tourism - I <ol style="list-style-type: none"> <li>i. Agro-Tourism</li> <li>ii. Eco- Tourism</li> <li>iii. Wildlife Tourism</li> </ol> c) Concept of Tourism - II <ol style="list-style-type: none"> <li>i. Health/medical Tourism</li> <li>ii Sports Tourism</li> </ol>	12
4	Basic Infrastructure in Tourism	a) Mode of Transportation <ol style="list-style-type: none"> <li>i) Road ii) Railiii) Water iv)Air</li> </ol> b) Communication <ol style="list-style-type: none"> <li>i. Role of Guide in tourism development</li> <li>ii. Internet/Telephone/Mobile/TV</li> <li>iii. Electronic and Printing Media</li> </ol> c) Travel and Tourism Agencies	12



**Reference Books**

1. Geography of Tourism: Robinson H. (1996)
2. Tourism Development, Principles and Practices: Bhatia A.K., Sterling Publisher Ltd., New Delhi
3. Geography of Tourism and Recreation: S. N. Singh (1985)
4. Tourism Today: A Geographical Analysis: Douglas Pearce (1987)
5. Tourism: Economic Physical and Social Impact: Mathieson A. and Wall C, Logman, U.K.
6. India: A Tourist Paradise: Manoj Das.
7. Tourism Today: An Indian Perspectives: Maneet Kumar
8. Geography of Travel and Tourism: Hudman L.E.
9. Successful Tourism Management: Seth P.N. (1985) Sterling Publisher Ltd., New Delhi.
10. Tourism Analysis: Smith S.L.J.
11. Tourism in India: Gupta V.K.
12. Dynamics of Tourism: Kaul R. N., Sterline Publisher Ltd.
13. Geography of Tourism: S.B. Shinde, Phadke Prakashan, Kolhapur 2

**Semester V**  
**Geography of India -I DSE 1 C(No. of Credits: 03)**

**Objective:**

1. To acquaint the students with geography of our Nation.
2. To make the student aware of the magnitude of problems and Prospects at National level.
3. To help the students to understand the inter relationship between the subject and the society.
4. To help the students to understand the recent trends in regional studied

Sr. No	Unit	Subunit	No. of Lectures
1	Introduction	a) Location and Extent b) Historical Background c) International boundaries of India and related issues d) States and Union territories	12
2	Physiography	a) The Northern Mountains b) The North Indian Plains c) The Peninsular Plateau d) The Costal lowlands and Islands	12
3	Drainage	a) Himalayan Rivers: The Indus , The Ganga, The Brahmaputra b) East Flowing Rivers- Mahanadi, Godavari, Krishna, Kaveri c) Major West Flowing Rivers- Narmada, Tapi, Mahi d) Minor West Flowing Rivers originating in Western Ghat	12
4	Climate Soils and Natural Vegetation	a) Various Seasons and Weather Associated with them b) Types of Soils and its Distribution c) Soil Degradation and Conservation d) Types of Natural Vegetation and its Distribution	12

**Reference Books**

1. Aher A.B., Chaodhari A. P & Chaodhari Archana. Regional Geography of India Prashant Publication Jalgaon 2015
2. Deshpande C.D: India-A Regional Interpretation Northern Book Centre, New Delhi.1992.
3. Farmer, B.H.: An Introduction to South Asia. Methuen, London, 1983.
4. Govt. of India: India - Reference Annual, 2001 Pub. Div, New Delhi, 2001.
5. Govt. of India: National Atlas of India, NATMO Publication, Calcutta..
6. Govt. of India: The Gazetteer of India. Vol I & III Publication Division, New Delhi, 1965.
7. Learmonth, A.T.A. et.al(ed.) : Man and Land of South Asia Concept, New Delhi.
8. Mitra, A.: Levels of Regional Development India Census of India, Vol I, Part I-A (i) and (ii) New Delhi, 1967.
9. Routray, J.K.: Geography of Regional Disparity Asian Institute of Technology, Bangkok, 1993.
10. Shafi, M: Geography of South Asia, McMillan & Co., Calcutta, 2000.

11. Singh, R.L.(ed.): India: A Regional Geography. National Geographical Society. India, Varanasi, 1971.
12. Spate, O.H.K. and Learmonth, A.T.A.; India and Pakistan - Land, People and Economy Methuen & Co., London, 1967.
13. P. G. Saptarshi, J. C. More, V. R. Ugale & A. H. Musmade :A Geographical Region of India : Diamond Publication (2009) (Marathi)
14. Patil S. G., Suryawanshi R. S., Pacharne S., Choudhar A. H. : Economic Geography, Atharav Prakashan, Pune. (2014) (Marathi).
15. Musmade Arjun. H., More J. C., 2015, Geography of India , Diamond, Pune.

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## Semester V

**Geography of Rural Development -I DSE 1 C( No. of Credits: 03)****Objectives:**

1. To understand the concept, nature and scope of rural development in India.
2. To overview various approaches to rural development.
3. To discuss some important issues related to rural development.
4. To study various schemes and policies for rural health in India.

Sr. No.	Topic	Sub Topic	Learning Points	No. of Lectures
1	Introduction	Nature and Scope	a) Concept of Rural Development b) Definition and meaning of rural development c) Causes of Rural Backwardness d) Nature and Scope of Rural Development in India	12
2	Approaches to Rural Development in India	Approach	a) Gandhian Approach b) Decentralized Planning Approach c) Sectoral Approach d) Participatory Approach	12
3	Issues of Rural Development	Issues	a) Lack of safe drinking water b) Rural Sanitation Problems and Programs c) Green revolution and its benefits to Urban and Rural Sectors d) Urban-Rural Divide	12
4	Rural Health	Health Care and Services	a) Health Care Services in Rural Areas b) Maternal and Child Health c) National Health Policy of India d) National Rural Health Mission	12

**Reference Books**

1. Vasant Desai: Rural Development in India, Himalaya Publishing House, Mumbai, 2012.
2. Singh, R.B. (1985): *Geography of Rural Development*. New Delhi, India: Inter India.
3. Mukherjee, Neela. (1993). *Participatory Rural Appraisal: Methodology and Application*. Delhi, India: Concept Pubs. Co.
4. Rural Development Satya Sundaram, Himalaya publication House Mumbai
5. Indian economy R. D. Sudharam Chand and co. Ramnagar New Delhi.
6. Commercial Geography Dr. B.S.Nagi. KedarnathRamnath publications Meerut,
7. Human Resource Development T.Y. Rao SAGE Publication New Delhi.
8. Katar Singh -Rural Development –Principles, Policies and Management.
9. Agricultural Geography (second edition) Jasbir singh and S.S. Dhillon Tata mc crow publication

10. Interntation Technology and Globalization S.K. Bansal APII Publishing Corp. Ansari Rd. Dayraganj Delhi.
11. Economic Geography. Sadha –Khan 8. Ruural Energy criai S. Giriappa Himalaya Publishing House Mumbai
12. Anand, Subhash. (2013). *Dynamics of Rural Development*. Delhi, India: Research India Press.
13. Mukundan,N.-Rural Development and Poverty eradication in India.
14. Krishnamurthy, J. (2000). *Rural Development - Problems and Prospects*. Jaipur, India: Rawat Publs.
15. Ramachandran, H., and Guimaraes, J.P.C. (1991). *Integrated Rural Development in Asia–Leaning fromRecent Experience*. New Delhi, India: Concept Publishing.
16. Palione, M. (1984). *Rural Geography*. London, UK: Harper and Row.
17. Dutt and Sundaram- Indian Economy, S.Chand Publications, New Delhi, 2013-07-02.
18. Mishra,S.K. and PuriV.K. - Economics of Development and Planning, Himalaya Publishing House, Mumbai, 2012.
19. K Vijayakumar Empowerment of weaker section future planning and strategies for Rural Development in India.
20. Shankar Chatterjee- Implementation of Rural Development.
21. Gilg A. W., 1985: An Introduction to Rural Geography, Edwin Arnold, London.
22. Misra R. P. and Sundaram, K. V. (eds.), 1979: Rural Area Development: Perspectives

**Semester V**  
**Practical Geography- I**  
**(Techniques of Spatial Analysis) DSE- 2 C**  
**(No. of Credits: 04)**

**Workload: Six Periods per week per batch consisting of 12 Students; however the last batch needs to have more than six students.**

**(Examination for the course will be conducted at the end of the semester)**

**Objective:**

1. To introduce the basic concepts and techniques of Geographical Analysis.
2. To introduce the students with SOI Toposheets and acquire the Knowledge of Toposheet interpretation.
3. To introduce the students with Weather Maps and acquire the Knowledge of its interpretation.
4. To introduce the students with Aerial Photographs and Satellite Images and acquire knowledge to interpret it .
5. To acquaint students with the spatial and structural characteristics of Practical Geography.
6. To explain the elementary and essential principles on field of practical work.

**Note:**

1. Students must check the practicals regularly and journal should be certified by practical in-charge and Head of the Department before examination.
2. Use of Map stencils, Log tables, Calculator, Computer, Statistical Tables are allowed at the time of examination.
3. Students without a certified journal should not be allowed for the practical examination.
4. Each of the practical batches needs a separate question paper.
5. Internal and External examiner should set jointly the question paper for each batch.

Sr. No.	Topic	Sub Topic & learning Points	No. of Lectures
1.	Introduction of S.O.I. Toposheet & Relief Representation	a. Introduction of Survey of India Toposheets: Marginal Information, Conventional signs and symbols and Colours in S.O.I. Toposheets. b. Types of toposheets / Indexing of toposheets c. Methods of Relief Representation i) Qualitative: Hachures, Hill shading, Layer Tint. ii) Quantitative: Contours, Form lines, Bench Marks, Spot Heights, Triangulation Mark, Relative Height (r)	15
2.	Interpretation of S.O.I.	a. Reading of SOI toposheets from plain, plateau and Mountainous region. (Minimum one	15

	Toposheets and Data generation	Toposheet per region) b. One day field Excursion for orientation of toposheets, observation and Identification of Geographical Features and Preparation of a Brief Report	
3.	Introduction & Interpretation Weather Maps	a. Introduction to Weather Maps b. Symbols in Daily Weather Report used by India Meteorological Department (IMD) c. Isobaric Pattern d. Reading of Weather Map from i) Summer ii) Monsoon iii) Winter Season (Minimum one weather map from each season)	15
4.	Introduction & Application of GIS & Remote Sensing Techniques	a. Definition and Components of GIS b. GIS Data Types (spatial and non-spatial), Raster and Vector data c. Introduction of Aerial Photographs & Satellite Images d. Use of Computer open source Software for GIS & RS techniques in Geography	15

**Reference Books:**

1. Ahirrao, D. Y. and Karanjkehele, E.K., 2002. Pratyakshik Bhugol, Sudarshan Publication, Nashik.
2. Buoygoot, J. 1964., An Introduction to Map work and Practical Geography, University Tutorial, London.
3. Burrough, P. A., and McDonnell, R. A., 2000. Principles of Geographical Information System, Oxford University Press.
4. Curran, P. 1989., Principles of Remote Sensing, Logman, London.
5. Dickinson, G. C., 1979, Maps and Air Photographs, Arnold Publisher, New Delhi.
6. Dr. P. G. Saptrashi and Dr. S. R. Jog., 1991, Statistical Methods (Marathi)
7. Ebdon, D., 1977. Statistics in Geography: A Practical Approach, Basil Blackwell, Oxford.
8. Kumbhar, A., 2000. Pratyakshik Bhugol, Sumeru Publications, Mumbai.
9. Lillesand, T. M. and Kiefer, R. W., 2002. Remote Sensing and Image Interpretation, John Wiley and Sons, New Delhi.
10. Lutgens, F. K. and Tarbuck, E.J., 2007. The Atmosphere. Prentice hall, Englewood Cliffs, New Jersey, USA.

11. Monkhouse, F. J. and Wilkinson, H. R. 1971. Maps and Diagrams. Methuen and Co. Ltd. London, UK.
12. Ramamurthy, K., 2006. Map Interpretation, Rex Printers, Madras.
13. Siddhartha, K., 2006. Geography Through Maps, Kisalaya Publication, Pvt. Ltd, New Delhi.
14. Singh L. R. and Singh R., 1973. Map Work and Practical Geography, Central Book Depot, Allahabad.
15. Singh R. L. and Dutt, P.K., 1968. Elements of Practical Geography, Students Friends, Allahabad.
16. Singh R. L., 2005. Elements of Practical Geography. Kalyani Publishers, New Delhi.
17. Singh, G., 2005. Map Work and Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi.
18. Strahler, A. A. and Strahler, A. N., 2002. Physical Geography. Science and Systems of the Human Environment, John Wiley & Sons, INC.
19. Strahler, A. H. and Strahler, A. N., 1992. Modern Physical Geography. John. Wiley & Sons, INC.
20. डॉ.काळे व्ही.बी. २०२१ 'प्रात्यक्षिक भूगोल' प्रशांत पब्लिकेशन, जळगाव.



**Semester V**  
**SEC 2 C**  
Value/Skill based Course  
**Research Methodology - I**  
CREDIT - 2

**Objectives:**

1. To develop the understanding of the basic concept of research
2. To develop the understanding of the basic framework of sampling and data collection
3. To develop the understanding of various sampling methods and techniques

Topic No.	Topic	Sub-Topic	No. of Lectures
1	Introduction to Research Methodology	i. Meaning and objectives of research ii. Characteristics of Research iii. Types of Research iv. Various steps in Research Process	10
2	Research Design	i. Introduction of Research Design ii. Purpose of Research Design iii. Characteristics of Good Research Design	10
3	Research Problem	i. Definitions of the Research Problem ii. Identification of a Research Problem iii. Technique involved in defining a problem	10

**References**

1. Montello Daniel R. and Sutton Paul C. (2006) – Introduction to scientific research Methods of Geography. By Saga Publication
2. Kothari, C. R. (2004) – Research Methodology -Methods and techniques, New Age.
3. Mishra, H.N. and Sing, V.P. (1998)- research Methodology in Geography, Rawat Publication
4. Clifford, N. Fresh S, Valentine, G. (2010) - Key Methods in Geography, Saga Publication
5. Gregory, K. J. (2000) – The changing Nature of Physical Geography, Arnold, London
6. Gomez basil and Jones, III John Paul (editor) (2010) – Research Methods in geography : A Critical, Wiley – Blackwell
7. Harvey, David (1971) – Explanation in Geography, Edward Arnold, London
8. Chorley, R. J. and P. Haggett(ed) (1967) – Models in Geography, Methuen

**Semester VI**

T.Y.B.A. (Geography) Choice Based Credit System Syllabus

be implemented from Academic Year 2021-2022

Paper Code	Semester	Paper	Subject
Gg: 310(B)	VI	CC1F	Geography of Disaster Management-II OR Geography of Tourism -II
Gg: 320(B)	VI	DSE 1D	Geography of India -II OR Geography of rural development -II
Gg: 301(B)	VI	DSE 2D	Practical Geography – II (Techniques of Spatial Analysis, Surveying and Excursion / Village / Project Report
(Value/skill based course)		SEC 2 D	Research Methodology – II

**Semester VI****Geography of Disaster Management-II CC1F (No. of Credits: 03)**

Sr. No.	Topic	Learning Points	No. of Lectures
1	Geological and Geomorphic disasters and their management	a) Earthquakes b) Landslides c) Tsunami	12
2	Anthropogenic disasters and their management	a) Deforestation b) Forest fire c) Soil degradation	12
3	Global Environmental issues	a) Global warming b) Ozone depletion c) Acid rain	12
4	Case Studies of disaster	a) Tsunami in Indian ocean -2004 b) Fukushima Nuclear disaster -2011 c) Kedarnath Cloud Burst -2013	12

**Reference books:**

- Alexander, D. (1993): Natural Disasters. UCL Press Ltd., London
- Bloom, A.L., 1998. Geomorphology. A Systematic Analysis of Late Cenozoic Landforms. Pearson Education (Singapore) Pte. Ltd.
- Chandna, R. C., 2000. A Geography of Population, Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.

- Copola P Damon, 2007, Introduction to International Disaster Management
- Cuny, F. 1983, Development and Disaster, Oxford University Press.
- Govt. of India, 2005, Disaster Management Act Government of India, New Delhi.
- Hamblin, W.K., 1989. The Earth's Dynamic Systems, Macmillan Publishing Company, New York.
- Huggett, D.A., 2004. Fundamentals of Biogeography, Routledge.
- Kale, V.S. and Gupta, A., 2001. Introduction to Geomorphology, Orient Longman, Calcutta.
- Knox, P. and Agnew J., 1998. The Geography of the World Economy, Arnold, London.
- Lutgens, F.K. and Tarbuck, E.J., 2007. The Atmosphere. Prentice Hall, Englewood Cliffs, New Jersey, USA.
- Ross, D. A., 1988. Introduction to Oceanography. Prentice Hall, New Jersey.
- Saptarshi P. G., More J. C., Ugale V. R. and Arjun Musmade (2009), "Geography and Natural Hazard" Diamond, Pune.
- Savindra Singh, (2000): Environmental Geography. PrayagPustakBhavan, Allahabad
- Singh, S., 1998. Geomorphology, PrayagPustakBhavan, Allahabad.
- Strahler, A.A. and Strahler, A. N., 2002. Physical Geography: Science and Systems of the Human Environment, John Wiley and Sons, INC.
- A.H.Choudhar ,P.N.Salve, S.M.Kadam.R.H.Choudhar,V.C.Ithape (2010), "Contemporary Issues and Geography",Atharva ,Pune.
- Musmade Arjun. H., More J. C., 2014, Geography of Disaster Management, Diamond, Pune.

## Geography of Tourism- II CC1F(No. of Credits: 03)

### Objectives:

1. To understand the history of Tourism
2. To introduce the students to the basic concepts in Tourism Geography.
3. To understand the types of Tourism
4. To gain knowledge different aspects of Tourism Geography.

Sr. No.	Topic	Sub Topic & Learning Point	No. of Lectures
1.	Role of Accommodation in Tourism	a) Accommodation Types <ol style="list-style-type: none"> <li>i. Hotels, Motels, Inn, Dharmashalas</li> <li>ii. Govt. Accommodation, Tourist homes</li> <li>iii. Private accommodations and unrecognized accommodations</li> </ol> b) Factors affecting choice of Accommodation c) Role of Accommodation in Tourism Development	12
2.	Impact of Tourism	a) Economic impact <ol style="list-style-type: none"> <li>i. Effect on foreign exchange</li> <li>ii. Employment generation</li> <li>iii. Infrastructure development</li> </ol> b) Physical and Environmental impacts <ol style="list-style-type: none"> <li>i. Land Degradation</li> <li>ii. Loss of plant and animal life</li> <li>iii. Air and water pollution</li> </ol> c) Social cultural impacts <ol style="list-style-type: none"> <li>i. Crime and Gambling activities</li> <li>ii. Languages</li> <li>iii. Traditional arts</li> </ol>	12
3.	Planning and Policies of tourism development	a) World Tourism Organization (WTO) b) India Tourism Development Corporation (ITDC) c) Maharashtra Tourism Development Corporation (MTDC)	12
4.	Case studies of Major Tourist Centers in India	a) Hill Station- Manali and Mahabaleshwar b) Historical- Tajmahal and Raigadh fort c) National Parks- Kaziranga, Melghat	12

### Reference Book

1. A Geography of Tourism: Robinson H. (1996)
2. Tourism Development, Principles and Practices: Bhatia A.K., Sterling Publisher Ltd., New Delhi
3. Geography of Tourism and Recreation: S. N. Singh (1985)
4. Tourism Today: A Geographical Analysis: Douglas Pearce (1987)

5. Tourism: Economic Physical and Social Impact: Mathieson A. and Wall C, Logman, U.K.
6. India: A Tourist Paradise: Manoj Das.
7. Tourism Today: An Indian Perspectives: Maneet Kumar
8. Geography of Travel and Tourism: Hudman L.E.
9. Successful Tourism Management: Seth P.N. (1985) Sterling Publisher Ltd., New Delhi.
10. Tourism Analysis: Smith S.L.J.
11. Tourism in India: Gupta V.K.
12. Dynamics of Tourism: Kaul R. N., Sterline Publisher Ltd.
13. Geography of Tourism: S.B. Shinde, Phadke Prakashan, Kolhapur 2

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**Semester VI**  
**Geography of India -II DSE1 D(No. of Credits: 03)**

**Objective:**

1. To acquaint the students with geography of our Nation.
2. To make the student aware of the magnitude of problems and Prospects at National level.
3. To help the students to understand the inter relationship between the subject and the society.
4. To help the students to understand the recent trends in regional studied

Sr. No	Unit	Subunit	No. of Lectures
1	Cultural Setting	a) Religions of India b) Languages of India c) Major tribes, tribal areas and their problems	12
2	Transportation & Communication	a) Role of Transportation in regional development of India b) Land ways, Airways and Waterways c) Developments in communication technology	12
3	Resources	a) Iron ore and Manganese b) Coal and Petroleum c) Hydro and Thermal Power	12
4	Agriculture	a) Significance of agriculture in Indian Economy. b) Agro Based Industries: Sugar, Cotton & Textile c) Agriculture Revolution in India: Green, White & Blue	12

**Reference Books**

1. Aher A.B , Chaodhari A. P & Chaodhari Archana. Regional Geography of India Prashant Publication Jalgaon 2015
2. Deshpande C.D: India-A Regional Interpretation Northern Book Centre, New Delhi.1992.
3. Farmer, B.H.: An Introduction to South Asia. Methuen, London, 1983.
4. Govt. of India: India - Reference Annual, 2001 Pub. Div, New Delhi, 2001.
5. Govt. of India: National Atlas of India, NATMO Publication, Calcutta..
6. Govt. of India: The Gazetteer of India. Vol I & III Publication Division, New Delhi, 1965.
7. Learmonth, A.T.A. et.al(ed.) : Man and Land of South Asia Concept, New Delhi.

8. Mitra, A.: Levels of Regional Development India Census of India, Vol I, Part I-A (i) and (ii) New Delhi, 1967.
9. Routray, J.K.: Geography of Regional Disparity Asian Institute of Technology, Bangkok, 1993.
10. Shafi, M: Geography of South Asia, McMillan & Co., Calcutta, 2000.
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12. Spate, O.H.K. and Learmonth, A.T.A.; India and Pakistan - Land, People and Economy Methuen & Co., London, 1967.
13. P. G. Saptarshi, J. C. More, V. R. Ugale & A. H. Musmade :A Geographical Region of India : Diamond Publication (2009) (Marathi)
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15. Musmade Arjun. H., More J. C., 2015, Geography of India , Diamond, Pune.

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**Semester VI****Geography of Rural Development II DSE 1 D (No. of Credits: 03)****Objectives-**

1. To study the problems and policies related to education in rural areas.
2. To create awareness among the students about various area development programmes and Target Group Programmes implemented in India.
3. To create a positive approach for rural development among the students through the examples of successful case studies.

Sr. No.	Topic	Sub Topic	Learning Points	No. of Lectures
1	Education in Rural Areas	Problems	a) Problems in School Education b) School Dropouts c) Girl Child Education d) Sarva Siksha Abhiyan: National Literacy Mission	12
2	Area Development Programmes:	Programmes	a) Drought Prone Area Programme b) Command Area Development Programme c) Desert Development Programme d) Hill Area Development Programme	
3	Target Group Programmes	Programmes	a) Suwarnajayanti Gram Swoyam rojgar Yojana b) National Rural Livelihoods Mission c) Micro Finance d) Self-help Groups for Women Empowerment	12
4	Case Studies:	Case Studies	a) Study of a successful case: Hivare Bazar b) Study of successful case: Mendhalekha c) study of people's movement: Farmers' agitation against New laws, Chipco movement d) Study of your own village, to highlight issues and remedial measures of Rural area development	12

**Reference Books**

1. Vasant Desai: Rural Development in India, Himalaya Publishing House, Mumbai, 2012.
2. Singh, R.B. (1985): *Geography of Rural Development*. New Delhi, India: Inter India.



3. Mukherjee, Neela. (1993). *Participatory Rural Appraisal: Methodology and Application*. Delhi, India: Concept Pubs. Co.
4. Rural Development Satya Sundaram, Himalaya publication House Mumbai
5. Indian economy R. D. Sudharam Chand and co. Ramnagar New Delhi.
6. Commercial Geography Dr. B.S.Nagi. KedarnathRamnath publications Meerut,
7. Human Resource Development T.Y. Rao SAGE Publication New Delhi.
8. Katar Singh -Rural Development –Principles, Policies and Management.
9. Agricultural Geography (second edition) Jasbir singh and S.S. Dhillon Tata mc crow publication
10. Interntation Technology and Globalization S.K. Bansal APII Publishing Corp. Ansari Rd. Dayraganj Delhi.
11. Economic Geography. Sadha –Khan 8. Ruural Energy criai S. Giriappa Himalaya Publishing House Mumbai
12. Anand, Subhash. (2013). *Dynamics of Rural Development*. Delhi, India: Research India Press.
13. Mukundan,N.-Rural Development and Poverty eradication in India.
14. Krishnamurthy, J. (2000). *Rural Development - Problems and Prospects*. Jaipur, India: Rawat Pubs.
15. Ramachandran, H., and Guimaraes, J.P.C. (1991). *Integrated Rural Development in Asia–Leaning fromRecent Experience*. New Delhi, India: Concept Publishing.
16. Palione, M. (1984). *Rural Geography*. London, UK: Harper and Row.
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18. Mishra,S.K. and PuriV.K. - Economics of Development and Planning, Himalaya Publishing House, Mumbai, 2012.
19. K Vijayakumar Empowerment of weaker section future planning and strategies for Rural Development in India.
20. Shankar Chatterjee- Implementation of Rural Development.
21. Gilg A. W., 1985: An Introduction to Rural Geography, Edwin Arnold, London.
22. Misra R. P. and Sundaram, K. V. (eds.), 1979: Rural Area Development: Perspectives

**Semester VI****Practical Geography- II (Techniques of Spatial Analysis, Surveying and Excursion /Village/ Project Report) DSE- 2 D****(No. of Credits: 04)****Workload: Six Periods per week per batch consisting of 12 Students; however the last batch needs to have more than six students.****(Examination for the course will be conducted at the end of the semester)**

Sr. No.	Topic	Sub Topic & learning Points	No. of Lectures
1.	Geographical Data & its Basic Analysis	a. Introduction and Types of Geographical Data: i) Spatial and Temporal data ii) Discrete and Continuous series iii) Grouped and Ungrouped data b. Basic Analysis : i) Tally marks and frequency table ii) Frequency distribution (histogram & polygon) iii) Cumulative Frequency & Ogive curve	15
2.	Calculation of Central Tendency, & Dispersion	a. Meaning and description of central tendencies- Mean, Mode, Median b. Calculation of Mean, Mode, Median for ungrouped and grouped data (two examples each) c. Measures of Dispersion: Mean Deviation & Standard Deviation (two examples each)	15
3.	Testing and Application of Hypothesis	a) Meaning, Definition of Hypothesis & Types of Hypothesis i) Null & Alternative hypothesis ii) Level of significance, iii) Degree of freedom b) Concept of Correlation and regression I. Concept of bivariate correlation & Regression II. Meaning of coefficient of correlation III. Parametric & Non parametric tests: i) Chi-square test (two examples each) IV. Calculation of Spearman Rank order (Min. two examples for each test)	15
4.	Field Excursion / Village Survey / Project Report	a. One Short tour of two days duration and preparation of tour report <b>OR</b> b. One long Tour of more than Five days duration anywhere in the country and preparation of tour report <b>OR</b> c. Village / City / Area Survey and preparation of report	15

**Reference Books:**

1. Acevedo, M. F., 2012. Data Analysis and Statistics for Geography, Environmental Science and Engineering, CRC Press.
2. Ahirrao, D. Y. and Karanjkehele, E.K., 2002. Pratyakshik Bhugol, Sudarshan Publication, Nashik.
3. Creswell J., 1994. Research Design: Qualitative and Quantitative Approaches, Sage Publications.
4. Dikshit, R. D., 2003. The Art and Science of Geography: Integrated Readings. Prentice-Hall of India, New Delhi.
5. Hammond, R. and McCullagh, P. S., 1977. Quantitative Techniques in Geography: An Introduction, Clarendon Press, Oxford.
6. Harris, R., Jarvis, C. 2011. Statistics for Geography and Environmental Science, Prentice Hall.
7. Jog. S. R. and Saptarshi, P. G., 1980. Sankhikhi Bhugol, Narendra Publication, Pune.
8. Karlekar, S. N. and Kale, M., 2006. Statistical Analysis of Geographical Data, Diamond Publication, Pune.
9. Kumbhar, A., 2000. Pratyakshik Bhugol, Sumeru Publications, Mumbai.
10. Mc Grew Jr., J. C., Lembo Jr., A. J., Monroe, C. B. 2014. An Introduction to Statistical Problem solving in Geography, 3<sup>rd</sup> ed, Waveland Press.
11. Pal. S. K., 1998. Statistical Methods for Geoscientists: Techniques and Applications, Concept Pub.co.
12. Robinson, A., 1998. "Thinking Straight and Writing That Way", in Writing Empirical Research Reports: A basic guide for students of the Social & Behavioral Sciences, eds. By F. Pryczak & R. Bruce Pryczak, Publishing, Los Angeles.
13. Rogerson, P. A., 2015. Statistical Methods for Geography: A Student's Guide, 4<sup>th</sup> ed, Sage.
14. Sarkar, A. 2015. Practical Geography: A Systematic Approach, 3<sup>rd</sup> ed, Orient Blackswan.
15. Singh R. L. and Dutt, P.K., 1968. Elements of Practical Geography, Students Friends, Allahabad.
16. Singh R. L., 2005. Elements of Practical Geography. Kalyani Pubishers, New Delhi.

17. Stoddard, R. H., 1982. Field Techniques and Research Methods in Geography, Kendall/Hunt.
18. Wokcatt, H. 1995. The Art of Fieldwork, Alta Mira Press, Walnut Creek, CA.
19. डॉ. प्रवीण सप्तर्षी, सांख्यिकी भूगोल , नीराली प्रकाशन, पुणे.
20. डॉ.काळे व्ही.बी. २०२१ 'प्रात्यक्षिक भूगोल' प्रशांत पब्लिकेशन, जळगाव.

CBCS PATTERN TYBA GEOGRAPHY

**Semester VI**  
SEC 2 D  
Value/ Skill based Course  
**Research Methodology – II**  
CREDIT - 2

**Objectives:**

1. To identify various sources of information for data collection.
2. Understanding of the conducting survey on various issues and develop the Report writing skill of students

Sr. No.	Topic	Sub-Topic	No. of Lectures
1	Methods of Data Collection	<b>A) Primary Data</b> Questionnaire Method i.) Questionnaire – definition ii.) Characteristics of a good questionnaire iii.) Merits and demerits Questionnaire Method <b>B) Secondary Data</b> i) Government Sources ii) Syndicated Sources iii) Other Types of Sources	10
2	Types of Research Report	i. Dissertation and Thesis, ii) Research paper, review article iii) Characteristics of Good Research Report Writing	10
3	Techniques of Research Report Writing	i) Structure and organization of research reports: Title, abstract, key words, introduction ii) Methodology, results, discussion, conclusion, references, footnotes, iii) Concepts of Case Study	10

**References**

1. Gaum, Carl G., Graves, Harold F., and Hoffman, Lyne, S.S., (1950): Report Writing, 3rd ed., New York: Prentice-Hall.
2. Kothari, C.R. (2004): Research Methodology: Methods and Techniques, New Age

- International (P) Ltd., New Delhi – 110002.
3. Kothari, C.R., (1984): Quantitative Techniques, 2nd ed., New Delhi: Vikas Publishing House Pvt. Ltd.
  4. Mishra Shanti Bhushan and Shashi A. (2011): Handbook of Research Methodology, Education Publishing, New Delhi – 110075.
  5. Pandey, P. and Pandey, M.M. (2015): Research Methodology: Tools and Techniques, Bridge Center, Romania, European Union.
  6. Tandon, B.C., (1979): Research Methodology in Social Sciences. Allahabad, Chaitanya Publishing House.
  7. Ullman, Neil R. (1978): Elementary Statistics, New York: John Wiley & Sons, Inc.
  8. Yamane, T., Statistics (1973): An Introductory Analysis, 3rd ed., New York: Harper and Row.

CBCS PATTERN TYBA GEOGRAPHY



# **SAVITRIBAI PHULE PUNE UNIVERSITY**

(Formerly University of Pune)

## **T.Y.B.A. Economics Syllabus**

(Choice Based Credit System and Semester System)

**Revised Syllabus will be implemented with effect from the  
academic year 2021-2022**

# T.Y.B.A. Economics

(Sem V & VI)

Semester	Paper Name	Subject Code	Title of the Paper
V	Economics General - III		Indian Economic Development- I
	Economics Special - III		International Economics-I
	Economics Special - IV		Public Finance- I
	Skill Enhancement Course (SEC-3A)		Business Management- I
VI	Economics General - III		Indian Economic Development- II
	Economics Special - III		International Economics- II
	Economics Special - IV		Public Finance- II
	Skill Enhancement Course (SEC-3A)		Business Management- II (Project Report)



**T.Y.B.A. Economics**  
**General Paper-III: Indian Economic Development-I**  
**(Course Code:     )**  
**Semester V**

**Preamble:**

The course will be useful for learners aiming towards careers in the government sector, policy analysis and the social sector. This course would take an overview of aspects of economic development with special reference to India.

The course aims to introduce the learner to the main concepts in economic and human development, equip them compare and contrast different economies: recognize various indicators of economic and human development. The course will also provide a broad outline of the Sustainable Development Goals.

**Course Learning Outcomes**

At the end of the course the learner will have ability -

- To relate and recognize the concept and indicators of Economic Development.
- To describe and analyze the concept and indicators of Human Development.
- To explain the characteristics of Developing and Developed Countries.
- To describe the constraints to the process of Economic Development.

Unit No.	Name and Sub Titles of the Topic	No. of Lectures
1	<b>Economic Development and Growth</b>	10
	1.1 Economic Development: Meaning, Definition and Indicators	
	1.2 Economic Growth: Meaning, Definition and Indicators	
	1.3 Need and Importance of Economic Development	
2	<b>Developed and Developing Countries</b>	14
	2.1 Concepts of Developed and Developing Countries	
	2.2 Characteristics of Developed Countries	
	2.3 Characteristics of Developing Countries : Economic, Demographic, Technological, Social and Political	
	2.4 India as an Emerging Economy	
3	<b>Constraints to Development Process</b>	12
	3.1 Vicious Circle of Poverty	
	3.2 Capital Constraints	
	3.3 Technology Constraints	
	3.4 Socio- Cultural Constraints	
	3.5 Political and Administrative Constraints	
	3.6 External Bottlenecks	
4	<b>Human Resources and Economic Development</b>	12
	4.1 Role of Human Resources in Economic Development	
	4.2 Human Development Index and India	
	4.3 Concepts of Physical Quality of Life Index:	
	4.3.1 Gender Development Index 4.3.2 Gender Inequality Index 4.3.3 Multidimensional Poverty Index	

### **Recommended Books -**

- Ragnar Nurkse, Problem of Capital Formation in Underdeveloped Countries.
- Sen Amartya (1970), Growth Economics, Penguin.
- Zhingan M.L.(1982), The Economics of Development and Planning. Vrinda Publication (P) Ltd.
- Adelman, I. (1961), Theories of Economic Growth and Development, Stanford University Press, Stanford.
- Avhad Suhas (2015), 'Economics of Growth and Development' (Marathi Edition) Success Prakashan, Pune
- Behrman, S. and T.N.Srinivasan,(1995) Handbook of Development Economic, Vol. 1 to 3, Elsevier, Amsterdam,
- Chenery H. and T.N.Srinivasan, (1989) Handbook of Development Economics Vol1&2, Elsevier. Amsterdam.
- Dasgupta p. (1993) An Enquiry into Well Being and Destitution.
- Dhage S.K. (2015), Indian Economy ( Marathi Edition) K.S. Publication, Pune.\
- Wavare A. (2017), Development and Planning Economics (Vikas va Niyojanache Arthshastra - Marathi Edition )
- Datir R.K.(2013), Vikas ani Paryavarniy Arthshastra, Nirali Prakashan, Pune.
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- Ghatak,S.(1986), An Introduction to Development Economics,Allen and Unwin, London,
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- Grillis M., D H. Perkins, M.Romer and D.R.Snodgrass (1992) Economic of Development (3rdEdition) W.W.Norton, New York.
- Patil J.F.(2014),Growth And Development economics (Vruddhi Va Vikasache Airthshastra, Phadke Prakashan - Marathi Edition)
- Higgins, Benjamin. (1959) Economic Development, W.W.Norton , New York
- Jennifer A. Elliott, (2013), An Introduction to Sustainable Development (Fourth Edition), Routledge Publication, London and New York.
- Kindleberger C.P.(1977),Economic Development (3rd Edition ) McGraw Hill, New York.
- Jagdish Bhagwati,The Economics Of Underdeveloped Countries.
- Mahata J.K.(1964) Economic of Growth, Asia.
- Meaer and Baldwin(1970) Economic Development, Asia .
- Mehata J.K.(1971) Economic Development , Chaitanya.
- Kute Santosh and Rithe (2019) ,Demography , Prashant Publication Jalgaon.
- Mishra &Puri, Development and Planning- Theory And Practice, Himalaya.
- Meier, G.M. (1995) Leading Issue in Economic Development,6ed,Oxford University Press ,New Delhi,
- Todaro M.P. (1996) Economic Development (6th Edition) Longman, London.
- UNDP, Human Development Report [Latest]
- World Development Reports
- India Development Reports

**T.Y.B.A. Economics**  
**General Paper- III: Indian Economic Development-II**  
**(Course Code:     )**

**Semester VI**

**Preamble:**

This course would take an overview of the process of Economic Planning and the Development Goals. The course aims to introduce the learner to the main concepts in Economic Planning, equip them with understanding of the planning process in India and changing in recent times and familiarize them to the Sustainable Development Goals. The Course also reviews the relation between Economic Development and Environment.

**Course Learning Outcomes**

At the end of the course the learner will have ability-

- To describe and explain the process of Economic Planning.
- To describe and examine the changing structure of planning process in India.
- To describe and explain the relation between Economic Development and Environment.

Unit No.	Name and Sub Titles of the Topic	No. of Lectures
1	<b>Economic Planning</b>	12
	1.1 Economic Planning – Meaning, Definition and Features	
	1.2 Need of Economic Planning	
	1.3 Objectives of Economic Planning in India	
2	<b>National Institution for Transforming India Aayog (NITI Aayog)</b>	12
	2.1 NITI Aayog- Objectives and Structure	
	2.2 Role of NITI Aayog	
	2.3 Difference between Planning Commission and NITI Aayog	
3	<b>Sustainable Development</b>	12
	3.1 Sustainable Development : Meaning and Importance	
	3.2 17 SDGs (Sustainable Development Goals)	
	3.3 Measures for Sustainable Development	
	3.4 Current Scenario of SDG in India	
4	<b>Environment and Economic Development</b>	12
	4.1 Relation between Environment and Economic Development	
	4.2 Environment and Sustainable Development	
	4.3 Environmental Policies in India: 4.3.1 National Conservation Strategy (1992) - Highlights 4.3.2 National Environmental Policy (2006) - Highlights	
	4.4 Global Warming	

### **Recommended Books -**

- Ragnar Nurkse, Problem of Capital Formation in Underdeveloped Countries.
- Sen Amartya (1970) Growth Economics, Penguin.
- Zinghan M.L. (1982) the Economics of Development and Planning. Vrinda Pub.(P) Ltd.
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- Higgins, Benjamin. (1959) Economic Development, W.W.Norton , New York
- Jennifer A. Elliott, (2013), an Introduction to Sustainable Development (Fourth Edition), Routledge Publication, London and New York.
- Kindleberger C.P. (1977) Economic Development (3rd Edition) McGraw Hill, New York.
- Jagdish Bhagwati,The Economics Of Underdeveloped Countries.
- Mahata J.K. (1964) Economic of Growth, Asia.
- Meaer and Baldwin (1970) Economic Development, Asia .
- Mehata J.K.(1971) Economic Development , Chaitanya.
- Mishra &Puri, Development and Planning- Theory And Practice, Himalaya.
- Meier, G.M. (1995) Leading Issue in Economic Development,6ed,Oxford University Press ,New Delhi,
- Todaro M.P. (1996) Economic Development (6th Edition) Longman, London.
- UNDP, Human Development Report [Latest]
- World Development Reports
- India Development Reports

**T.Y.B.A. Economics**  
**Special Paper - III: International Economics-I**  
**(Course Code:     )**

**Semester - V**

**Preamble:**

This course provides the students a thorough understanding and deep knowledge about the concept of international economics and international trade. The contents of the paper spread over various modules, lay stress both on theory and applied nature of the subject. Besides this, the contents prepare the students to know the important theories of international trade. The paper also covers the meaning, types, importance of terms of trade and causes of unfavorable terms of trade to developing countries like India.

**Course Learning Outcomes**

At the end of the course the learner will have Ability

- To relate and recall the concepts of International Economics and International Trade.
- To describe and apply the theories of international trade.
- To explain and comprehend the issues relating to Terms of trade and Balance of Payment.

Unit No.	Name and Sub Titles of the Topic	No. of Lectures
1	<b>Introduction</b>	12
	1.1 International Economics- Meaning, Scope and Importance	
	1.2 Inter-regional and International Trade	
	1.3 Importance of International Trade	
2	<b>Theories of International Trade</b>	12
	2.1 Theory of Absolute Cost Advantage and Theory of Comparative Cost Advantage	
	2.2 Heckscher-Ohlin Theory	
	2.3 Leontief's Paradox	
	2.4 Intra-Industry Trade	
3	<b>Terms of Trade</b>	12
	3.1 Meaning, Types and Importance of Terms of trade	
	3.2 Determinants of Terms of trade	
	3.3 Causes of Unfavorable Terms of trade to Developing Countries	
4	<b>Balance of Payments</b>	12
	4.1 Balance of trade and Balance of payments- Concepts	
	4.2 Balance of payments - Components	
	4.3 Disequilibrium of Balance of Payments, Causes and Consequences	
	4.4 Measures to correct Disequilibrium in the Balance of Payments	

### **Recommended Books -**

1. Kenan, P.B. (1994), the International Economy, Cambridge University Press, London.
2. Kindlberger, C.P. (1973), International Economics, R.D. Irwin, Homewood.
3. Krugman, P.R. and M. Obstfeld (1994), International Economics: Theory and Policy, Glenview, Foresman.
4. Salvatore, D.L. (1997), International Economics, Prentice-Hall, Upper Saddle River, N.J.
5. Sodersten, Bo (1991), International Economics, Macmillan Press Ltd., London.
6. International Economics, M.L. Jhingan
7. Bhagwati, J. (Ed.) (1981), International Trade, Selected Readings, Cambridge University Press, Mass.
8. Greenaway, D. (1983), International Trade Policy, Macmillan Publishers Ltd., London.
9. Joshi V. and I.M.D. Little (1998), India's Economic Reforms, 1999-2001, Oxford University Press, Delhi.
10. Panchmukhi, V.R. (1978), Trade Policies of India: A Quantitative Analysis, Concept Publishing Company, New Delhi.
11. Dhage S.K. (2015), International Economics ( English Edition ) K.S. Publication, Pune.
12. Kulkarni B.D. and Dhamdhare S.V. (2007), International Economics (Antarrashtriya Arthashastra - Marathi Edition ) Dimand Publication, Pune.
13. Wavare A. , International Economics ( Anatarrashtriya Arthashastra - Marathi Edition ) Education Publication, Aurangabad
14. Patel, S.J. (1995), Indian Economy towards the 21st Century, University Press Ltd., India.
15. Rasal, Rajendra, International Economics (Marathi), Success Publication Pune.

### **Reports:**

1. Ministry of Commerce and Industry, Government of India, Recent Annual Report
2. Government of India, Economic Survey Latest
3. Reserve Bank of India, Annual Report

**T.Y.B.A. Economics**  
**Special Paper - III: International Economics-II**  
**(Course Code:     )**

**Semester – VI**

**Preamble:**

This course provides the students a thorough understanding and deep knowledge about India's foreign trade and trade policies. The contents of the paper spread over various modules, lay stress both on theory and applied nature of the subject that have registered rapid changes during the last few decade. Besides this, the contents prepare the students to know the foreign exchange market, provisions in FEMA and convertibility of rupee. The paper also covers the Indian government's policy towards foreign capital and role of multinational corporations in India and regional and international co-operation. This paper has become relatively more relevant from the policy point of view under the present waves of globalization and liberalization.

**Course Learning Outcomes:**

At the end of the course, the learner will have-

- Ability to relate and explain the concept of Exchange Rate and Foreign Exchange Market.
- Ability to describe the trends in Growth, Composition and Direction of India's Foreign Trade.
- Ability to comprehend the issues relating to Foreign Capital and Regional and International Co-Operation.

Unit No.	Name and Sub Titles of the Topic	No. of Lectures
1	<b>India's Foreign Trade and Policy</b>	12
	1.1 Role of Foreign Trade in Economic Development	
	1.2 India's Foreign Trade- Growth, Composition and Direction since 2000	
	1.3 Free Trade v/s Protection - Case For and Case Against	
	1.4 Highlights of India's Foreign Trade policy Since 2015	
	1.5 Evaluation of Policy of Special Economic Zones in Export Promotion	
2	<b>Foreign Capital</b>	12
	2.1 Role of Foreign Capital in Economic Development	
	2.2 Types of Foreign Investment	
	2.3 Foreign Investment Policy in India since 1991	
	2.4 Problems of Foreign Capital	
3	<b>Foreign Exchange</b>	12
	3.1 Exchange Rate : Concept; Fixed & Flexible Exchange Rate -Merits and Demerits	
	3.2 Foreign Exchange Market- Meaning, Structure and Functions	
	3.3 Convertibility of the Rupee	
	3.4 Foreign Exchange Management Act, 1999, Main Provisions	
4	<b>Regional and International Co-operation: Nature and Functions of-</b>	12
	4.1 South Asian Association for Regional Cooperation (SAARC)	
	4.2 Brazil, Russia, India, China and South Africa (BRICS)	
	4.3 European Economic Community (EEC)	
	4.4 World Trade Organization (WTO)	

### **1. Recommended Books -**

2. Kenan, P.B. (1994), the International Economy, Cambridge University Press, London.
3. Kindlberger, C.P. (1973), International Economics, R.D. Irwin, Homewood.
4. Krugman, P.R. and M. Obstfeld (1994), International Economics: Theory and Policy, Glenview, Foresman.
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7. International Economics , M.L. Jhingan
8. Bhagwati, J. (Ed.) (1981), International Trade, Selected Readings, Cambridge University Press, Mass.
9. Greenaway, D. (1983), International Trade Policy, Macmillan Publishers Ltd., London.
10. Joshi V. and I.M.D. Little (1998), India's Economic Reforms, 1999-2001, Oxford University Press, Delhi.
11. Panchmukhi, V.R. (1978), Trade Policies of India: A Quantitative Analysis, Concept Publishing Company, New Delhi.
12. Patel, S.J. (1995), Indian Economy towards the 21st Century, University Press Ltd., India.

### **Reports:**

1. Ministry of Commerce and Industry, Government of India, Recent Annual Report
2. Government of India, Economic Survey Latest
3. Reserve Bank of India, Annual Report



**T.Y.B.A. Economics**  
**Special Paper – IV: Public Finance -I**  
**(Course Code:     )**  
**Semester – V**

**Preamble:**

The role and functions of the Government in an economy has been hanging with the passage of time. The term 'Public Finance' has traditionally been applied to involve the use of revenue and expenditure measures along with the budgetary policy is an important part to understand the basic problems of use of resources, distribution of Income etc. The course will be useful for students aiming towards careers in the government sector, policy analysis, banking and business. This course would take an overview of government finances with special reference to India. The course aims to introduce the learner to the main concepts in public finance, equip them with an analytical grasp of government taxes: direct and indirect taxes and familiarize students with the main issues in government expenditure and debt.

**Objectives:**

1. To make students to analyze the role of Public Finance in Economic Development.
2. To know the sources of Revenue, Expenditure and Debt of Govt. of India.
3. To make students competent to become success in competitive examination.

**Course Learning Outcomes**

At the end of the course the learner will have ability-

- To relate and recognize the Nature and Scope of Public Finance.
- To describe and analyze the concept of Public Revenue and its components.
- To explain types of Public Expenditure and reasons for rising Public Expenditure.
- To explain the types of Public Debt and its effects.

Unit No.	Name and Sub Titles of the Topic	No. of Lectures
1	<b>Introduction to Public Finance</b>	12
	1.1 Meaning, Nature, Scope and Importance of Public Finance	
	1.2 Public Finance versus Private Finance	
	1.3 Role of Public Finance in Economic Development	
	1.4 Principle of Maximum Social Advantage: Musgrave's Approach	
2	<b>Public Revenue</b>	12
	2.1 Sources of Public Revenue	
	2.2 Meaning of Tax, Types of Taxes- Direct Tax and Indirect Tax, Merits and Demerits	
	2.3 Goods and Service Tax: Concept and Characteristics; Need for GST in India	
	2.4 Concepts: Impact of Tax, Incidence of Tax, Shifting of Tax and Taxable Capacity	
3	<b>Public Expenditure</b>	12
	3.1 Meaning and Principles of Public Expenditure	
	3.2 Classification of Public Expenditure	
	3.3 Reason for Increasing Public Expenditure	
	3.4 Wagner's Law of Public Expenditure	

<b>4</b>	<b>Public Debt</b>	<b>12</b>
	<b>4.1</b> Meaning, Sources and Importance of Public Debt	
	<b>4.2</b> Methods of Repayment of Public Debt	
	<b>4.3</b> Burden of Public Debt	
	<b>4.4</b> The Fiscal Responsibility and Budget Management Act 2003- Highlights	

### Recommended Books

1. Andley and Sundaram- Theory and Practice of Public Finance.
2. Bhatia H.L “Public Finance “ Vikas Publishing House, 18<sup>th</sup> edition
3. Jayaram Hiregange, Deepak Rao (2017), India GST for Beginners, White Falcon Pub.
4. Government of India (2017). GST-Concept and Status
5. Singh S.K, Public Finance in Theory and Practice, S. Chand, New Delhi.
6. Ozerkar S.R.,Rajaswa (Marathi), Vidya Prakashan, Ruikar Marg Nagpur
7. Deo and Zamre, Rajaswa (Marathi) Pimpalpure and Co, Publishers, Nagpur.
8. Buchanan J. M.,, Public Principles of Public debt, Irwin, Homewood, III, USA.
9. Herber, B.P., Modern Public finance, AITBS, New Delhi.
10. Hicks Ursula (1961) “Public Finance” Digswell Place, James Nishbet & Co. Ltd.
11. Musgrave R. A. (1959) “The Theory of Public Finance: A study in Public Economics” McGraw Hill Logakwha Ltd.
12. Musgrave R. A. & Musgrave P. B “Public Finance: In Theory & Practice” McGraw Hill Logakwha Ltd.
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15. Taylor Philip C (1968) “The Economics of Public Finance” Oxford Univeristy & IBH Publishing Co.
16. Alam, S, (2016) GST and the States, Sharing tax administrations, Economic and Political Weely, 51 (31) (Article)
17. Ministry of Finance, Government of India (Oxford Press), Economic Survey 2020.
18. Dhamdhare S.V. (2019) , Sarvajanic Ayvay ( Marathi Edition ) ,Dimond Publication,Pune.
19. Khandare Vilas (2004) , Money Banking And Finance, Ravi Printers ,Aurangabad .

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**T.Y.B.A. Economics**  
**Special Paper – IV: Public Finance -II**  
**(Course Code:     )**  
**Semester – VI**

**Objectives:**

1. To make students able to analyze Budget process of India.
2. To make the students aware about Role and working of Finance Commission.
3. To make students competent to become success in competitive examination.

**Course Learning Outcomes**

At the end of the course the learner will have ability

- To explain and assess the components and instruments of Fiscal Policy.
- To relate to the concepts of Budget and its components.
- To describe and analyze the concept of Deficit Financing and its effects.
- To describe and explain the Centre and State Financial Relationship.

Unit No.	Name and Sub Titles of the Topic	No. of Lectures
<b>1</b>	<b>Fiscal Policy</b>	<b>12</b>
	1.1 Fiscal Policy- Meaning, Instruments and Objectives	
	1.2 Fiscal Policy in Developing Countries	
	1.3 Limitations of Fiscal Policy	
	1.4 Review of Fiscal Policy in India Since 2011	
<b>2</b>	<b>Budget</b>	<b>12</b>
	2.1 Budget- Meaning, Nature and Objectives	
	2.2 Classification of Budget	
	2.3 Preparation of Indian Central Budget	
	2.4 Gender Budget- Meaning and Importance.	
<b>3</b>	<b>Deficit Financing</b>	<b>12</b>
	3.1 Deficit Financing- Meaning and Objectives	
	3.2 Role of Deficit Financing in Developing Countries	
	3.3 Trends in India's Deficit Financing Since 2011	
	3.4 Effects of Deficit Financing	
<b>4</b>	<b>Centre-State Financial Relationship</b>	<b>12</b>
	4.1 Centre-State Financial Relationship: Constitutional Provisions	
	4.2 Conflict in the Centre-State Financial Relationship	
	4.3 Role of the Finance Commission	
	4.4 Recommendations of 15 <sup>th</sup> Finance Commission	

**Recommended Books**

1. Andley and Sundaram- Theory and Practice of Public Finance.
2. Bhatia H.L “Public Finance “ Vikas Publishing House, 18<sup>th</sup> edition
3. Jayaram Hiregange, Deepak Rao (2017), India GST for Beginners, White Falcon Pub.

4. Government of India (2017). GST-Concept and Status
5. Bhadane Jaywant R, (2020) GST Smart Taxation System, International Publication
6. Singh S.K, Public Finance in Theory and Practice, S. Chand, New Delhi.
7. Ozerkar S.R.,Rajaswa (Marathi), Vidya Prakashan, Ruikar Marg Nagpur
8. Deo, and Zamre, Rajaswa (Marathi) Pimpalpure and Co, Publishers, Nagpur.
9. Buchanan J. M., Public Principles of Public debt, Irwin, Homewood, III, USA.
10. Herber, B.P., Modern Public finance, AITBS, New Delhi.
11. Hicks Ursula (1961) “Public Finance” Digswell Place, James Nishbet & Co. Ltd.
12. Musgrave R. A. (1959) “The Theory of Public Finance: A study in Public Economics” McGraw Hill Logakwha Ltd.
13. Musgrave R. A. and Musgrave P. B “Public Finance: In Theory & Practice” McGraw Hill Logakwha Ltd.
14. Prest, A.R. and Barr N.A., Public Finance in Theory and Practice, ELBS, London.
15. Taylor Philip C (1968) “The Economics of Public Finance” Oxford University and IBH Publishing Co.
16. Alam, S, (2016) GST and the States, Sharing tax administrations, Economic and Political Weely, 51 (31) (Article)
17. Ministry of Finance, Government of India (Oxford Press), Economic Survey 2020.
18. Khandare Vilas ,Povale ,Takale,(2012) , Economics Of Agriculture Development ,Omkar Printers, Aurangabad.
19. Dhamdhare S.V. (2019) , Sarvajanic Ayyavay ( Marathi Edition ) ,Dimond Publication,Pune.

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<https://data.gov.in>

<https://www.gst.gov.in>

<https://www.incometaxindia.gov.in>

**T.Y.B.A. Economics  
Skill Enhancement Course  
Business Management**

Sem ester	CC Paper	Paper No.	Name of Paper	Lectures / Week	Total Lect.	CA Marks	ESE Marks	Total	No. of Credits
V	SEC -III SEC-3A		Business Management- I	03	30	15	35	50	2
VI	SEC -IV SEC-3A		Business Management - II Project	03	30	15	35	50	2

SEC -Skill Enhancement Course; CC -Core Course; CA - Continuous Assessment;  
ESE -End of Semester Examination

**T.Y.B.A. Economics  
Skill Enhancement Course  
SEC 3A: Business Management-I  
(Course Code:     )  
Semester – V**

**Course Learning Outcomes:**

At the end of the Course, the Learner will have the following skills:

- Management of Business.
- Business planning and decision making
- Leadership Skills- Ability to work in teams at the same time, ability to show leadership qualities

Unit No.	Name and Sub Titles of the Topic	No. of Lectures	Skill Enhancement Exercises
1	<b>Business Management</b>	6	<ul style="list-style-type: none"> <li>• Discussion/ Practical/ Field Study</li> </ul>
	1.1 Nature and Scope of Management		
	1.2 Characteristics of Management		
	1.3 Need & Importance of Study of Management		
	1.4 Process of Management		
2	<b>Business Planning and Decision Making</b>	6	<ul style="list-style-type: none"> <li>• Case Studies / Mini Projects / Individual /Team Presentations.</li> <li>• Practical Exercises in Decision Making Process/ Problem Solving</li> </ul>
	2.1 Nature of Planning		
	2.2 Steps in Planning Process		
	2.3 Types of Business Planning		
	2.4 Study of Planning Process		
	2.5 Steps in Decisions Making Process		
	2.6 Factors affecting decision Making		

3	<b>Schemes of Government :</b> Make in India Start-up India Stand up India Mudra Loans Dairy Management Scheme Fruits Management Development Programme Agriculture Products Sell Management	<b>6</b> <b>2 + 2</b> Guest Lecture	<ul style="list-style-type: none"> <li>• Visit to SSS/ Interview with Mudra Beneficiary.</li> <li>• Study of Street Vendors/ Hawkers/ Mini Enterprises etc.</li> <li>• Exhibitions Business Plan Ideas Competitor</li> </ul>
4	<b>Workshop:</b> Workshop on Entrepreneurship Development Training Programme	<b>8</b>	2 -Half-Day Work - shops -4 hours each <b>OR</b> 1- One Day Workshop - 8 hours

### Recommended Books

1. Stephen R. Covey, The 7 Habits of Highly effective People (1989), Guerilla Marketing.
2. Harvard Business Review, Management Tips, hbr.org/books.
3. Pandey, I.M. Financial Management, Persons 12<sup>th</sup> edn.
4. Saksena, S.C., Principles of Business Management (2019), Sahitya Bhawan Publi.Agra.
5. Kalkar Parag and Ajinath Doke, Vyavsay Vyavsthapan, Nirali Prakashan, Pune.
6. Vasistha, Neeru, Principles of Management, Taxmann.
7. Hannagan, Tim. Management Concepts and Practices, Macmillan India Ltd.
8. Government of India, Official Websites.

**T.Y.B.A. Economics**  
**Skill Enhancement Course**  
**SEC-3A: Business Management-II (Project Report)**  
**(Course Code:     )**  
**Semester – VI**

**Course Learning Outcomes:**

At the end of the Course, the Learner will have the following skills:

- Analytical Skills – Ability to analyze data collected and interpret in the most logical manner
- Project Report Writing Skills- Ability to comprehend and illustrate/demonstrate findings
- Presentation Skills – PPT/Poster- Ability to illustrate findings in the most appealing manner
- Leadership Skills: Ability to show leadership skills with business ideas or work on business ventures as a practical example

Unit No.	Name and Sub Titles of the Topic	No. of Lectures	Skill Enhancement Exercises
1	<b>Case Study</b>	2	Preview to Students for Project Report
	Guest Lecture – Local Entrepreneur – Success Stories / Struggles/ Historical Reviews/ Start-ups, etc		
2	<b>Project Interim Presentation</b>	14	Initial Mid Semester Presentation (15 marks)
	Detailed Study of ANY Business Enterprise under the Guidance of Subject Teacher OR Presentation of a Business Idea		
3	<b>Project Final Presentation</b>	14	Final Presentation Viva (35 Marks) Int. Examiner - 10 Ext. Examiner - 10 Report- 15
	Presentation with PPT or Poster or Exhibition of Business Ideas/ Reports		

**Recommended Books**

1. Stephen R. Covey, The 7 Habits of Highly effective People (1989), Guerilla Marketing.
2. Harvard Business Review, Management Tips, hbr.org/books.
3. Pandey, I.M. Financial Management, Persons 12<sup>th</sup> Edn.
4. Saksena, S.C., Principles of Business Management (2019), Sahitya Bhawan Publi.Agra.
5. Kalkar Parag and Ajinath Doke, Vyavsay Vyavsthapan, Nirali Prakashan, Pune.
6. Vasistha, Neeru, Principles of Management, Taxmann.
7. Hannagan, Tim. Management Concepts and Practices, Macmillan India Ltd.
8. Government of India, Official Websites.



**SAVITRIBAI PHULE PUNE UNIVERSITY**  
(Formerly University of Pune)

**T.Y.B.A. Political Science  
& Public Administration Syllabus**  
(CREDIT & SEMESTER SYSTEM)

**Revised Syllabus will be implemented with effect from the  
academic year 2021-2022**



**Savitribai Phule Pune University**

**POLITICAL SCIENCE**

**Syllabus of T.Y.B.A.**

**(CBCS pattern to be implemented from 2021-2022)**

<b>PAPER NO.</b>	<b>PAPER TITLE</b>
<b>CORE COURSES (C.C.):</b>	
<b>Semester V CC-1 E (3)</b>	<b>MODERN POLITICAL ANALYSIS</b>
<b>And</b>	
<b>Semester VI CC-2 E (3)</b>	<b>MODERN POLITICAL ANALYSIS</b>
	<b>OR</b>
<b>Semester V CC-1 E (3)</b>	<b>LOCAL SELF GOVERNMENT IN MAHARASHTRA</b>
<b>And</b>	
<b>Semester VI CC-2 E (3)</b>	<b>LOCAL SELF GOVERNMENT IN MAHARASHTRA</b>

**DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE)**

<b>Semester V DSE 1 C (3)+1</b>	<b>PUBLIC ADMINISTRATION</b>
<b>And</b>	
<b>Semester VI DSE 1 D (3)+1</b>	<b>PUBLIC ADMINISTRATION</b>
<b>Semester V DSE 2 C (3)+1</b>	<b>INTERNATIONAL RELATIONS</b>
<b>And</b>	
<b>Semester VI DSE 2 D (3)+1</b>	<b>INTERNATIONAL RELATIONS</b>

**SKILL ENHANCEMENT COURSE (SEC)**  
**(Value / Skill Based Course)**

<b>Semester V SEC 2C (2)</b>	<b>SAMYUKTA MAHARASHTRA MOVEMENT</b>
<b>Semester VI SEC 2D (2)</b>	<b>SAMYUKTA MAHARASHTRA MOVEMENT</b>

**Savitribai Phule Pune University**  
**T.Y.B.A. Political Science**  
**(CBCS pattern to be implemented from 2021-2022)**  
**Core Courses (C.C.)**

**MODERN POLITICAL ANALYSIS**

**Objectives:**

This course will introduce the overall scope of the sub-discipline of Modern Political Analysis. The focus of the course will be on the Modern Political Analysis of power. The emphasis is on the nature of power in modern societies- more in the form of organizations and social formations than as individual power. Students are also expected to understand different forms of justifications of power and the role of ideology in this regard. State will be studied as a repository of power in society while class and patriarchy are two instance of how the nature of power is shaped by social factors.

**SEMESTER-V**

**CC-1 E (3)**

	<b>PERIOD</b>
<b>Unit 1: Introduction to Modern Political Analysis</b>	<b>12</b>
a) Meaning	
b) Nature - Difference between Traditional and Modern Political Approach	
c) Features of Modern Political Analysis	
<b>Unit 2: Political System</b>	<b>12</b>
a) Meaning and Nature	
b) Functions of the Political System	
c) Classification of Political System : Gabriel Almond	
<b>d) Unit 3: Political culture</b>	<b>12</b>
a) Meaning	
b) Basic Elements	
c) Types	

- d) **Unit 4: Political Socialization** **12**  
a) Meaning  
b) Agencies  
c) Types

**SEMESTER-VI**

**CC-2 E (3)**

- Unit 1: Political Participation** **12**  
a) Meaning & Nature  
b) Levels of Participation  
c) Factors affecting Political Participation

- Unit 2: Political Elite** **12**  
a) Meaning  
b) Nature  
c) Different approaches of Mosca, Michels, Pareto, Burnham and C. Wright Mills

- Unit 3: Political Communication** **12**  
a) Meaning  
b) Nature  
c) Agencies of Political Communication

- Unit 4: Power, Influence, Authority and Legitimacy** **12**  
a) Meaning, Nature of Power and Influence  
b) Different Types of Authority  
c) Different Types of Legitimacy

**Readings:**

1. Almond G. A and Powell G. B, 1996, *Comparative Politics*, New York City, Little Brown & Co.
2. Almond G. A. and Verba S., 1963, *The Civic Culture*, New Jersey, Princeton University Press.
3. Ball Alan R., 1971, *Modern Politics and Government*, London, Macmillan.
4. Blondel Jean, 1973, *Comparing Political Systems*, London, Weidenfeld & Nicolson.

5. Charlesworth James C., 1973, *Contemporary Political Analysis*, New York, The Free Press.
6. Deutsch Karl W., 1963, *The Nerves of Government*, New York, The Free Press.
7. Easton David, 1971, *The Political System*, New York, Scientific Book Agency.
8. इनामदार ना.र आणि वकील आलिम, १९८८, *आधुनिक राजकीय विश्लेषण*, पुणे, शुभदा सारस्वत प्रकाशन.
9. इनामदार ना.र आणि पुराणिक सू. ना. *राजकीय समाजशास्त्र*, पुणे, शुभदा सारस्वत प्रकाशन.
10. गर्दे दि. का. आणि बाचल वि. मा, १९७९, *आधुनिक राजकीय विश्लेषण*, पुणे, कॉनटीनेंटल.
11. Lipset, Seymour M., 1960, *Political Man*, New York, Vakils, Feffer & Simons.
12. नवलगुंदकर शं. ना, १९७९, *आधुनिक राजकीय विश्लेषण*, पुणे, नरेंद्र प्रकाशन.
13. पाटील वा.भा., २००९, *पंचायती राज*, जळगाव, प्रशांत प्रकाशन.
14. Pye Lucian and Verba S(ed), 2016, *Political Culture & Political Development*, New Jersey Princeton University.
15. Rush Michael and Althoff Phillip, 1971, *An Introduction to Political Sociology*, London, Nelson.
16. Rowe Eric, 1970, *Modern Politics: An Introduction to Behaviour and Institutions*, London, Routledge & Kegan Paul.
17. Varma S. P., 1975, *Modern Political Theory*, Delhi, Vikas Publication.

**Savitribai Phule Pune University**  
**T.Y.B.A. Political Science**  
**(CBCS pattern to be implemented from 2021-2022)**  
**Core Courses (C.C.)**

**LOCAL SELF GOVERNMENT IN MAHARASHTRA**

**Objectives:**

1. To introduce the evolution of Local Self Government in Maharashtra
2. To make students aware about 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendments
3. To introduce the students the structure of Local Self Government
4. To make students aware about composition, power and functions of local bodies

**SEMESTER-V**

**CC-1 E (3)**

	<b>PERIOD</b>
<b>Unit 1:</b> Evolution of Local Self Government	12
a. Background of Panchayati Raj in British Era	
b. Community Development Program – 1952	
c. Balavantrao Mehata Committee – 1957	
<b>Unit 2:</b> Various committees of Local Self Government in Maharashtra	12
a. Vasant Rao Naik Committee – 1960	
b. L. N. Bongirwar Committee – 1970	
c. P. B. Patil Committee – 1985	
<b>Unit 3:</b> 73 <sup>rd</sup> Amendment and Rural Bodies	12
a. Background of 73 <sup>rd</sup> Constitutional Amendment	
b. Constitutional change in Article 243	
c. Gram Sabha & Gram Panchayat	
<b>Unit 4:</b> 73 <sup>rd</sup> Constitutional Amendment and Rural Bodies	12
a. Panchayat Samiti	
b. Zilha Parishad	
c. Schedule XI In Constitution	

## SEMESTER-VI

### CC-2 E (3)

- Unit 1:** 74<sup>th</sup> Constitutional Amendment and Urban Bodies 12
- Urban Bodies before 74<sup>th</sup> Constitutional Amendment
  - Constitutional change in Article 243
  - Nagar Panchayat
- Unit 2:** 74<sup>th</sup> Constitutional Amendment and Urban Bodies 12
- Municipal Council
  - Municipal Corporation
  - Schedule XII In Constitution
- Unit 3:** Commissions about Local Self Government 12
- State Election Commission
  - State Finance Commission
  - Challenges before Commission
- Unit 4:** Future of Local Self Government 12
- Control on Local Self Government
  - Limitations of Local Self Government
  - Challenges before Local Self Government

### Readings:

- Avasti A., (ed), 1972, *Municipal Corporation In India*, Agra, L.N. Agarwal.
- आवाळे मनोज, २०१२, *पंचायत राज*, पुणे, आदिश्रेय प्रकाशन.
- बंग के. आर., २००५, *भारतातील स्थानिक स्वराज्य संस्था महाराष्ट्राच्या विशेष संदर्भासह*, नागपूर, मंगेश प्रकाशन.
- बिराजदार टी. एस. व शरद घोडके, १९९९, *भारतातील स्थानिक स्वराज्य संस्था*, नागपूर, अंशुल प्रकाशन.
- भणगे रविंद्र, २०१२, *भारतातील स्थानिक स्वराज्य संस्था, विशेष संदर्भ*, महाराष्ट्र, जळगाव, प्रशांत पब्लिकेशन्स.

6. खांदवे एकनाथ, २०१३, महाराष्ट्राचे शासन आणि राजकारण, दिल्ली, पिअरसन प्रकाशन.
7. कारेकर शोभा आणि शरद घोडके, २००४, शासन आणि राजकारण, नागपूर, विद्या प्रकाशन.
8. कुलकर्णी अ. ना., २०००, भारतातील स्थानिक स्वशासन महाराष्ट्राच्या विशेष संदर्भासह, नागपूर, विद्या प्रकाशन.
9. माहेश्वरी एस. आर., २००६, भारत में स्थानीय शासन, आगरा, लक्ष्मी नारायण अग्रवाल.
10. Maheshwari S. R., 1972, *Local self Government in India*, Delhi, Orient Longmen.
11. नलावडे पंडित, २००८, सत्ता विकेंद्रीकरण आणि 73 वी घटनादुरुस्ती, औरंगाबाद, विन्मय प्रकाशन.
12. पाटील बी. बी., २००५, शासन आणि राजकारण, कोल्हापूर, फडके प्रकाशन.
13. पोले कांतराव, २००९, महाराष्ट्रातील पंचायतीराज आणि महिला आरक्षण, लातूर, अरुणा प्रकाशन.
14. Sharma M.P., 1978, *Local Self Government in India*, New Delhi, Manshiram Manoharlal.
15. शिरसाठ श्याम आणि भगवानराव बैनाडे, २०१४, पंचायतराज आणि नागरी प्रशासन, औरंगाबाद, विद्या बुक्स.
16. ठोंबरे सतीश, २००७, जिल्हा प्रशासन आणि स्थानिक स्वशासन, औरंगाबाद, कैलाश प्रकाशन.
17. Venkatesan V., 2002, *Institutionalizing Panchayati Raj in India*, New Delhi, Institute of Social Science.
18. विभूते भालबा, २००१, पंचायती राज्य व्यवस्था, मुंबई, मनोविकास प्रकाशन.

**Savitribai Phule Pune University**  
**T.Y.B.A. Political Science**  
**(CBCS pattern to be implemented from 2021-2022)**  
**DISCIPLINE SPECIFIC ELECTIVE COURSE**  
**PUBLIC ADMINISTRATION**

**Objectives:**

This paper is an introductory course in Public Administration. The essence of Public Administration lies in its effectiveness in translating the governing philosophy into programmes, policies and activities and making it a part of community living. The paper covers personnel public administration in its historical context thereby proceeding to highlight several of its categories, which have developed administrative salience and capabilities to deal with the process of change. The recent developments and particularly the emergence of New Public Administrations are incorporated within the larger paradigm of democratic legitimacy. The importance of legislative and judicial control over administration is also highlighted

**SEMESTER-V**

**DSE 1 C (3)+1**

	<b>PERIOD</b>
<b>Unit 1: Public Administration</b>	<b>12</b>
a) Meaning	
b) Nature	
c) Scope and Significance	
<b>Unit 2: New Public Administration</b>	<b>12</b>
a) Evolution	
b) Salient Features	
c) Goals	
<b>Unit 3: Approaches to Public Administration</b>	<b>12</b>
a) Traditional Approach	
b) Behavioral Approach	
c) System Approach	



<b>Unit 4: Governance</b>	<b>12</b>
a) Idea of Good Governance	
b) E-Governance	
c) Public Private Partnership	

**SEMESTER-VI**  
**DSE 1 D (3)+1**

<b>Unit 1: Bureaucracy</b>	<b>12</b>
a) Meaning and Definitions	
b) Administrative Reforms	

<b>Unit 2: Personnel Administration</b>	<b>12</b>
a) Recruitment	
b) Training	
c) Promotion	

<b>Unit 3: Budgeting</b>	<b>12</b>
a) Meaning and types and Principles of sound Budget	
b) Budgetary Process in India	
c) Gender Budgeting	

<b>Unit 4: Accountability and Control</b>	<b>12</b>
a) Administrative Accountability	
b) Legislative Control	
c) Judicial Control	

**Readings:**

1. Avasthi Amreshwar and Maheshwari Shriram, 1982, *Public Administration*, Agra, Lakshmi Narran Aggrawal.
2. बेनके सुवर्णा , २०१५ , *लोकप्रशासन*, जळगाव, प्रशांत पब्लिकेशन्स.
3. Bhagwan Vishnu and Bhushan Vidya, 2007, *Public Administration*, New Delhi, S Chand and Company Ltd.

4. भोगले शांताराम २००६, *लोकप्रशासनाचे सिद्धांत आणि कार्यपद्धती*, औरंगाबाद, कैलास प्रकाशन.
5. D. Waldo (ed), 1953, *Ideas and Issues in Public Administration*, New York, McGraw Hill.
6. D. D. Basu, 1986, *Administrative Law*, New Delhi, Prentice Hall.
7. दर्शनकार अर्जुन, २०००, *पंचायती राज आणि नागरी प्रशासन*, औरंगाबाद, कैलास प्रकाशन.
8. E. N. Gladden, 1958, *The Essentials of Public Administration*, London, Staples Press.
9. M. Bhattacharya, 1991, *Public Administration: Structure, Process and Behavior*, Calcutta, The World Press.
10. M. E. Dimock and G. O. Dimock, 1975, *Public Administration*, Delhi, Oxford, IBH Publishing Co.
11. M Laxmikanth, 2012, *Public Administration*, New Delhi, McGraw Hill.
12. N. D. White, 1955, *Introduction to the Study of Public Administration* New York, Macmillan.
13. O. Glenn Stahl, 1956, *Public Personnel Administration*, New York, Harper & Brothers.
14. P. H. Appleby, 1957, *Policy and Administration*, Alabama, University of Alabama Press.
15. पाटील बी.बी., २००४, *लोकप्रशासन*, कोल्हापूर, फडके प्रकाशन.
16. S. R. Maheshwari, 1994, *Administrative Theories*, New Delhi, Allied.
17. S. R. Nigam, 1980, *Principles of Public Administration*, Allahabad, Kitab Mahal.

**Savitribai Phule Pune University**  
**T.Y.B.A. Political Science**  
**(CBCS pattern to be implemented from 2021-2022)**  
**DISCIPLINE SPECIFIC ELECTIVE COURSE**  
**INTERNATIONAL RELATIONS**

**Objectives:**

This paper deals with concepts and dimensions of International Relations and makes an analysis of different theories highlighting the major debates and differences within the different theoretical paradigms. The dominant theories of power and the question of equity and justice, the different aspects of balance of power leading to the present situation of a unipolar world are included. It's highlights various aspects of conflict and conflicts resolution, collective security and in the specificity of the long period of the post second world war phase of the cold war, of Detent and Deterrence leading to theories of rough parity in armaments.

**SEMESTER-V**

**DSE 2 C (3)+1**

	<b>PERIOD</b>
<b>Unit 1: Introduction to International Relations</b>	<b>12</b>
a) Development and Meaning	
b) Nature	
c) Scope	
<b>Unit 2: Approaches to International Relations</b>	<b>12</b>
a) Idealism	
b) Realism – Neo realism	
c) System approach	
d) Marxism	
<b>Unit 3: World War II and the Cold War</b>	<b>12</b>
a) Causes and Consequences of the world war II	
b) Emergence of the cold war and its phase	
c) End of cold war and the emerging world order	

**Unit 4: International Organizations** **12**

- a) The United Nations - its structure and peacekeeping Functions- Reforms of UN
- b) International Financial institutions : World Bank, IMF, WTO
- c) Regional Organizations : EU, SAARC, ASEAN, BRICS

**SEMESTER-VI**

**DSE 2 D (3)+1**

**Unit 1: The Theory of Non-Alignment** **12**

- a) Meaning and basic principles of Non-Alignment
- b) Emergence of Non-Alignment
- c) Non-Alignment as a Movement
- d) Relevance of NAM In Post cold war period

**Unit 2: Globalization** **12**

- a) Meaning of Globalization
- b) Evolution and Impacts of Globalization
- c) Limits of Globalization
- d) Role of The state

**Unit 3: International Political Economy** **12**

- a) Neo-Colonialism
- b) New International Economic Order
- c) North-South Divide
- d) South-South Co-operation

**Unit 4: Contemporary Global Issues** **12**

- a) International Terrorism
- b) Environmental Issues
- c) Poverty, Development and Hunger
- d) Human Rights

## Readings:

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3. Awari Vilas, 2019, *International relations*, Kanpur, Chandralok Publications.
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20. Sen Asit Kumar, 1995, *International Relations: Since world war I*, New Delhi, S. Chand &Company Ltd.

## **SKILL ENHANCEMENT COURSE (SEC)**

**( Value/Skill Based Course )**

**Savitribai Phule Pune University  
Political Science  
Syllabus of T.Y.B.A. (Extra Credit)  
Value/Skill Based Course**

### **Samyukta Maharashtra Movement**

#### **Objectives:**

1. This Course is an introduction to the political process in Maharashtra with special reference to regionalism sub-regionalism and Samyukta Maharashtra Movement.
2. The aim of the course is that students are expected to understand both the historical evolution of Maharashtra's politics and different analyses of politics of the state.
3. It tries to acquaint students with the main issues and concerns in the public life of a regional society as it shaped in the concept of colonialism, nationalism and modernity.

#### **SEMESTER – V**

##### **SEC-2C(2)**

#### **UNIT - I**

##### **1. Regional Aspirations in India**

- a. Concept of Regionalism: Its Nature
- b. Genesis of Regionalism in India
- c. Indian National Congress and Regionalism

#### **UNIT - II**

##### **2. Samyukta Maharashtra Movement - I**

- a. Emergence and Development of Regional Consciousness in Maharashtra
- b. Preferential Treatment for the 'Sons of Soil'
- c. Difficulties in the Formation of Samyukta Maharashtra

### **Readings:**

1. बोकील नीता, २०१२, *महाराष्ट्राचा राजकीय इतिहास- १९६० ते १९७२*, मुंबई, मौज प्रकाशन.
2. घारे गोविंद, २०००, *आदिवासी समस्या आणि बदलते संदर्भ*, पुणे, सुगावा प्रकाशन.
3. कांबळे बाळ, २०१७, *भारतातील छोट्या राज्यांची मागणी*, नांदेड, अनुराधा प्रकाशन.
4. Jain V. Ashok, 1999, *Political Process in Maharashtra*, Mumbai, Sheth Publishers Pvt.Ltd.
5. Jayachandran Usha(eds.), 2014, *Human Development Report, Maharashtra 2012: Toward Inclusive Human Development*, New Delhi, Sage.
6. Kamble Bal, 2015, *Performance Of Scheduled Caste MLAs in Maharashtra Vidhan Sabha*, Nanded, Anuradha Publication.
7. Lele Jayant, 1982, *Elite Pluralism and Class Rule, Political Development in Maharashtra*, Mumbai, Popular.
8. पळशीकर सुहास आणि नितीन बिरमल(संपा.), २००२, *महाराष्ट्राचे राजकारण : राजकीय प्रक्रियेचे स्थानिक संदर्भ*, पुणे, प्रतिमा प्रकाशन.
9. Palshikar Suhas and Rajeshwari Deshpande, 1999, *Maharashtra: Electoral Politics and Structures of Domination*, Pune, Dept. of Politics and Public Administration, University of Pune.
10. पळशीकर सुहास आणि कुलकर्णी सुहास(संपा.), २००७, *महाराष्ट्रातील सत्ता संघर्ष : राजकीय पक्षांची वाटचाल*, पुणे, समकालीन प्रकाशन.
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12. पवार प्रमोद, कांबळे बाळ आणि इतर(संपा.), २०१९, *महाराष्ट्रातील स्थित्यंतरे*, जळगाव, अथर्व प्रकाशन.
13. पवार वैशाली, २०१२, *महाराष्ट्राच्या सत्ता संघर्षाचा आलेख*, पुणे, डायमंड प्रकाशन.
14. Phadk Y. D., 1979, *Politics and Language*, Mumbai, Himalaya Publishing House.
15. Thakkar Usha and Kulkarni Mangesh, 1995, *Politics in Maharashtra*, Mumbai, Himalaya Publishing House.

**Savitribai Phule Pune University**  
**Political Science**  
**Syllabus of T.Y.B.A. (Extra Credit)**  
**Value/Skill Based Course**

**Samyukta Maharashtra Movement**

**Objectives:**

1. This Course is an introduction to the political process in Maharashtra with special reference to regionalism sub-regionalism and Samyukta Maharashtra Movement.
2. The aim of the course is that students are expected to understand both the historical evolution of Maharashtra's politics and different analyses of politics of the state.
3. It tries to acquaint students with the main issues and concerns in the public life of a regional society as it shaped in the concept of colonialism, nationalism and modernity.

**SEMESTER – VI**

**SEC-2D(2)**

**UNIT - I**

**1. Samyukta Maharashtra Movement - II**

- a. Rethinking on the Bilingual Bombay state
- b. Formation of the Samyukta Maharashtra
- c. The aftermath of the formation of Samyukta Maharashtra

**UNIT - II**

**2. Emergence of Sub-Regionalism in Maharashtra**

- a. Regional Imbalance and Regional Development Boards
- b. Seperate Vidarbha State
- c. Marathwada Vikas Andolan

**Readings:**

1. बोकील नीता, २०१२, महाराष्ट्राचा राजकीय इतिहास- १९६० ते १९७२, मुंबई, मौज प्रकाशन.
2. घारे गोविंद, २०००, आदिवासी समस्या आणि बदलते संदर्भ, पुणे, सुगावा प्रकाशन.
3. कांबळे बाळ, २०१७, भारतातील छोट्या राज्यांची मागणी, नांदेड, अनुराधा प्रकाशन.
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5. Jayachandran Usha(eds.), 2014, *Human Development Report, Maharashtra 2012: Toward Inclusive Human Development*, New Delhi, Sage.
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7. Lele Jayant, 1982, *Elite Pluralism and Class Rule, Political Development in Maharashtra*, Mumbai, Popular.
8. पळशीकर सुहास आणि नितीन बिरमल(संपा.), २००२, *महाराष्ट्राचे राजकारण : राजकीय प्रक्रियेचे स्थानिक संदर्भ*, पुणे, प्रतिमा प्रकाशन.
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12. पवार प्रमोद, कांबळे बाळ आणि इतर(संपा.), २०१९, *महाराष्ट्रातील स्थित्यंतरे*, जळगाव, अथर्व प्रकाशन.
13. पवार वैशाली, २०१२, *महाराष्ट्राच्या सत्ता संघर्षाचा आलेख*, पुणे, डायमंड प्रकाशन.
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15. Thakkar Usha and Kulkarni Mangesh, 1995, *Politics in Maharashtra*, Mumbai, Himalaya Publishing House.

# **SAVITRIBAI PHULE PUNE UNIVERSITY**

(Formerly University of Pune)

## **T. Y. B. A. Public Administration Syllabus**

(CREDIT & SEMESTER SYSTEM)

**Revised syllabus will be implemented with effect from the  
academic year 2021-2022 at College Centers**

**Savitribai Phule Pune University**

**PUBLIC ADMINISTRATION**

**Syllabus of T.Y.B.A.**

**(CBCS pattern to be implemented from 2021-2022)**

<b>PAPER NO.</b>	<b>PAPER TITLE</b>
<b>CORE COURSES (C.C.):</b>	
<b>Semester V CC-1 E (3)</b>	<b>PUBLIC ADMINISTRATION</b>
<b>And</b>	
<b>Semester VI CC-2 E (3)</b>	<b>PUBLIC ADMINISTRATION</b>
	<b>OR</b>
<b>Semester V CC-1 E (3)</b>	<b>LOCAL SELF GOVERNMENT IN INDIA</b>
<b>And</b>	
<b>Semester VI CC-2 E (3)</b>	<b>LOCAL SELF GOVERNMENT IN INDIA</b>

**DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE)**

<b>Semester V DSE 1 C (3)+1</b>	<b>FINANCIAL ADMINISTRATION</b>
<b>And</b>	
<b>Semester VI DSE 1 D (3)+1</b>	<b>FINANCIAL ADMINISTRATION</b>
<b>Semester V DSE 2 C (3)+1</b>	<b>ADMINISTRATIVE THINKERS</b>
<b>And</b>	
<b>Semester VI DSE 2 D (3)+1</b>	<b>ADMINISTRATIVE THINKERS</b>

**SKILL ENHANCEMENT COURSE (SEC)**  
**(Value / Skill Based Course)**

<b>Semester V SEC 2C (2)</b>	<b>SAMYUKTA MAHARASHTRA MOVEMENT</b>
<b>Semester VI SEC 2D (2)</b>	<b>SAMYUKTA MAHARASHTRA MOVEMENT</b>

**Savitribai Phule Pune University**  
**T.Y.B.A. Public Administration**  
**((CBCS pattern to be implemented from 2021-2022))**  
**Core Courses (C.C.)**  
**PUBLIC ADMINISTRATION**

**Objectives:**

This paper is an introductory course in Public Administration. The essence of Public Administration lies in its effectiveness in translating the governing philosophy into programmes, policies and activities and making it a part of community living. The paper covers personnel public administration in its historical context thereby proceeding to highlight several of its categories, which have developed administrative salience and capabilities to deal with the process of change. The recent developments and particularly the emergence of New Public Administrations are incorporated within the larger paradigm of democratic legitimacy. The importance of legislative and judicial control over administration is also highlighted

**SEMESTER-V**  
**CC-1 E (3)**

	<b>PERIOD</b>
<b>Unit 1: Public Administration</b>	<b>12</b>
a) Meaning	
b) Nature	
c) Scope and Significance	
<b>Unit 2: New Public Administration</b>	<b>12</b>
a) Evolution	
b) Salient Features	
c) Goals	
<b>Unit 3: Approaches to Public Administration</b>	<b>12</b>
a) Traditional Approach	
b) Behavioral Approach	
c) System Approach	

<b>Unit 4: Governance</b>	<b>12</b>
a) Idea of Good Governance	
b) E-Governance	
c) Public Private Partnership	

**SEMESTER-VI**  
**CC-2 E (3)**

<b>Unit 1: Bureaucracy</b>	<b>15</b>
a) Meaning and Definitions	
b) Administrative Reforms	

<b>Unit 2: Personnel Administration</b>	<b>15</b>
a) Recruitment	
b) Training	
c) Promotion	

<b>Unit 3: Budgeting</b>	<b>15</b>
a) Meaning and types and Principles of sound Budget	
b) Budgetary Process in India	
c) Gender Budgeting	

<b>Unit 4: Accountability and Control</b>	<b>15</b>
a) Administrative Accountability	
b) Legislative Control	
c) Judicial Control	

**Readings:**

1. Avasthi Amreshwar and Maheshwari Shriram, 1982, *Public Administration*, Agra, Lakshmi Narran Aggrawal.
2. बेनके सुवर्णा , २०१५ , लोकप्रशासन, जळगाव, प्रशांत पब्लिकेशन्स.

3. Bhagwan Vishnu and Bhushan Vidya, 2007, *Public Administration*, New Delhi, S Chand and Company Ltd.
4. भोगले शांताराम २००६, *लोकप्रशासनाचे सिद्धांत आणि कार्यपद्धती*, औरंगाबाद, कैलास प्रकाशन.
5. D. Waldo (ed), 1953, *Ideas and Issues in Public Administration*, New York, McGraw Hill.
6. D. D. Basu, 1986, *Administrative Law*, New Delhi, Prentice Hall.
7. दर्शनकार अर्जुन, २०००, *पंचायती राज आणि नागरी प्रशासन*, औरंगाबाद, कैलास प्रकाशन.
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15. P. H. Appleby, 1957, *Policy and Administration*, Alabama, University of Alabama Press.
16. पाटील बी.बी., २००४, *लोकप्रशासन*, कोल्हापूर, फडके प्रकाशन.
17. S. R. Maheshwari, 1994, *Administrative Theories*, New Delhi, Allied.
18. S. R. Nigam, 1980, *Principles of Public Administration*, Allahabad, Kitab Mahal.

**Savitribai Phule Pune University**  
**T.Y.B.A. Public Administration**  
**((CBCS pattern to be implemented from 2021-2022))**  
**Core Courses (C.C.)**

**LOCAL SELF GOVERNMENT IN INDIA**

**Objectives:**

1. To acquaint the students with the Objectives, Structure and Functions of Local Government.
2. To acquaint the students with the working of the urban and rural system of Local Government.
3. To identify the role of Local Government in development.

**SEMESTER-V**

**CC-1 E (3)**

	<b>PERIOD</b>
<b>Unit-1: - Local Government: Evolution</b>	<b>12</b>
a) Meaning, Nature, importance and scope of Local government.	
b) Evolution of Local Government: Urban and Rural.	
c) Changing features of Local Government	
<b>Unit-2: - Urban Local Government</b>	<b>12</b>
a) Evolution of Urban Local Government till 74th Constitutional Amendment.	
b) Municipal Corporation: Structure, Functions and Finances.	
<b>Unit-3: - Urban Local Government (Continued)</b>	<b>12</b>
a) Municipal Council: Structure, Functions and Finances.	
b) Cantonment Boards: Structure, Functions and Finances	
<b>Unit-4: - Control and Problems of Urban Government</b>	<b>12</b>
a) State Government: Divisional Commissioner and District Collector.	
b) Problems of Urbanization.	

## SEMESTER-VI

### CC-2 E (3)

#### **Unit-5: - Democratic Decentralization** **12**

- a) Evolution of Panchayat Raj Institution till 73rd and 74th Constitutional Amendment
- b) Zilla Parishad and Panchayat Samiti: Structure, Functions and Finances.

#### **Unit-6: - Democratic Decentralization (Continued)** **12**

- a) Gram Panchayat and Gram Sabha: Structure, Functions and Finances.
- b) Relations between officials and non-officials.

#### **Unit-7: - Role of Panchayat Raj Institutions in Development.** **12**

- a) Role in Democratization.
- b) Role in Social Change: Empowerment of the weaker sections.

#### **Unit-8: - Panchayat Raj Institution: Problems and Control** **12**

- a) State Government: District Collector
- b) Chief Executive Officers of Zilla Parishad, Block Development Officer(BDO)
- c) Problems: Rural-Urban Divide.

#### **Readings:**

1. Avasthi A.(ed), 1972, *Municipal Administration in India*, Agra, Lakshmi Narayan Aggarwal.
2. Battacharya, B., 1979, *Urban Development in India*, Delhi Shree Publishing House.
3. भोगले शांताराम, 1990, *भारतातील स्थानिक प्रशासन*, नागपूर, विद्या प्रकाशन.
4. दर्शनकार अर्जुन, 1992, *पंचायतराज आणि नागरी प्रशासन*, औरंगाबाद, कैलास पब्लिकेशन.
5. Gandhi M.K. 1959, *Panchayati Raj*, Ahmadabad, Navjeevan Publishing House.
6. Jackson R.M., 1967, *The Machinery of Local Government*, London, Macmillan.
7. जैन अशोक, 1998, *महाराष्ट्राचे शासन आणि राजकारण*, मुंबई, सेठ पब्लिकेशन.
8. Jain, S.P. (ed), 1995, *Panchayati Raj Institutions in India: An Appraisal*, Hyderabad, NIRD.
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10. खान्दवे एकनाथ, 2009, *महाराष्ट्राचे शासन आणि राजकारण* , कर्जत, अहमदनगर, आरती प्रकाशन.
11. Maheshwari, S.R., 1970, *Local Government in India*, Agra, Laxmi Narain Aggarwal.
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13. Puri V.K., 2005, *Local Government and Administration*, Jalandhar, Modern Publishers.
14. Sharma Harishchander, 2006, *Local Administration in India (Hindi)*, Jaipur, College Book Depot.
15. Sachdeva, Pradeep, 1993, *Urban Local Government and Administration in India*, New Delhi, Kitab Mahal.
16. Singh Sahab and Singh Swinder, 1992, *Public Administration Development and Local Administration*, Jalandhar, New Academic Publishing Company.
17. Singh Viday Karan, 2003, *Panchayati Raj System (Hindi)*, Jaipur, RBMA Publishers.

**Savitribai Phule Pune University**  
**T.Y.B.A. Public Administration**  
**(CBCS pattern to be implemented from 2021-2022)**  
**DISCIPLINE SPECIFIC ELECTIVE COURSE**  
**FINANCIAL ADMINISTRATION**

**Objectives:**

1. To acquaint the students with the Objectives, Structure and Functions of Financial Administration
2. To acquaint the students with the working of the system of Financial Administration.
3. To identify the role of Financial Administration in Development.

**SEMESTER-V**

**DSE 1 C (3)+1**

	<b>PERIOD</b>
<b>Unit 1: Financial Administration</b>	<b>12</b>
a) Meaning ,Nature and Scope	
b) Importance of Financial Administration	
<b>Unit 2: Agencies of Financial Administration</b>	<b>12</b>
a) Legislature	
b) Executive	
c) Parliamentary Committees	
<b>Unit 3: Budget</b>	<b>12</b>
a) Meaning ,Types and Principles of Good Budgeting	
b) Budget as an instrument of Economic Policy	
c) Budget as a tool of Social and Economic Change	
<b>Unit 4: Budgetary Process</b>	<b>12</b>
a) Preparation of the Budget	
b) Enactment of Budget	
c) Execution of Budget	

## SEMESTER-VI

### DSE 1 D (3)+1

<b>Unit 5: Comptroller and Auditor General of India</b>	<b>12</b>
Powers and functions	
<b>Unit 6: Finance Commission</b>	<b>12</b>
Structure and functions	
<b>Unit 7 Control over Financial Administration</b>	<b>12</b>
a) Public Accounts Committee	
b) Estimate Committee	
c) Committee on Public Undertaking	
<b>Unit 8: New Economic Policy and Financial Administration of India</b>	<b>12</b>
a) Liberalisation	
b) Privatization	
c) Globalisation	

### Readings:

1. Basu Rumki, 2012, *Public Administration: Concepts and Theories*, New Delhi, Sterling Publishers.
2. Bhattacharya Mohit, 2008, *New Horizons of Public Administration*, New Delhi, Jawahar Publishers and Distributors.
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4. भट्टाचार्य मोहित, वासंती फडके(अनु), २०१३, *न्यू होरायझन्स ऑफ पब्लिक अॅडमिनिस्ट्रेशन*, नवी दिल्ली, जवाहर पब्लिकेशन्स आणि डिस्ट्रिब्यूशन्स .
5. बोरा पारस आणि शिरसाठ शाम, २०१५, *लोकप्रशासन*, औरंगाबाद, विद्या बुक्स पब्लिशर्स.
6. Chakrabarty Bidyut and Mohit Bhattacharya (ed), 2005, *Public Administration: A Reader*, New Delhi, Oxford University Press.
7. Chakrabarty Bidyut and Mohit Bhattacharya (ed), 2008, *The Governance Discourse: a reader*. New Delhi and New York : Oxford University Press.

8. Chakrabarty Bidyut and Prakash Chand, 2012, *Public Administration in a Globalizing World: Theories and Practices*, New Delhi, Sage.
9. Chakrabarty Bidyut, 2007, *Reinventing Public Administration: The India Experience*, New Delhi, Orient Blackswan.
10. Denhardt Robert B. and Janet V. Denhardt, 2010, *Public Administration: Action Orientation*, Belmont, Thomson Higher Education.
11. Goel S.L., 2003, *Public Administration: Theory and Practice*, New Delhi, Deep and Deep Publishers.
12. इनामदार ना.र. आणि काळे सुनिता, १९९७, लोकप्रशासन, पुणे, साधना प्रकाशन.
13. Medury Uma, 2010, *Public Administration in the Globalization Era*, New Delhi, Orient Blackswan.
14. पाटील पी.बी., २००२, *लोकप्रशासन*, कोल्हापूर, फडके प्रकाशन.

**Savitribai Phule Pune University**  
**T.Y.B.A. Public Administration**  
**(CBCS pattern to be implemented from 2021-2022)**  
**DISCIPLINE SPECIFIC ELECTIVE COURSE**  
**ADMINISTRATIVE THINKERS**

**Objectives:**

1. To acquaint the students with the main administrative ideas of major administrative thinkers;
2. To make the students aware of the contributions made by these thinkers to the administrative thinking.

**SEMESTER-V**

**DSE - 2 C (3)+1**

	<b>PERIOD</b>
<b>Unit 1: Kautilya</b>	<b>12</b>
a. Principles of Administration.	
b. Machinery of Administration	
c. Administrative Corruption.	
<b>Unit 2: F.W. Taylor.</b>	<b>12</b>
a. Concept and objectives of Scientific Management.	
b. Principles and Impact of Scientific Management.	
c. Critical Evaluation.	
<b>Unit 3: Woodrow Wilson</b>	<b>12</b>
a. Views on Administration.	
b. Dichotomy between Administration and Politics	
<b>Unit 4: Max Weber</b>	<b>12</b>
a. Views on Authority, Organisation and Legitimacy	
b. Weberian Model of Bureaucracy	

## SEMESTER-VI

### DSE - 2 D (3)+1

<b>Unit 5: Karl Marx</b>	<b>12</b>
a. Views on Bureaucracy –Nature, Characteristics	
b. Class Approach to Bureaucracy	
<b>Unit 6: Pandit Jawaharlal Nehru</b>	<b>12</b>
a. Views on Bureaucracy	
b. Decentralization	
c. Socialism and Administration	
<b>Unit 7: Abraham Maslow</b>	<b>12</b>
a. Views on Theory of Human Motivation.	
b. Need Hierarchy	
<b>Unit 8: Peter Drucker</b>	<b>12</b>
a. Management by Objectives	
b. New Public Management	
c. Knowledge Society and Knowledge Workers	

#### Readings:

1. Ali Shum Shum Nisa, 1984, *Eminent Administrative Thinkers*, New Delhi, Associated Publishing House.
2. Hooja Rakesh and Ramesh K. Arora (ed), 2007, *Administrative Theories, Approaches, Concepts and Thinkers in Public Administration*, Jaipur, Rawat Publications.
3. Maheshwari S.R., 2003, *Administrative Thinkers*, New Delhi Macmillan India.
4. Prasad Ravindra, V. S. Prasad, P Satyanarayana and Y. Pardhasarathi (ed), 2010, *Administrative Thinkers*, New Delhi, Sterling Publishers Pvt. Ltd.
5. प्रसाद रवींद्र डी. व इतर, वासंती फडके (अनु), 2010, *अॅडमिनिस्ट्रेटिव थिंक्सर्स*, पुणे, के सागर पब्लिकेशन्स.
6. Rathod P.B, 2006, *The Galaxy of Administrative Thinkers*, Jaipur, ABD Publishers.

7. पाटील व्ही. बी., 2017, *समग्र लोकप्रशासन*, पुणे, के सागर पब्लिकेशन्स.
8. Shafritz Jay M. and Alber C. Hyde(ed), 1987, *Classics of Public Administration*, Chicago Illinois, The Dorsey Press.
9. Sharma Deepak, 1993, *Administrative Thought of Herbert A. Simon*, Delhi, Kalinga Publications.
10. Sharma Manoj, 2004, *Administrative Thinkers*, New Delhi, Anmol Publication.
11. Singh R. N., 1977, *Management Thought and Thinkers*, Delhi, Sultan Chand and Sons.

## **SKILL ENHANCEMENT COURSE (SEC)**

**( Value/Skill Based Course )**

**Savitribai Phule Pune University**

**Public Administration**

**Syllabus of T.Y.B.A. (Extra Credit)**

**Value/Skill Based Course**

### **Samyukta Maharashtra Movement**

#### **Objectives:**

1. This Course is an introduction to the political process in Maharashtra with special reference to regionalism sub-regionalism and Samyukta Maharashtra Movement.
2. The aim of the course is that students are expected to understand both the historical evolution of Maharashtra's politics and different analyses of politics of the state.
3. It tries to acquaint students with the main issues and concerns in the public life of a regional society as it shaped in the concept of colonialism, nationalism and modernity.

#### **SEMESTER – V**

#### **SEC-2C(2)**

#### **UNIT - I**

##### **1. Regional Aspirations in India**

- a. Concept of Regionalism: Its Nature
- b. Genesis of Regionalism in India
- c. Indian National Congress and Regionalism

#### **UNIT - II**

##### **2. Samyukta Maharashtra Movement - I**

- a. Emergence and Development of Regional Consciousness in Maharashtra
- b. Preferential Treatment for the 'Sons of Soil'
- c. Difficulties in the Formation of Samyukta Maharashtra



### **Readings:**

1. बोकील नीता, २०१२, *महाराष्ट्राचा राजकीय इतिहास- १९६० ते १९७२*, मुंबई, मौज प्रकाशन.
2. घारे गोविंद, २०००, *आदिवासी समस्या आणि बदलते संदर्भ*, पुणे, सुगावा प्रकाशन.
3. कांबळे बाळ, २०१७, *भारतातील छोट्या राज्यांची मागणी*, नांदेड, अनुराधा प्रकाशन.
4. Jain V. Ashok, 1999, *Political Process in Maharashtra*, Mumbai, Sheth Publishers Pvt.Ltd.
5. Jayachandran Usha(eds.), 2014, *Human Development Report, Maharashtra 2012: Toward Inclusive Human Development*, New Delhi, Sage.
6. Kamble Bal, 2015, *Performance Of Scheduled Caste MLAs in Maharashtra Vidhan Sabha*, Nanded, Anuradha Publication.
7. Lele Jayant, 1982, *Elite Pluralism and Class Rule, Political Development in Maharashtra*, Mumbai, Popular.
8. पळशीकर सुहास आणि नितीन बिरमल(संपा.), २००२, *महाराष्ट्राचे राजकारण : राजकीय प्रक्रियेचे स्थानिक संदर्भ*, पुणे, प्रतिमा प्रकाशन.
9. Palshikar Suhas and Rajeshwari Deshpande, 1999, *Maharashtra: Electoral Politics and Structures of Domination*, Pune, Dept. of Politics and Public Administration, University of Pune.
10. पळशीकर सुहास आणि कुलकर्णी सुहास(संपा.), २००७, *महाराष्ट्रातील सत्ता संघर्ष : राजकीय पक्षांची वाटचाल*, पुणे, समकालीन प्रकाशन.
11. पवार प्रकाश, २००९, *महाराष्ट्राच्या सत्ता संघर्षाचा आलेख*, पुणे, डायमंड प्रकाशन.
12. पवार प्रमोद, कांबळे बाळ आणि इतर(संपा.), २०१९, *महाराष्ट्रातील स्थित्यंतरे*, जळगाव, अथर्व प्रकाशन.
13. पवार वैशाली, २०१२, *महाराष्ट्राच्या सत्ता संघर्षाचा आलेख*, पुणे, डायमंड प्रकाशन.
14. Phadk Y. D., 1979, *Politics and Language*, Mumbai, Himalaya Publishing House.
15. Thakkar Usha and Kulkarni Mangesh, 1995, *Politics in Maharashtra*, Mumbai, Himalaya Publishing House.

**Savitribai Phule Pune University**

**Public Administration**

**Syllabus of T.Y.B.A. (Extra Credit)**

**Value/Skill Based Course**

**Samyukta Maharashtra Movement**

**Objectives:**

1. This Course is an introduction to the political process in Maharashtra with special reference to regionalism sub-regionalism and Samyukta Maharashtra Movement.
2. The aim of the course is that students are expected to understand both the historical evolution of Maharashtra's politics and different analyses of politics of the state.
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**SEMESTER – VI**

**SEC-2D(2)**

**UNIT - I**

**1. Samyukta Maharashtra Movement - II**

- a. Rethinking on the Bilingual Bombay state
- b. Formation of the Samyukta Maharashtra
- c. The aftermath of the formation of Samyukta Maharashtra

**UNIT - II**

**2. Emergence of Sub-Regionalism in Maharashtra**

- a. Regional Imbalance and Regional Development Boards
- b. Seperate Vidarbha State
- c. Marathwada Vikas Andolan

**Readings:**

1. बोकील नीता, २०१२, महाराष्ट्राचा राजकीय इतिहास- १९६० ते १९७२, मुंबई, मौज प्रकाशन.
2. घारे गोविंद, २०००, आदिवासी समस्या आणि बदलते संदर्भ, पुणे, सुगावा प्रकाशन.
3. कांबळे बाळ, २०१७, भारतातील छोट्या राज्यांची मागणी, नांदेड, अनुराधा प्रकाशन.

4. Jain V. Ashok, 1999, *Political Process in Maharashtra*, Mumbai, Sheth Publishers Pvt.Ltd.
5. Jayachandran Usha(eds.), 2014, *Human Development Report, Maharashtra 2012: Toward Inclusive Human Development*, New Delhi, Sage.
6. Kamble Bal, 2015, *Performance Of Scheduled Caste MLAs in Maharashtra Vidhan Sabha*, Nanded, Anuradha Publication.
7. Lele Jayant, 1982, *Elite Pluralism and Class Rule, Political Development in Maharashtra*, Mumbai, Popular.
8. पळशीकर सुहास आणि नितीन बिरमल(संपा.), २००२, *महाराष्ट्राचे राजकारण : राजकीय प्रक्रियेचे स्थानिक संदर्भ*, पुणे, प्रतिमा प्रकाशन.
9. Palshikar Suhas and Rajeshwari Deshpande, 1999, *Maharashtra: Electoral Politics and Structures of Domination*, Pune, Dept. of Politics and Public Administration, University of Pune.
10. पळशीकर सुहास आणि कुलकर्णी सुहास(संपा.), २००७, *महाराष्ट्रातील सत्ता संघर्ष : राजकीय पक्षांची वाटचाल*, पुणे, समकालीन प्रकाशन.
11. पवार प्रकाश, २००९, *महाराष्ट्राच्या सत्ता संघर्षाचा आलेख*, पुणे, डायमंड प्रकाशन.
12. पवार प्रमोद, कांबळे बाळ आणि इतर(संपा.), २०१९, *महाराष्ट्रातील स्थित्यंतरे*, जळगाव, अथर्व प्रकाशन.
13. पवार वैशाली, २०१२, *महाराष्ट्राच्या सत्ता संघर्षाचा आलेख*, पुणे, डायमंड प्रकाशन.
14. Phadk Y. D., 1979, *Politics and Language*, Mumbai, Himalaya Publishing House.
15. Thakkar Usha and Kulkarni Mangesh, 1995, *Politics in Maharashtra*, Mumbai, Himalaya Publishing House.

# SAVITRIBAI PHULE PUNE UNIVERSITY



## TYBA Psychology Syllabus

From the academic year 2021-22

### Outcome Based Syllabus

	<b>Semester-V</b>	<b>Semester-VI</b>	
G-3	SEC 1 C (3) (Industrial and Organizational Psychology)	SEC 1 D (3) (Applied Psychology)	
S-3	DSE 1 C (3)+(1) Testing Project Psychological Testing (Theory)	DSE 1 D (3)+(1) Research Project Experimental Psychology (Theory)	
S-4	DSE 2 C (3)+(1) Statistics (Psychological Tests)	DSE 2 D (3)+(1) Statistics (Psychological Experiments)	
	SEC 2 C (2) (Value/skill based course) (Personality Development)	SEC 2 D (2) (Value/skill based course) (Personality Development)	
	G.E. 1 (2)	G.E.2 (2)	

- One credit is equal to one clock hour
- It is expected to refer Bloom's taxonomy

# **SEMESTER-V**

## **SEC 1 C (3) : INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY**

After completing the course, student should be able to:

CO1: Describe the concept of industrial and organizational psychology, selection and training, evaluation and motivation at workplace.

CO2: Explain job profile, job analysis, recruitment techniques and employee training.

CO3: Identify and classify the appraisal rating system.

CO4: Compare different theories of motivation.

CO5: Evaluate the training programme and job performance.

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### UNIT-1: INDUSTRIAL AND ORGANIZATIONAL (I/O) PSYCHOLOGY- NATURE AND SCOPE

1.1: I/O Psychology: Meaning, subject matter and functions of Industrial Psychology

1.2: The history of I/O Psychology

1.3: I/O Psychology in the present

1.4: Future of I/O Psychology

### UNIT-2: PERSONNEL SELECTION AND TRAINING

2.1: Job Profile, job analysis and Recruitment techniques

2.2: Interviews, psychological testing and Needs assessment for training

2.3: Psychological Principles in training and training for knowledge and skill

2.4: Evaluation of Training Programme

### UNIT- 3: EVALUATING JOB PERFORMANCE

3.1: Uses of performance evaluation: Downsizing, promotion, seniority

3.2: Sources of evaluation: The evaluator and performance appraisal

3.3: Appraisal rating systems: Graphic rating scales and rating errors

3.4: Non-rating evaluation methods: Checklists and comparison methods

### UNIT-4: MOTIVATION AT THE WORKPLACE [12 Periods]

4.1: Concept of work motivation

4.2: Need theories: McClelland, Herzberg

4.3: Cognitive theories: Goal Setting Theory, Self Efficacy Theory

4.4: Motivation: Self discipline – seven step process

## READING:

- Aamodt, M.G. (2007). *Industrial and organizational psychology: An applied approach*. US: Thomson & Wadsworth.
- Berry, L.M. (1998), reprint 2010. *Psychology at work: An introduction to Industrial and Organizational Psychology*. N.Y.: McGraw-Hill International Editions.
- French (2015). *Organization Development: Behavioral Science Interventions for Organization Improvement*, 6/e , Pearson, Education
- Gadekar, Jamale, Rasal ( 2013), *Audyogik va Sanghatanatmak Manasshastra*
- Luthans, F. (1995). *Organizational behavior (7th ed)*. New York: McGraw- Hill, inc.
- McShane, et al. (2006). 1st reprint. *Organizational behavior*. N.D.: Tata McGraw-Hill
- Miner, J.B. (1992). *Industrial-Organizational Psychology*. N.Y.: McGraw-Hill
- Pandit, R., Kulkarni, AV. & Gore, C. (1999). *Manasashastra: Audyogik aani vyavasayik upayojan*. Nagpur: Pimpalpure & Co.
- Robbins, S.P. & Sanghi, S. (2007). *Organizational behavior (11th Ed.)*. New Delhi: Pearson Education.
- Robbins, S.P.; Judge, T.A; and Sanghi, A (2009). *Organizational behavior*. N.D.: Pearson Prentice Hall.
- Schultz, D. and Schultz, S. E. (2006). *Psychology and work today*. 8th ed. N.D.: Pearson Edu.
- Singh ( 2015). *Organizational Behaviour : Text and Cases*, 2/e - Pearson, Education
- Warren ( 2015). *Occupational Psychology: An Applied Approach*, 1/e, Pearson Education

## **DSE 1 C (3): PSYCHOLOGICAL TESTING (THEORY) + (1) TESTING PROJECT**

After completing the course, student should be able to:

CO1: Describe the concept of psychological test, reliability, validity and norms.

CO2: Classify and categorize psychological tests, reliability- validity-norms types.

CO3: Identify the reliability and validity of psychological tests,

CO4: Evaluate the types of norms.

CO5: Conduct testing project for behaviour analysis.

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### UNIT-1: INTRODUCTION OF PSYCHOLOGICAL TESTS

1.1: What is psychological test? History

1.2: Classification, characteristics

1.3: Steps in test construction

1.4: Ethical issues in test construction

### UNIT-2: RELIABILITY OF TESTS

2.1: Reliability: Meaning, true score estimation

2.2: Types: Test-retest, Split-half, Parallel-form and Scorer reliability

2.3: Standard error of measurement

2.4: Reliability- Influencing factors and improvement techniques

### UNIT-3: VALIDITY OF TESTS

3.1: Validity: Meaning,

3.2: Types: Content, criterion and construct

3.3: Convergent and discriminant validity

3.4: Validity: Statistical calculation method

### UNIT-4: NORMS

4.1: Meaning of norms, Norm-referencing and Criterion-referencing tests

4.2: Types of norms: Age, grade, percentile and standard-score norms

4.3: Injunctive norms, descriptive norms, consensus norms, critical norms

4.4: Reciprocity norms, social-responsibility norms, situational norms



## **FOR 1 CREDIT: GROUP TESTING:**

1. For group testing, a small sample (n=30 at least) should be taken.
2. Any one standardized psychological test should be administered to the sample.
3. Responses should be scored as per the instructions given in the manual.
4. Report for group testing should be structured as follows:
  - a. Purpose of the group testing
  - b. Description of the test, e.g. author, psychometric properties, uses of test.
  - c. Tabular presentation of scores and results
  - d. Qualitative analysis, if applicable
  - e. Interpretation at group level
- f. Any other relevant finding
- g. Conclusion
- h. References

## **READING**

Anastasi, A. & Urbina, S. (2009). Psychological testing. N.D.: Pearson Education.

Asch, S. E. (1955). Opinions and social pressure. *Scientific American*, 193, 31- 35.

Desai, B. and Abhyankar, S.C. (2001). *Prayogik Manasashastra ani Samshodhan Paddhati*. Pune: Narendra Prakashan.

Hechter, M. and Opp, K. D. (2001). *Social Norms*. New York: Russell Sage Foundation.

Kaplan R.M.& Saccuzzo D.P.(2005) *Psychological Testing,Principles ,Applications and Issues*.Sixth Ed. Cengage Learning India, Pvt Ltd.

Sherif, M. (1936). *The Psychology of Social Norms*. New York: Harper and Row. Asch, S. (1952). *Social Psychology*. (Englewood Cliffs, NJ: Prentice Hall)

Singh, A.K. (2006). *Tests, Measurements and research methods in behavioural sciences*. Patna: Bharati Bhavan.

## **DSE 2 C (3): PSYCHOLOGICAL TESTS + (1) STATISTICS**

After completing the course, student should be able to:

CO1: Describe mapping of human behaviour.

CO2: Explain general ability testing, personality, adjustment and attitude.

CO3: Identify and classify the intellectual ability and personality patterns.

CO4: Conduct testing and evaluate intellectual ability, personality traits, adjustment and attitudes of participant.

CO5: Analyze statistical methods employed in behaviour analysis.

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### **I] GENERAL AND SPECIAL ABILITY TESTING (any two)**

1. Malin's Verbal OR Performance Scale
2. Standard Progressive Matrices (SPM)
3. Binet Kamath Test
4. Test of Creativity
5. Differential Aptitude Tests (DAT)- Any two sub tests
6. Dexterity test

### **II] PERSONALITY (any two)**

1. Eysenck Personality Questionnaire
2. NEO-FFI
3. Sentence Completion Test
4. 16 PF
5. Introversion-Extraversion Test
6. Interest inventory
7. Type A and Type B personality test.

### **IV] ADJUSTMENT (any one)**

1. Family
2. School
3. Marriage
4. Expectations from the Life partner Scale

### **V] TESTING OF ATTITUDE (any one)**

1. Marriage
2. Religion
3. Optimism-pessimism
4. Attitude towards the mother scale.

## **FOR 1 CREDIT: STATISTICS:**

1. Frequency distribution, Normal Probability curve
2. Measures of central tendency: Mean, Median, Mode for grouped and ungrouped data
3. Measures of variability: Range, Standard Deviation and Quartile Deviation (Q1, Q3 and Q) for grouped data.

## **READINGS:**

Anastasi, A. & Urbina, S. (2009). Psychological testing. N.D.: Pearson Education.

Broota, K. D. (1989, reprint 2014). Experimental design in Behavioural Research. New Age International Pvt. Ltd., New Delhi.

Chadha N.K.(2009),Applied Psychometry, Sage Publication Pvt Ltd. New Delhi.

Desai, B. and Abhyankar, S.C. (2001). Prayogik Manasashastra ani Samshodhan Paddhati. Pune: Narendra Prakashan.

Garrett, Henry E. (2006). Statistics in Psychology and Education(1st Indian reprint).Surjeet Publications, Delhi-7.

Gliner, J. A., & Morgan, G. A. (2000). Research methods in applied settings: An integrated approach to design and analysis. Mahwah, NJ: Lawrence Erlbaum.

Kaplan R. M. & Saccuzzo D.P.(2005) Psychological Testing, Principles, Applications and Issues. Sixth Ed. Cengage Learning India, Pvt Ltd.

Mangal, S. K. (2009).*Statistics in Psychology and Education* (2<sup>nd</sup> Edition- 10<sup>th</sup> printing). PHI learning Pvt. Ltd., New Delhi.

## **SEC 2 C (2) (VALUE/SKILL-BASED COURSE) : PERSONALITY DEVELOPMENT-1**

After completion of this course, student should be able to:

CO1: Describe the concept of personality.

CO2: Identify and classify various personality traits.

CO3: Correlate real life behavioural patterns with theoretical assumptions.

CO4: Apply psychological skills in daily life situations.

---

### UNIT-1: PERSONALITY

- Concept and Role of Personality: Definitions,
- Factors affecting personality

### UNIT -2: TRAITS

- Personality Traits
- The 7 habits of highly effective people

### UNIT -3: FIVE PILLARS OF PERSONALITY DEVELOPMENT

- Introspection,
- Self- Assessment,
- Self-Appraisals,
- Self-Development,
- Self-Introduction

### **READINGS:**

Covey Stephen (2004). The 7 habits of highly effective people. Franklin Covey Co.

Hurlock Elizabeth (1988). Personality Development, McGraw Hill

Natu, S.A, ( ). Personality Development, Revised Edition, Nirali Prakashan, Pune

# **SEMESTER-VI**

## **SEC 1 D (3): APPLIED PSYCHOLOGY**

After completing the course, student should be able to:

CO1: Describe the concept of applied psychology, educational psychology, family structure and developmental patterns.

CO2: Know the clinical psychology related mechanisms, social issues, and criminal behavior.

CO3: Classify the intellectual ability, abnormality, criminal behavior.

CO4: Identify the problems and solutions in the field of education,

CO5: Evaluate the interpersonal relations.

CO6: Apply psychological remedies to assess abnormal behaviour, to tackle the social issues and to rectify the problematic behaviour.

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### UNIT-1: INTRODUCTION APPLIED PSYCHOLOGY

1.1 Definition, Nature and Scope of applied Psychology

1.2 Fields of Applied psychology

1.3 Clinical applications (classification of mental disorders DSM V , ICD 10 , therapies – CBT, Client centered therapy, REBT )

1.4 Cognitive Neuro Science (nature and major applications – PNI, EEG, MRI, CT, PET etc)

### UNIT-2: APPLICATIONS IN EDUCATION

2.1 Definition, Nature and Scope of Educational Psychology

2.2 Effective Teaching – Learning Methodologies / Pedagogies (group discussions, projects, presentations, interactive methods)

2.3 Issues of Various Categories of Challenged Students – Physically, mentally, economically challenged, Intellectual Disabilities (ID)

2.4 Problems and Solutions to Educational Problems – physical environment, Government policies, school and higher education, Ashramshalas

### UNIT-3: FAMILY AND DEVELOPMENTAL APPLICATIONS

3.1 Definition, Nature and Scope of Developmental Psychology

3.2 Issues of Adolescents (stress and strain, identity crisis, adjustment to physiological and psychological changes)

3.3 Family and Marital Problems and Solutions

3.4 Love, Relationships (dating, live in) and Break Ups

### UNIT-4: SOCIAL ISSUES AND NEW TRENDS IN APPLIED PSYCHOLOGY

4.1 Role of Psychologists in tackling Social Issues (interventions, research, policy level work)

4.2 Psychology of Terror, Psychology of Corruption

4.3 Definition, Nature and Fields (correctional, investigative)

4.4 Criminal Psychology, Cyber Crimes, Violence (meaning and types), Investigative Procedures (role of the psychologist) Law – contribution of Psychology to law

### **READINGS: :-**

Bayne and Horton (2003). *Applied psychology*, Sage Publications

Weiten and Lloyd (2004). *Psychology applied to Modern Life and Adjustment in 21st Century*, Thomas Wadsworth Publications.

Sharma, R (2009). *Applied Psychology*, Atlantic Publications

Bachav, A. M. (2012). *Applied Psychology*, Chandralok Prakashan

Snyder C.R. & Shane J. Lopez (2007). *Positive Psychology*, Sage Publications

Taylor Shelley (2012). *Health Psychology*: Tata McGraw-Hill

David F. Marks, Michael Murray, Brian Evans, Carla willing Cailine Woodall & Catherine E Sykes, (2006). *Health Psychology*, Sage Publications

Richard H. Cox (2002). *Sport Psychology*, McGraw –Hill Higher Education

## **DSE 1 D (3): EXPERIMENTAL PSYCHOLOGY (THEORY) + (1) RESEARCH PROJECT**

After completing the course, student should be able to:

CO1: Describe the process of experiment in psychology, concept of psychophysics.

CO2: Explain problem, hypothesis, variables, sampling in experiment.

CO3: Identify and classify the learning system, methods of psychophysics.

CO4: Compare laws of psychophysics, types of hypotheses.

CO5: Conduct research based project.

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### UNIT-1: INTRODUCTION AND HISTORY OF EXPERIMENTAL PSYCHOLOGY

1.1: What is experiment? Characteristics, types

1.2: Contribution of eminent psychologists in experimental psychology

1.3 Scientific method: definition, nature

1.4: Social scientific research

### UNIT-2: PROBLEM AND HYPOTHESIS IN RESEARCH

2.1: What is problem? Definitions, origin, sources and selection

2.2: Statement of problem

2.3: Hypothesis: Definition, formulation, sources

2.4: Types of hypotheses

### UNIT-3: VARIABLES AND SAMPLING

3.1: What is variable? Definitions, types

3.2: Controlling of variables

3.3: Sampling: Meaning and types

3.4: Sampling distribution and sampling error

### UNIT-4: PSYCHOPHYSICS AND HUMAN LEARNING

4.1: What is psychophysics? Methods of psychophysics

4.2: Weber's law and Fechner's law, Signal detection theory (SDT)

4.3: Definition and nature of Human learning.

4.4: Methods of Human learning.

1. Serial Learning, 2. Distributed Vs Undistributed, 3. Partial Vs Whole 4 Structured



## **For 1 Credit: PROJECT:**

1. For project, a sample of at least 30 subjects should be taken
2. Project report should be structured as follows
  - a. Introduction and definition of basic concepts
  - b. Rationale/significance of the study
  - c. Hypothesis / Or Exploratory Study if Qualitative
  - d. Sample
  - e. Tools for data collection
  - f. Statistical analysis / Qualitative Analysis
  - g. Results, discussion and conclusion
  - h. Limitations and suggestions
  - i. References

## **READING**

Christensen, L. B.; Johnson, R. B.; Turner, L. A (2014). Research Methods, Design and Analysis. Pearson

D'Amato, M.R. (2009). Experimental psychology: Methodology, psychophysics and learning. N.D.: Tata McGraw-Hill.

Kerlinger, F.N. (1995). Foundations of behavioral research. New York: Rinehart Winston. Inc. Surjeet Publications.

Kothari, C.R. (reprint 2009). Research methodology: Methods and techniques. New Delhi: Wiley Eastn Ltd.

McBurney, D.H. and White, T.L. (2007). Research methods. US: Cengage

Singh, A.K. (2006). Tests, Measurements and research methods in behavioural sciences. Patna: Bharati Bhavan.

Solso, R.L., MacLin, M.K. (2008). Experimental psychology: A case approach. N.D.: Dorling Kindersley Pvt. Ltd.

Tiwari Govind and Pal Roma (1985). Experimental Psychology: A Dynamic Approach. Vinod Pustak Mandir, Agra

Woodworth, R.S. & Schlosberg, H. (reprint 2008, 6th ed.), Experimental Psychology. ND: Oxford & IBH Publishing Co. Pvt. Ltd.

Zachmeister, J.E., Zachmeister, E.B., and Shaughnessy, J.J. (2009). Essentials of research methods in psychology. N.D.: Tata McGraw-Hill.

## **DSE 2 D (3): PSYCHOLOGICAL EXPERIMENTS + 1 STATISTICS**

After completing the course, student should be able to:

CO1: Explain psychophysics, various cognitive processes of human being.

CO2: Classify and compare psychological experiments.

CO3: Conduct laboratory experiments.

CO4: Analyse statistical base of human behavior.

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### **I] PSYCHOPHYSICS (any one)**

1. Method of Limits- RL or DL
2. Method of Constant Stimuli- RL or DL
3. Method of Average Error: PSE and CE

### **II] ATTENTION (any one)**

1. Divided attention
2. Span of attention
3. Stroop effect

### **III] PERCEPTUAL PROCESSES (any one)**

1. Illusion
2. Size constancy
3. Retinal color zones
4. Reaction time
5. Depth perception

### **IV] THINKING AND PROBLEM SOLVING (any one)**

1. Effect of mental set on problem solving
2. Maze learning
3. Problems solving- Pyramid puzzle / Wiggly Blocks / Heart-and-Bow puzzle

### **V] LEARNING (any one)**

1. Bilateral transfer
2. Effect of knowledge of results
3. Habit interference
4. Serial learning

### **VI] MEMORY (any one)**

1. Recall and recognition
2. Retroactive inhibition / Proactive inhibition
3. Short Term Memory

## **FOR 1 CREDIT: Statistics:**

1. Rank Difference Correlation and Chi-square.

2: Product moment correlation

## **READINGS:**

D'Amato, M.R. (2009). Experimental psychology: Methodology, psychophysics and learning. N.D.: Tata McGraw-Hill.

Desai, B. and Abhyankar, S.C. (2001). Prayogik Manasashastra ani Samshodhan Paddhati. Pune: Narendra Prakashan.

Jalota, S. (1962). Experiments in psychology. Asia Publishing House.

Mohanthly. Experiments in psychology.

Mohsin, S. M. (1975). Experiments in psychology. Orient Longman.

Parameshwaran, E. G. & Rao, B. T. (1968). Manual of experimental psychology. Bombay: Lalvani Publishing House.

Postman, L. & Egan, J.P. (1949), reprint 2009. Experimental psychology: An introduction. ND: Kalyani Publication.

Ranjit Kumar (2014). Research Methodology: A step by step guide for beginners. Pearson

Rajamanickam, M. (2005). Experimental Psychology: with Advanced Experiments, Volume 1 & 2. New Delhi: Concept Publishing Company.

Tinker, M.A. & Russell, W.A. Introduction to methods in experimental psychology. Appleton – Century Crofts.

Tiwari Govind and Pal Roma (1985). Experimental Psychology: A Dynamic Approach. Vinod Pustak Mandir, Agra

Woodworth, R.S. & Schlosberg, H. (reprint 2008, 6th ed.), Experimental Psychology. ND: Oxford & IBH Publishing Co. Pvt. Ltd.

## SEC 2 D (2) (VALUE/SKILL-BASED COURSE) : PERSONALITY DEVELOPMENT-2

After completion of this course, student should be able to:

CO1: Describe the concept of self-esteem and personality development.

CO2: Identify and classify behavioural assessment techniques.

CO3: Evaluate personality of individuals.

CO4: Apply psychological skills to develop owns personality.

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### UNIT -1: CORE ASPECT OF PERSONALITY: SELF

- Self Esteem and Personality Development: Definitions,
- Negative and Positive Self Esteem

### UNIT -2: ASSESSMENT TECHNIQUES

- Personality Development and its Applications: Mind mapping, Competency mapping, 360-degree assessments

### Unit -3: DEVELOPMENT PROCESS

- Development of an Ideal Personality: Communication, Decision making, Ethics, Time management

### READINGS:

Hurlock Elizabeth (1988). Personality Development. McGraw Hill

Natu, S.A, ( ). Personality Development, Revised Edition, Nirali Prakashan, Pune

Sanghi Seema (2016). The Handbook of Competency Mapping (3<sup>rd</sup> Edn ) . Sage

SN: Examination and evaluation pattern will be announced soon by BOS- Psychology



## Savitribai Phule Pune University (Choice Based Credit System-70:30-Pattern)

(w. e. f- 2021-2022)

### T. Y. B. A- English

Semesters	New Nomenclature of Courses/Papers	Old Nomenclature of Courses/Papers	Credits
V	CC-Compulsory English	Compulsory English	03
VI	CC-Compulsory English	Compulsory English	03
V	SEC-1-C	G-3	03
VI	SEC-1-D	G-3	03
V	DSE-1-C	S-3	3+1=04
VI	DSE-1-D	S-3	3+1=04
V	DSE-2-C	S-4	3+1=04
VI	DSE-2-D	S-4	3+1=04
V	SEC-2-C	----	02
VI	SEC-2-D	----	02

### T. Y. B. A. Compulsory English

(CC-Core Course- 03 Credit)

#### **Rationale:**

The present course is a core course and it basically consists of two components: the literature component and the skills component. The literature component includes some of the best samples of English short stories, essays and poems written by writers of different nationalities (British, American, Indian etc.) This cultural mix is deliberate. We are living in a globalized world and our students need to have at least a cursory acquaintance with different cultures in the outside world. This is particularly important in a pluralistic society like ours. The core course is a part of the humanities. It aims at contributing to the linguistic and communicative abilities of the students. At the same time it also aims at fostering humanitarian attitude in our students and make them better human beings. Our prose and poetry selections in the literature part of the syllabus take care of these humanistic and aesthetic considerations.

The skills component of the syllabus includes language skills (i.e. grammar part and writing skills), soft skills and employability skills. All these are necessary in the contemporary world to make our students confident and enable them to face the real life challenges successfully. The

core course is essentially a language course. Linguistic competence is absolutely necessary for achieving success in almost all the fields of life. Hence we have concentrated on some important aspects of grammar. There are certain writing skills and communicative skills required in all work environments today. These have also been included in the syllabus. Some soft skills and employability skills are necessary from the viewpoint of the employer as well as the employee for his own career advancement. In fact no employee can survive without these skills in the modern day work place. We have kept all these practical considerations in mind while preparing the present syllabus. It is thus a composite course focusing on human values and useful, practical skills.

**Objectives:**

- a) To familiarize students with some excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English.
- b) To enable students to become competent and effective users of English in real life situations.
- c) To contribute to the overall personality development of the students.
- d) To instill humanitarian values and foster sympathetic attitude in the students.
- e) To train the students in practical writing skills required in work environment.
- f) To impart knowledge of some essential soft skills to enhance their employability.

**\*Each** semester shall have 3 credits for teaching. Each credit is equal to 15 hours, so this course shall have 45 teaching hours. In addition to that there shall be 03 hours allotted to internal evaluation. **(3x15=45+3=48).**

**\*Considering** the choice-based credit system (CBCS) and the semester pattern, both Semesters-V & VI will have a uniform evaluation pattern of 100 marks each. There will be an 'Internal Examination' for 30 marks and 'Semester-end Examination' for 70 marks.

**\*The Internal** Examination for 30 marks will be conducted at college level.

- a) Assignment/group discussion/tutorial/seminar/oral/project for 10 marks
- b) A Mid-semester Written Test for 20 marks

## **SEMESTER-V**

**Prescribed Text: *Exploring New Horizons* (Ed-Board of Editors- Orient BlackSwan)**

### **Unit-I- Prose (12 Clock Hours)**

1. The Phantom Luncheon – Saki
2. Function of Education –J. Krishnamurti
3. God sees the Truth but Waits – Leo Tolstoy

### **Unit-II- Poetry (12 Clock Hours)**

1. The Neutral Tones – Thomas Hardy
2. Strange Meeting – Wilfred Owen
3. Have you got a brook in your little heart – Emily Dickinson

### **Unit-III- Grammar (08 Clock Hours)**

1. Adverbs and their types (manner, place, time, frequency etc.)
2. Synthesis of sentences by using participles, infinitives, adverbials etc.)
3. Types of Sentences according to function: Declaratives, Interrogatives, Imperatives

### **Unit-IV- Writing (08 Clock Hours)**

1. Paragraph Writing
2. Note-making and Note-taking
3. Reference Skills (Using dictionaries/thesaurus/encyclopedias/year books/table of contents/indices etc)

### **Unit-V- Soft Skills and Employability Skills (05 Clock Hours)**

1. Body Language/Non-verbal Communication
2. Tips for Effective Communication
3. Telephone Skills
4. Teleconferences

## **SEMESTER-VI**

### **Prescribed Text: *Exploring New Horizons* (Ed-Board of Editors-Orient BlackSwan)**

#### **Unit-I- Prose (12 Clock Hours)**

1. Shakespeare's Sister – Virginia Woolf
2. After Twenty Years – O. Henry
3. The Conjuror's Revenge – Stephen Leacock

#### **Unit-II- Poetry (12 Clock Hours)**

1. The Man of Life Upright – Thomas Campion
2. Money Madness – D.H. Lawrence
3. The Toys – Coventry Patmore

#### **Unit-III- Grammar (08 Clock Hours)**

1. Transforming Declarative sentences into Yes-No questions
2. Transforming Declarative sentences into Wh- questions
3. Transforming Positive Imperative sentences into Negative imperatives

#### **Unit-IV- Writing (08 Clock Hours)**

1. Email Writing
2. Using Graphs and Charts

3. Dialogue Writing

**Unit-V- Soft Skills and Employability Skills (05 Clock Hours)**

1. Stress Management
2. Motivation and Positive Approach
3. Goal Setting
4. Adaptability Skills

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**Skill Enhancement Course (SEC 1-C & SEC 1-D)**

**(Old G-3)**

**(w. e. f. 2021- 2022)**

**Title of the Paper: Enhancing Employability Skills**

**(Credit-3)**

**Prescribed Text- *Aspirations: English for Careers* (Board of Editors-  
Orient Black Swan)**

**Rationale:**

TYBA students are on the threshold of their career. Hence, it is necessary to orient and prepare them for different careers they can join after graduation. Considering the various career opportunities available to Arts graduates, the syllabus aims at awareness raising, competence building and skill enhancement of the learners. All the units in the book, besides offering exposure to the use of English for different careers, are radically designed to keep pace with the age of technology and to empower the learners for the present as well as the upcoming career avenues.

**Course Outcomes:**

After studying the paper successfully, the learners will be able:

1. To get the awareness of career opportunities available to them.
2. To identify the career opportunities suitable to them.
3. To understand the use of English in different careers.
4. To develop competence in using English for the career of their choice.
5. To enhance skills required for their placement.
6. To use English effectively in the career of their choice.
7. To exercise verbal as well as nonverbal communication effectively for their career.



**\*Each** semester shall have 3 credits for teaching. Each credit is equal to 15 hours, so this course shall have 45 teaching hours. In addition to that there shall be 03 hours allotted to internal evaluation. ( $3 \times 15 = 45 + 3 = 48$ ).

**\*Considering** the choice-based credit system (CBCS) and the semester pattern, both Semesters-V & VI will have a uniform evaluation pattern of 100 marks each. There will be an 'Internal Examination' for 30 marks and 'Semester-end Examination' for 70 marks.

**\*The Internal** Examination for 30 marks will be conducted at college level.

- a) Assignment/group discussion/tutorial/seminar/oral/project for 10 marks
- b) A Mid-semester Written Test for 20 marks

## **SEMESTER-V(SEC 1-C)**

### **Course contents:**

#### **Unit-I- Exploring Careers (12 Clock Hours)**

1. Creative Writing
2. Translation
3. Mass Communication and Journalism
4. Academia and Other Careers

#### **Unit-II- Basic Preparation for Jobs (08 Clock Hours)**

1. Application Letter and Résumé Writing
2. GDPI
3. Writing Notices and Agendas
4. Writing Minutes

#### **Unit-III- English for Employability Skills (13 Clock Hours)**

1. Style and Techniques for Effective Communication
2. Description, Narration and Demonstration in English
3. Soft Skills for Employers
4. Soft Skills for Employees

#### **Unit-IV- English for Corporate Field (12 Clock Hours)**

1. English for Sales Services
2. English for Customer Services
3. Presentation Skills
4. Writing a Project Report

## **SEMESTER-VI (SEC 1-D)**

**Prescribed Text- Aspirations: English for Careers** (Board of Editors-  
Orient Black Swan)

### **Unit-I- English for Competitive Examinations (09 Clock Hours)**

1. Vocabulary
2. Tenses
3. Prepositions
4. Précis Writing

### **Unit-II- English for Research Purposes (12 Clock Hours)**

1. Impersonal and Objective Style
2. Writing a Research Proposal
3. Writing a Research Paper
4. Writing a Short Dissertation

### **Unit-III- Content Writing (12 Clock Hours)**

1. Introduction to Content Writing
2. Writing Blog Posts and Articles
3. Writing for Websites
4. Writing for Social Media Platforms

### **Unit-IV- English for Digital Marketing (12 Clock Hours)**

1. Introduction to Advertisements
2. Newspaper Advertisements
3. Advertisements on Television and Radio Channels
4. Advertisements on Internet

### **SELECT BIBLIOGRAPHY**

1. Bakshi Rakesh Anand. 2019. Let's Talk On Air: Conversations with Radio Presenters. Puffin
2. Bill Mascull. 2010. Business Vocabulary in Use: Elementary to Pre-intermediate. Cambridge University Press
3. Chaskar, Jagadale, Bhabad, Raskar, Pawar. Ed. 2020. Horizons English in Multivalent Contexts. Orient BlackSwan
4. Donald Miller. 2017. Building a Story Brand. HarperCollins
5. Donna Papacosta. 2013. The Podcast Scripting Book. Trafalgar Communications
6. Dorothea Brande. 1981. Becoming a Writer. TarcherPerigee
7. Elizabeth Walter. 2010. Collins Easy Learning Writing. HarperCollins UK
8. Erica Williams. 2008. Presentations in English. Macmillan
9. Gupta Kounal. 2020. Content Writing Handbook. Henry Harvin

10. Haigh Rupert. 2004. Legal English. Cavendish Publishing Limited
11. Henry Emery, Andy Roberts. 2008. Aviation English. Macmillan.
12. Karen Englander, James N. Corcoran. 2019. English for Research Publication Purposes. Routledge
13. Kohli Simran. 2006. The Radio Jockey Hand Book. Fusion Books
14. Leila R. Smith, Roberta Moore. 2009. English for Careers: Business, Professional, and Technical. USA. Pearson College Div.
15. Marie Drennan, Yuri Baranovsky (Author), Vlad Baranovsky. 2018. Scriptwriting for Web Series: Writing for the Digital Age. Routledge
16. Michael McCarthy Felicity O'Dell. 2004. English Phrasal Verbs in Use. Cambridge University Press
17. Michael Swan. 2001. Practical English Usage. Cornelsen & Oxford University Press
18. Paul J. Hamel. 2016. English for Better Jobs. Amazon Digital Services
19. Pease A. 1998. Body Language. London: Sheldon Press
20. Ronald Carter, Michael McCarthy. 2006. Cambridge Grammar of English: A Comprehensive Guide. Cambridge University Press

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## **Discipline Specific Elective (DSE-1C& DSE-1D)**

**(Old S-3)**

**(w. e. f. 2021- 2022)**

### **Title of the Paper: Appreciating Novel**

**(Credit-3+1=4)**

#### **Rationale:**

The impact of literature in human society is undeniable. Literature acts as a form of expression for each individual author. Some books mirror society and allow us to better understand the world we live in. Literature is important because it teaches the universal human experiences. It also provides different meanings to different people or teaches different lessons to the same person at different stages of his life. The novel is one of the major forms of literature which generally deals imaginatively with human experiences, usually through a connected sequence of events involving a group of persons in a specific setting. It is a genre of fiction and fiction may be defined as a form of art. It is not a short story in prose; instead, it is actually an extensive and illustrated account of series of events that happened right through the life of a character. By studying and appreciating novel, the students can develop their interpretative abilities and enhance their analytical skills.

#### **Objectives:**

- a) To introduce students to the basics of novel as a literary form
- b) To expose students to the historical development and nature of novel
- c) To make students aware of different types and aspects of novel
- d) To develop literary sensibility and sense of cultural diversity in students
- e) To expose students to some of the best examples of novel

\* **Each** semester shall have 3 credits for teaching. Each credit is equal to 15 hours, so this course shall have 45 teaching hours. In addition to that there shall be 03 hours allotted to internal evaluation. **(3x15=45+3=48)**.

\* **Considering** the choice-based credit system (CBCS) and the semester pattern, both Semesters-V & VI will have a uniform evaluation pattern of 100 marks each. There will be an 'Internal Examination' for 30 marks and 'Semester-end Examination' for 70 marks.

\* **The Internal** Examination for 30 marks will be conducted at college level.

- a) Assignment/group discussion/tutorial/seminar/oral/project for 10 marks
- b) A Mid-semester Written Test for 20 marks

\* **Semester V and VI -DSE 3+1 =** One credit is for Research Project/field visit/ or any other Subject-centric activities to be undertaken by the students in consultation with the concerned teacher. The concerned teachers have to evaluate and maintain the record of research project/field visit/ or any other subject-centric activity.

### **SEMESTER-V (DSE-1C)**

#### **Course content:**

#### **A) Theory of Novel: (20 Clock Hours)**

- (a) What is Novel? A brief history of novel as a literary form
- (b) Elements of Novel: Theme, Characters, Plot, Structure Narrative  
Techniques, Point of view, Conflict, Setting and atmosphere, Dialogue
- (c) Types of Novels: epistolary, picaresque, bildungsroman, historical, regional,  
Psychological, satire, realistic, experimental novel, science fiction
- (d) In addition to this, other literary terms related to novel/fiction be considered  
for background study

#### **B) *Silas Marner*- George Eliot (25 Clock Hours)**

### **SEMESTER-VI (DSE-1D)**

#### **A) *A Farewell to Arms*- Ernest Hemingway (20 Clock Hours)**

#### **B) *The Painter of Signs*- R. K Narayan (25 Clock Hours)**

## **Reference Books:**

- 1) E. M. Forster, *Aspects of the Novel*, Harcourt, Inc. 1955
- 2) Terry Eagleton, *The English Novel: An Introduction*. Blackwell, 2005
- 3) Walter Allen, *The English Novel* (London, 1954)
- 4) Arnold Kettle, *Introduction to the English Novel*, (2 vols, London, 1951)
- 5) Ian Watt, *The Rise of the Novel*, London, 1957
- 6) J. Davis, *Factual Fictions: The Origins of the English Novel*, (New York, 1983)
- 7) Geoffrey Day, *From Fiction to the Novel*, (London, 1987)
- 8) Dominic Head, *The Cambridge Introduction to Modern British Fiction, 1950–2000*. Cambridge, 2002
- 9) Walter L. Reed, *An Exemplary History of the Novel: The Quixotic versus the Picaresque*, (Chicago, 1981)
- 10) Richard Chase, *The American Novel and its Tradition*, New York, 1957
- 13) Nadel, Ira Bruce, *Biography: Fiction, Fact and Form*. London: Macmillan, 1984.
- 14) Jonathan Greenberg, *Modernism, Satire and the Novel*, Cambridge University Press, 2011
- 15) Afzal-Khan Fawzia, *Cultural Imperialism and the Indo-English Novel: Genre and Ideology in R.K. Narayan, Anita Desai, Kamala Markandaya, and Salman Rushdie*. University Park (Pennsylvania State UP) 1993.
- 16) Kermode Frank [1966], *The Sense of an Ending: Studies in the Theory of Fiction*, Oxford (OUP) 2000.
- 17) Mukherjee Meenakshi, *Realism and Reality: The Novel and Society in India*, Delhi (OUP) 1985.
- 18) Brian W Shaffer, *Reading the Novel in English 1950–2000*, Blackwell Publishing, 2006
- 19) Dirk Wiemann, *Genres of Modernity Contemporary Indian Novels in English*. Amsterdam – New York, NY 2008
- 20) Jesse Matz, *The Modern Novel: A Short Introduction*, Blackwell, 2004

- 21) John Mullan, How the Novel Works, OUP, 2006
- 22) Meenakshi Mukherji, The Twice Born Fiction. Heinemann Educational Books, New Delhi, 1971
- 23) A. J. Sebastian & N. D. R. Chandra. Literary Terms in Fiction and Prose. Authors Press, 2004

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**Discipline Specific Elective (DSE-2C & DSE-2D)**  
**(Old S-4)**  
**(w. e. f. 2021- 2022)**

**Title of the Paper: Introduction to Literary Criticism**  
**(Credit-3+1=4)**

**Rationale:**

Literary criticism is as ancient as literature. It has provided different views, perspectives, approaches and terms to understand literature in its diverse forms. It consists of interpretation, judgment, analysis and evaluation of literature. It makes readers aware of form and content of literature, structure and substance of literature. It deals with text and context in its analysis and provides many different views on literature. Literary criticism has undergone many changes in its long journey from the classical antiquity to the modern period. It has branched off from its earlier preoccupations like author's superiority and search for universal meaning and has taken on new pursuits. The present course is designed to introduce students to the basics of literary criticism and the age wise important critical concepts.

**Objectives:**

- a) To introduce students to the basics of literary criticism
- b) To make them aware of the nature and historical development of criticism
- c) To make them familiar with the significant critical approaches and terms
- d) To encourage students to interpret literary works in the light of the critical approaches
- e) To develop aptitude for critical analysis

\* **Each** semester shall have 3 credits for teaching. Each credit is equal to 15 hours, so this course shall have 45 teaching hours. In addition to that there shall be 03 hours allotted to internal evaluation. **(3x15=45+3=48).**

\* **Considering** the choice-based credit system (CBCS) and the semester pattern, both Semesters-V & VI will have a uniform evaluation pattern of 100 marks each. There will be an 'Internal Examination' for 30 marks and 'Semester-end Examination' for 70 marks.

\* **The Internal** Examination for 30 marks will be conducted at college level.

- a) Assignment/group discussion/tutorial/seminar/oral/project for 10 marks
- b) A Mid-semester Written Test for 20 marks

\* **Semester V and VI -DSE 3+1** = One credit is for Research Project/field visit/ or any other Subject-centric activities to be undertaken by the students in consultation with the concerned teacher. The concerned teachers have to evaluate and maintain the record of research project/field visit/ or any other subject-centric activity.

**Course Content:**

**SEMESTER-V (DSE-2C)**

**Unit-I- Orientation (15 clock hours)**

1. Literary Criticism- definitions and functions
2. Types of Criticism- historical, biographical, sociological and psychological
3. Literature of knowledge and literature of power
4. Qualities of a good critic

**Unit-II- Traditional Criticism (15 clock hours)**

1. **Classical Criticism** - Aristotle's Concept of Imitation (Ref- Poetics), Longinus's Five Sources of Sublimity (Ref- on the Sublime)
2. **Neo-Classical Criticism**–Dryden's definition of play (Ref-An Essay on Criticism), Samuel Johnson's defense of Shakespeare

**Unit-III- Romantic/Victorian Criticism (15 clock hours)**

Wordsworth's definition of poetry, Coleridge's distinction between fancy and imagination, Matthew Arnold's three estimates of poetry

**SEMESTER-VI (DSE-2D)**

**Unit-I- Modern Criticism (15 clock hours)**

Eliot's theory of impersonality, William Empson's seven types of ambiguity, Georg Lukacs' concept of realism, Sigmund Freud's structure of human mind- id, ego and superego

**Unit-II- New Criticism (15 clock hours)**

Allen Tate's concept of tension, Cleanth Brooks' notion of paradox as the structure of poetry, Wimsatt and Beardsley's concept of intentional fallacy

**Unit-III- Critical Terms and Practical Criticism (15 clock hours)**

**Critical Terms:**

1. Catharsis
2. Allegory
3. Diction
4. Irony
5. Motif and theme
6. Genre
7. Metaphor
8. Point of view

9. Subjective and objective
10. Satire

**Practical Criticism:**

Practical criticism of poems, passages from novels and plays, etc.

(Teachers are advised to deal with poems, prose passages from the poems and novels that students have studied during their graduation)

**Reference Books:**

- 1) Kulkarni Anand et al. (2021). *Explaining Literary Theory*. Namya Press, New Delhi.
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- 11) Hickman Miranda B. and McIntyre John D. *Rereading the New Criticism*. The Ohio State University Press, 2012
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- 17) Ellis John M. *The Theory of Literary Criticism: A Logical Analysis*. University of California Press, 1974.
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**Skill Enhancement Course (SEC 2-C & SEC 2-D)**  
(w. e. f. 2021- 2022)

**Title of the Paper: *Mastering Life Skills and Life Values***

**[Two credit Course (2X15= 30 Clock Hours)]**

**Objectives:**

1. To equip the students with the social skills
2. To train the students interpersonal skills
3. To build self-confidence and communicate effectively
4. To Encourage the students to think critically
5. To learn stress management and positive thinking
6. To enhance leadership qualities
7. To aware the students about universal human values
8. To develop overall personality of the students

**Suggestions to Teachers:**

1. It is a learner-centric course.
2. The course aims at developing skills among the students.
3. Learning can be facilitated through interactive and informal guiding sessions.
4. Participation and up-gradation of the students' performance needs to be encouraged.
5. Practical, Exercises, Activity monitoring, Projects, Seminars, Presentations, Group Discussions are some of the activities that the teachers are expected to encourage.
6. Relevant and innovative ideas of both the students and the teachers are always appreciable for a successful completion of this course
7. The concerned faculty/teachers have to maintain the record of the students as credits to the students need to be given on the basis of preserved records.

**SEMESTER-V (SEC 2-C)**

**Course Content:**

**Life Skills**

1. Meaning and Nature of Life Skills
2. Importance of Life Skills
3. Problem Solving and Decision-making skill
4. Critical and Creative Thinking Skill
5. Interpersonal skills: Understanding and Cooperating with Others
6. Management of Stress and Emotions

## **SEMESTER-VI (SEC 2-D)**

### **Life Values**

1. Meaning and Nature of Values
2. Importance of Human Values
3. Moral Values
4. Ethical Values
5. Professional Values
6. Aesthetic Values
7. Psychological Values
8. Self-Awareness and Self-Management

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**Savitribai Phule Pune University**  
**Faculty of Commerce & Management**  
**Structure for Three - Year**  
**B.Com. Degree course (Choice Based Credit System)**  
**(2019 Pattern)**  
**With effect from June 2019**

**Preamble:-**

Commerce education is that area of education, which develops the required knowledge, skills and attitudes for the handling of Trade, Commerce and Industry. Commerce education is entirely different from other disciplines. Hence, it must charter Course routes to service the aspirations of the nation. To meet the growing needs of the business society, there is greater demand for sound development of commerce education. The relevance of commerce education has become more imperative, this means a marked change in the way commerce and management education is perceived in India. The Commerce education is dedicated to developing tomorrow's leaders, managers, and professionals.

The existing education system of imparting commerce education needs to be more dynamic to incorporate all local and global changes in the field of trade and commerce. The curriculum needs to be restructured accordingly. The learning inputs are required to be more update, skill based and with appropriate applications. This will be achieved through the introduction of Choice based Credit System at undergraduate level.

The choice based credit system offers a cafeteria approach where the students have the liberty to choose courses of their own choice. The credit system allows students to opt for additional courses where he /she can score more than the required credits. The system will focus on student centric learning methods, which include use of Information and Communication Technology, innovative methods of teaching and learning and emphasis on industry interaction to enable the learners to take up professional challenges more effectively.

**1. INTRODUCTION**

The B.Com Degree Course (2019 pattern) will be introduced in the following order:-

- |                       |           |
|-----------------------|-----------|
| a. First Year B.Com.  | 2019-2020 |
| b. Second Year B.Com. | 2020-2021 |
| c. Third Year B.Com.  | 2021-2022 |

The B.Com. Degree Course will consist of six semesters divided into three Years.

The first year (Semester I and II) choice based credit system examination will be held at the end of the each semester.

The Second Year (Semester III and IV) and Third Year (Semester V and VI) choice based credit system examination will be held at the end of each semester.

## 2. ELIGIBILITY

- a) No Candidates shall be admitted to the First Year of the B.Com. Degree Course (**2019 pattern**) unless he/she has passed the Higher Secondary School Certificate Examination of the Maharashtra State Board of Higher Secondary Education Board or equivalent or University with English as a passing Course.
- b) No candidate shall be admitted to the Third Semester examination of the second year unless he/ she has cleared first two semesters satisfactorily for the course at the college affiliated to this University.
- c) No candidate shall be admitted to the Third Year B.Com. (Fifth semester) Degree Course (**2019 pattern**) unless he/she has cleared all the papers of first and second semester Examination of F.Y. B.Com. and has satisfactorily kept terms for the second year (Third and Fourth Semester) and also fifth semester for the third year of B.Com) satisfactorily in a college affiliated to this University.

## 3. A.T.K.T. Rules :

- If a candidate fails in all the courses (subject heads) of passing of semester I shall be allowed to proceed semester II. However, a student who fails in four theory courses and two practical courses at semester I and II taken together may be admitted to semester III & IV.
- If a candidate fails in all the courses (subject heads) of passing of semester III shall be allowed to proceed to semester IV.
- If a candidate fails in all the courses (subject heads) of passing of semester V shall be allowed to proceed to semester VI. However, a student who fails in four theory courses and two practical courses at semester III and IV taken together may be admitted to semester V & VI.
- No candidate shall be allowed to proceed to semester V unless the candidate has cleared semester I & II in all courses (Subjects).
- ATKT rules are applicable for 2<sup>nd</sup> and 4<sup>th</sup> semester.

#### 4. COURSES CARRYING PRACTICALS

- a) Each practical course will be of one credit.
- b) There will be practical and practical examination for semester I and II of the F.Y.B.Com. For the Course Financial Accounting.
- c) There will be practical and practical examinations for the special Courses (Discipline Special Elective) of S.Y.B.Com. (Semester III and IV) and of T.Y.B.Com. (Semester V & VI)
- d) There will be Practical for the S.Y.B.Com level Compulsory Course Business Communication (Semester III and IV) & for T.Y.B.Com Auditing and Taxation (Semester V) & (Semester VI)
- e) A Student must offer the same Special Course at T.Y.B.Com. (Semester V & VI) which he / she has offered at S.Y.B.Com. (Semester III and IV)
- f) In an exceptional case, a student may change the Course chosen by him at third and fourth semester of second year during the first semester of the third year provided he keeps the additional terms of the Course at S.Y.B.Com.

#### Course having practical examination:-

Semester	Type of Course	Name of Practical Course	Course Code
I	Core Course	Financial Accounting – I	PR - 112
II	Core Course	Financial Accounting – II	PR – 122
III	Core Course	Business Communication – I	PR - 231
III	Discipline Specific Elective	<b>Special Course Paper (I)</b> a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism l) Computer Programming and Application	PR- 236
IV	Core Course	Business Communication – II	PR- 241
IV	Discipline Specific Elective	<b>Special Course Paper (I)</b> a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics	PR- 246

		<ul style="list-style-type: none"> <li>g) Business Entrepreneurship</li> <li>h) Marketing Management</li> <li>i) Agricultural and Industrial Economics</li> <li>j) Defence Budgeting, Finance and Management</li> <li>k) Insurance, Transport and Tourism</li> <li>l) Computer Programming and Application</li> </ul>	
V	Core Course	Auditing & Taxation – I	PR- 354
V	Discipline Specific Elective	<p style="text-align: center;"><b>Special Course Paper (II)</b></p> <ul style="list-style-type: none"> <li>a) Business Administration</li> <li>b) Banking and Finance</li> <li>c) Business Law and practices</li> <li>d) Cooperation and Rural Development</li> <li>e) Cost and Works Accounting</li> <li>f) Business Statistics</li> <li>g) Business Entrepreneurship</li> <li>h) Marketing Management</li> <li>i) Agricultural and Industrial Economics</li> <li>j) Defence Budgeting, Finance and Management</li> <li>k) Insurance, Transport and Tourism</li> <li>l) Computer Programming and Application</li> </ul>	PR- 355
V	Discipline Specific Elective	<p style="text-align: center;"><b>Special Course Paper (III)</b></p> <ul style="list-style-type: none"> <li>a) Business Administration</li> <li>b) Banking and Finance</li> <li>c) Business Law and practices</li> <li>d) Cooperation and Rural Development</li> <li>e) Cost and Works Accounting</li> <li>f) Business Statistics</li> <li>g) Business Entrepreneurship</li> <li>h) Marketing Management</li> <li>i) Agricultural and Industrial Economics</li> <li>j) Defence Budgeting, Finance and Management</li> <li>k) Insurance, Transport and Tourism</li> <li>l) Computer Programming and Application</li> </ul>	PR- 356
VI	Core Course	Auditing & Taxation – II	PR- 364
VI	Discipline Specific Elective	<p style="text-align: center;"><b>Special Course Paper (II)</b></p> <ul style="list-style-type: none"> <li>a) Business Administration</li> <li>b) Banking and Finance</li> <li>c) Business Law and practices</li> <li>d) Cooperation and Rural Development</li> </ul>	PR- 365

		e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism <b>l) Computer Programming and Application</b>	
VI	Discipline Specific Elective	<b>Special Course Paper (III)</b> a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism <b>l) Computer Programming and Application</b>	PR- 366

## 5. MEDIUM OF INSTRUCTION

The medium of instruction for B.Com. Degree course shall be either Marathi or English except languages. The Medium of instructions for Business Communication (S.Y.B.Com) shall be English only.

## 6. UNIVERSITY TERMS

The dates for the commencement and conclusion of the first and the second terms shall be as determined by the University Authorities. Only duly admitted students can keep the terms. The present relevant ordinances pertaining to grant of terms will be applicable.

## 7. VERIFICATION AND REVALUATION

The candidate may apply for verification and revaluation or result through Principal of the College which will be done by the University as per ordinance framed in that behalf.

## **8. RESTRUCTURING OF COURSES**

This revised course structure shall be made applicable to the colleges implementing 'Restructured Programme at the undergraduate level from June, 2019. The Colleges under the Restructured Programme which has revised their structure in the light of the "2019 Pattern" shall be introduced with effect from academic year 2019-20.

## **9. STANDARD OF PASSING.**

A candidate is required to obtain 40% marks in Internal Assessment, Practical Examination and Semester End University Examination.

It means that passing separately at internal assessment, practical examination and semester end university examination is compulsory.

## **10. METHODS OF EVALUATION, PASSING, AND EVALUATION CRITERIA:-**

The evaluation of students will be done on three parameters:-

- a. Internal assessment
- b. Practical Examination (list of Courses having practical is given in note No. 4 )
- c. University examination

For university examination, question papers will be set for seventy marks (three hours duration)

Evaluation will be done on a continuous basis, three times during each semester. Internal assessment will be of 30 marks. The colleges need to adopt any three out of the following methods for internal assessment:-

- a. Written examination
- b. Quiz
- c. Presentations
- d. Projects
- e. Assignments
- f. Tutorials
- g. Oral examination



## 11. STRUCTURE OF TRANSCRIPT:

**Conversion of percentage into credit(s) and grade(s):**The following illustrations could be taken as an example for computing SGPA and CGPA from percentage to credits for Honours courses in all disciplines, degree Program courses in Science subjects and degree Program courses in Humanities, Social Sciences and Commerce subjects:

### 1. Percentage to Grades and Grade Points

The following formula may be used to convert marks (%) into letter grades.

Let  $\bar{X}$  = mean of % age marks of all student appeared in the paper.

$\sigma$  = Standard deviation

m = % of marks obtained

Letter grade	Numerical grade	Formula
O (outstanding)	10	$m \geq \bar{X} + 2.5 \sigma$
A+ (Excellent)	9	$\bar{X} + 2.0 \sigma \leq m < \bar{X} + 2.5 \sigma$
A (Very Good)	8	$\bar{X} + 1.5 \sigma \leq m < \bar{X} + 2.0 \sigma$
B+ (Good)	7	$\bar{X} + 1.0 \sigma \leq m < \bar{X} + 1.5 \sigma$
B (Above average)	6	$\bar{X} \leq m < \bar{X} + \sigma$
C (Average)	5	$\bar{X} - 0.5 \sigma \leq m < \bar{X}$
D (Pass)	4	$\bar{X} - \sigma \leq m < \bar{X} - 0.5 \sigma$
F (Fail)	0	$m < \bar{X} - \sigma$
Ab (Absent)	0	

\* Minor variations may be adjusted by the individual institution.

- 1 A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.
- 2 For non credit courses 'Satisfactory' or "Unsatisfactory' shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA.
- 3 The Universities can decide on the grade or percentage of marks required to pass in a course and also the CGPA required to qualify for a degree taking into consideration the recommendations of the statutory professional councils such as AICTE, MCI, BCI, NCTE etc.,
- 4 The statutory requirement for eligibility to enter as assistant professor in colleges and universities in the disciplines of arts, science, commerce etc., is a minimum average mark of 50% and 55% in relevant postgraduate degree respectively for reserved and general category. Hence, it is recommended that the cut-off marks for grade B shall not be less than 50% and

## 12. RESTRUCTURING OF COURSES – EQUIVALENCE AND TRANSITORY PROVISION:

The University will conduct examination of old course (2013 Pattern) for next three academic years from the date of implementation of course.

The candidate of old course will be given three chances to clear his/her Courses as per the old course (2013 Pattern) and thereafter he/she will have to appear for the Courses as per the equivalence given to old course (2013 Pattern).

## 13. SCHEMES OF CREDITS –

Total credits for three year integrated B.Com. Course is as follows:-

Sr. No.	Semester No	No. of courses	Lecture Hours	Credit per course	Credit for practical courses	Add on course credit (*)	Lectures + Practical + add on courses= Total Credits
1	I	7	48	3	1	1	21 +2 =23
2	II	7	48	3	1	1	21 +2 =23
3	III	6	48	3	2	0	18+2 =20
4	IV	6	48	3	2	2	18+2+2 =22
5	V	6	48	3	3	0	18+3=21
6	VI	6	48	3	3	2	18+3+2 =23
<b>Total No. of credits</b>							<b>132</b>

### Suggested Add On courses (\*)

Sr. No.	Add on course	Class	Semester	Credit
1.	Value added course - I	F.Y.B.Com.	I	1
2.	Value added course – II	F.Y.B.Com.	II	1
3.	Environment Awareness	S.Y.B.Com.	IV	2
4.	Specific Add - on Course related to specialized Course/ Internship	T.Y.B.Com.	VI	2
<b>Total</b>				<b>6</b>

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**Revised structure of Choice Based Credit System Course  
First Year B. Com. Semester – I w.e.f. 2019- 20**

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	No of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
111	Compulsory English- I	Ability Enhancement Compulsory Course	4	3	30	70	--	100	3 Hours
112	Financial Accounting - I	Core Course	4	4	30	50	20	100	3 Hours
113	Business Economics- I	Core Course	4	3	30	70	--	100	3 Hours
114 (A)	Business Mathematics and Statistics - I	Core Course	4	3	30	70	--	100	3 Hours
114 (B)	Computer Concepts and Application- I								
115	<b>Optional Group. (A) (Any one of the Following)</b> a) Organization Skill Development b) Banking and finance c) Commercial Geography d) Defence Organization and Management in India e) Cooperation f) Managerial Economics	Generic Elective Course	4	3	30	70	--	100	3 Hours

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	No of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
116	<b>Optional Group. (B) (Any one of the Following)</b> a) Essentials of E-Commerce b) Insurance & Transport c) Marketing & Salesmanship d) Consumer Protection and Business Ethics e) Business Environment & Entrepreneurship f) Foundation Course in Commerce	Generic Elective Course	4	3 -	30	70	--	100	3 Hours
117	<b>Any one of the following Language</b> Additional English/ Marathi/ Hindi/ Gujarati/ Sindhi/ Persian/ Urdu/ French/ German / Sanskrit / Arabic	Ability Enhancement Course	4	3	30	70	--	100	3 Hours

**First Year B. Com. Structure of the Syllabus w.e.f. 2019- 20**

**Semester – II**

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	No. of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
121	Compulsory English- II	Ability Enhancement Compulsory Course	4	3	30	70	--	100	3 Hours
122	Financial Accounting - II	Core Course	4	4	30	50	20	100	3 Hours
123	Business Economics- II	Core Course	4	3	30	70	--	100	3 Hours
124(A)	Business Mathematics and Statistics - II	Core Course	4	3	30	70	--	100	3 Hours
124(B)	Computer Concepts and Application- II								
125	<b>Optional Group. – (A)</b> <b>(Any one of the Following)</b> a) Organization Skill Development b) Banking and finance c) Commercial Geography d) Defence Organization and Management in India e) Cooperation f) Managerial Economics	Generic Elective Course	4	3	30	70	--	100	3 Hours

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	No. of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam.	Practical Exam.		
126	<b>Optional Group. (B) (Any one of the Following)</b> a) Essentials of E- Commerce b) Insurance & Transport c) Marketing & Salesmanship d) Consumer Protection and Business Ethics e) Business Environment & Entrepreneurship f) Foundation Course in Commerce	Generic Elective Course	4	3	30	70	--	100	3 Hours
127	<b>Any one of the following Language- II</b> Additional English/ Marathi/ Hindi/ Gujarati/ Sindhi/ Persian/ Urdu/ French/ German / Sanskrit / Arabic	Ability Enhancement Course	4	3	30	70	--	100	3 Hours

**Second Year B. Com. w.e.f. 2020- 21.**

**Semester – III**

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	Total No. of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
231	Business Communication- I	Core Course	4	4	30	50	20	100	3 Hours
232	Corporate Accounting- I	Core Course	4	3	30	70	--	100	3 Hours
233	Business Economics - I (Macro)	Core Course	4	3	30	70	--	100	3 Hours
234	Business Management - I	Core Course	4	3	30	70	--	100	3 Hours
235	Elements of Company Law- I	Core Course	4	3	30	70	--	100	3 Hours
236	<b>Special Course Paper- I (Any One)</b> a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism l) Computer Programming and Application	Discipline Special Elective	4	4	30	50	20	100	3 Hours

**Second Year B. Com. w.e.f. 2020- 21**

**Semester – IV**

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	Total No. of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
241	Business Communication- II	Core Course	4	4	30	50	20	100	3 Hours
242	Corporate Accounting- II	Core Course	4	3	30	70	--	100	3 Hours
243	Business Economics – II (Macro)	Core Course	4	3	30	70	--	100	3 Hours
244	Business Management - II	Core Course	4	3	30	70	--	100	3 Hours
245	Elements of Company Law- II	Core Course	4	3	30	70	--	100	3 Hours
246	Special Course Paper- I (Any One) a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism l) Computer Programming and Application	Discipline Special Elective	4	4	30	50	20	100	3 Hours



**Third Year B. Com. w.e.f. 2021- 22**  
**Semester – V**

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	No. of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
351	Business Regulatory Framework - I	Core Course	4	3	30	70	--	100	3 Hours
352	Advanced Accounting - I	Core Course	4	3	30	70	--	100	3 Hours
353	Indian and Global Economic Development - I Or International Economics - I	Core Course	4	3	30	70	--	100	3 Hours
354	Auditing & Taxation - I	Core Course	4	4	30	50	20	100	3 Hours
355	<b>Special Course Paper – II (Same Special Course Offered at S.Y.B.Com)</b> a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism l) Computer Programming and Application	Discipline Specific Elective	4	4	30	50	20	100	3 Hours

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	No. of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
356	<b>Special Course Paper – III (Same Special Course Offered at S.Y.B.Com)</b> a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism l) Computer Programming and Application	Discipline Specific Elective	4	4	30	50	20	100	3 Hours

**Third Year B. Com. w.e.f. 2021- 22**

**Semester – VI**

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	No. of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
361	Business Regulatory Framework - II	Core Course	4	3	30	70	--	100	3 Hours
362	Advanced Accounting - II	Core Course	4	3	30	70	--	100	3 Hours
363	Indian and Global Economic Development - II Or International Economics - II	Core Course	4	3	30	70	--	100	3 Hours
364	Auditing & Taxation - II	Core Course	4	4	30	50	20	100	3 Hours
365	<b>Special Course Paper – II (Same Special Course Offered at S.Y.B.Com)</b> a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism l) Computer Programming and Application	Discipline Specific Elective	4	4	30	50	20	100	3 Hours

Course No.	Course / Title of Paper	Course	No. of lectures (Per Week)	No. of Credits	Internal Assessment	University Assessment		Total Marks	Duration of Theory Examination
						Univ. Exam	Practical Exam		
366	<b>Special Course Paper – III (Same Special Course Offered at S.Y.B.Com)</b>  a) Business Administration b) Banking and Finance c) Business Law and practices d) Cooperation and Rural Development e) Cost and Works Accounting f) Business Statistics g) Business Entrepreneurship h) Marketing Management i) Agricultural and Industrial Economics j) Defence Budgeting, Finance and Management k) Insurance, Transport and Tourism l) Computer Programming and Application	Discipline Specific Elective	4	4	30	50	20	100	3 Hours

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**Revised syllabi (2019Pattern) for three years F.Y. B. Com. Degree course (CBCS)**

**Semester: I  
Financial Accounting- I**

**Course Code - 112**

**No. of Credits :- 03 and for practical – 01**

**Objective of the Course:-**

1. To impart knowledge of basic accounting concepts
2. To create awareness about application of these concepts in business world
3. To impart skills regarding Computerised Accounting
4. To impart knowledge regarding finalization of accounts of various establishments.

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purposed Skills to be developed</b>
1	Accounting Concepts, Conventions and Principles and an overview of Emerging Trends in Accounting	<p><b>(A) Accounting Concepts, Conventions and Principles</b></p> <ol style="list-style-type: none"><li>1. Money Measurement</li><li>2. Business Entity</li><li>3. Dual Aspect</li><li>4. Periodicity Concept</li><li>5. Realization Concept</li><li>6. Matching Concept</li><li>7. Accrual / Cash Concept</li><li>8. Consistency Concept</li><li>9. Conservatism Principle</li><li>10. Materiality Concept</li><li>11. Going Concern Concept</li><li>12. Historical Cost Concept</li></ol> <p><b>(B) Emerging Trends in Accounting</b></p>	<ul style="list-style-type: none"><li>• Knowledge about various accounting Concepts, Conventions and Principles.</li><li>• Understanding emerging trends in accounting and its effect on accounting Practices.</li></ul>

		<ol style="list-style-type: none"> <li>1. Inflation Accounting</li> <li>2. Creative Accounting</li> <li>3. Environmental Accounting</li> <li>4. Human Resource Accounting</li> <li>5. Forensic Accounting</li> </ol>	
2	Piecemeal Distribution of Cash	<ol style="list-style-type: none"> <li>1. Surplus Capital Method only, Asset taken over by a partner,</li> <li>2. Treatment of past profits or past losses in the Balance sheet,</li> <li>3. Contingent liabilities</li> <li>4. Realization expenses/amount kept aside for expenses</li> <li>5. adjustment of actual, Treatment of secured liabilities,</li> <li>6. Treatment of preferential liabilities like Govt. dues/labour dues etc., Excluding: Insolvency of partner and Maximum Loss Method.</li> </ol>	<ul style="list-style-type: none"> <li>• Knowledge about process of dissolution of partnership firm.</li> </ul>
3	Accounts from Incomplete Records (Single Entry System)	<ol style="list-style-type: none"> <li>1. Meaning of single entry system</li> <li>2. Features of Single Entry System</li> <li>3. Conversion of Single Entry into Double Entry</li> </ol>	<ul style="list-style-type: none"> <li>• Knowledge about single entry systems.</li> <li>• Purpose and advantages of double entry system</li> <li>• Process of conversion of single entry into double entry system.</li> </ul>
4	Introduction to Goods and Services Tax laws and Accounting	<ol style="list-style-type: none"> <li>1. Constitutional Background of GST, Concepts and definition of GST.</li> <li>2. IGST, CGST and SGST</li> <li>3. Input and Output Tax credit</li> <li>4. Procedure for registration under GST</li> </ol>	<ul style="list-style-type: none"> <li>• Knowledge about conceptual framework of the GST</li> <li>• Knowledge about various components of GST.</li> <li>• Types of taxes under GST</li> <li>• Registration process under GST for business establishments.</li> </ul>

### Practical for Semester– I

Topic	Mode of Practical
Constitutional Background of GST, Concepts and Implications of GST.	Library Assignment
IGST, CGST and SGST	Guest Lecture
Procedure for registration under GST	Visit to a business establishment
Input and Output Tax credit	PowerPoint Presentation

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	PowerPoint Presentations	Videos available on YouTube	Library assignment on Types of accounting principles and conventions with its usage and emerging trends in accounting	Students will be able to acquire in-depth knowledge
2	12	Group Activity	Videos available on YouTube	--	Students will be able to acquire in-depth knowledge
3	12	PowerPoint Presentations	Videos available on YouTube	Group activity of conversion of single entry into double entry system	Students will be able to understand the process and importance of conversion of single entry into double entry system
4	12	Visit and interview	Videos available on YouTube	Compilation of information about the contents in the syllabus in a journal	Students will gain knowledge about GST and its implications.

## References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Advanced Accounts	M.C. Shukla, T.S. Grewal, S.C. Gupta	S. Chand Publication	New Delhi.
2.	Financial Accounting for B.Com	CA (Dr.) P.C. Tulsian S.C. Gupta	S. Chand Publication	New Delhi.
3.	Introduction to Accountancy	S.R.N Pillai & Bhagavathi	S.Chand & CompanyLtd	New Delhi
4.	Corporate Accounting	Raj Kumar Sah	Cengage Publications	Noida, Uttar Pradesh
5.	<b>Advanced Accounting</b>	<b>S. N. Maheshwari</b>		
6.	<b>GST Law and Analysis with Conceptual Procedures</b>	<b>Bimal Jain and Isha Bansal (Set of 4 Volumes)</b>	Pooja Law Publishing Company	New Delhi
7.	<b>Guidance Note on GST by ICAI</b>	--	The Institute of Chartered Accountants of India	New Delhi

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**Revised syllabi (2019Pattern) for three years F.Y. B. Com. Degree course (CBCS)**

**Semester-I  
Business Economics (Micro) - I**

**Course Code - 113**

**No. of Credits :- 03**

**Objectives of the course:-**

1. To impart knowledge of business economics
2. To clarify micro economic concepts
3. To analyze and interpret charts and graphs
4. To understand basic theories, concepts of micro economics and their application

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose &amp; skills to be developed</b>
1	<b>Introduction and Basic Concepts</b>	1.1 Meaning, Nature, Scope and Importance of Business Economics 1.2 Concept of Micro and Macro Economics 1.3 Tools for Economic Analysis- Functional Relationship, Schedules, Graphs and Equations 1.4 Basic Concepts: Household, Consumer, Firm, Plant and Industry 1.5 Goals of Firms- Economic and Non-Economic	<ul style="list-style-type: none"> <li>• To make the students aware of concepts in micro economics</li> <li>• To help the students understand the difference between micro and macro economics</li> <li>• To make the students understand economic and non-economic goals of firms.</li> </ul> <p><b>Skills :</b> Analyze and think critically, develop writing skills</p>
2	<b>Consumer Behavior</b>	Utility: Concept and Types 2.2 Cardinal Approach: Law of Diminishing Marginal Utility and Law of Equi Marginal Utility 2.3 Consumer Surplus: Concept and Measurement 2.4 Ordinal Approach: Indifference curve	<ul style="list-style-type: none"> <li>• To help the students understand the concept of utility</li> <li>• To impart knowledge of cardinal and ordinal approach</li> <li>• To make them understand the concept of consumer surplus</li> </ul> <p><b>Skills:</b> Understanding complex theories and concepts Geometrical skills, mathematical aptitude, writing skills</p>

		Analysis- Concept, Characteristics, Consumer Equilibrium	
3.	<b>Demand and Supply Analysis</b>	<p>3.1 Concept of Demand</p> <p>3.2 Determinants of Demand</p> <p>3.3 Law of Demand</p> <p>3.4 Elasticity of Demand</p> <p>3.4.1 Price Elasticity of Demand - Meaning, Types, Measurement, Uses and Significance</p> <p>3.4.2 Income Elasticity of Demand-Meaning and Types</p> <p>3.4.3 Cross Elasticity of Demand-Meaning and Types</p> <p>3.5 Supply : Concept, Determinants and Law of Supply</p> <p>3.6 Equilibrium of Demand and Supply for Price Determination</p>	<ul style="list-style-type: none"> <li>• To understand the concept of demand and elasticity of demand</li> <li>• To impart knowledge of law of supply and the determinants of law of supply</li> <li>• To help the students understand price determination in varied demand and supply condition</li> </ul> <p><b>Skills imparted:</b> Applying mathematical and statistical analysis methods extracting information, drawing conclusions</p>
4.	<b>Production Analysis</b>	<p>4.1 Concept of Production Function</p> <p>4.2 Total, Average and Marginal Production</p> <p>4.3 Law of Variable Proportions</p> <p>4.4 Law of Returns to Scale</p> <p>4.5 Economies and Diseconomies of Scale- Internal and External</p>	<ul style="list-style-type: none"> <li>• To help the students understand the relation between revenue concepts</li> <li>• To understand theories of production function</li> <li>• To make students know about economies and diseconomies of scale</li> </ul> <p><b>Skills:</b> Interpret economic theories, writing skills, understand charts and graphs.</p>

## Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	<ul style="list-style-type: none"> <li>• Open book discussion</li> <li>• Case studies</li> <li>• Problem solving based learning</li> </ul>	You tube lectures on micro and macro economics	<ul style="list-style-type: none"> <li>• Functional relations</li> <li>• Goals of firms</li> </ul>	<ul style="list-style-type: none"> <li>• Students will understand basic concepts of micro economics,</li> <li>• Will be able to analyze and interpret</li> </ul>
1.	12	<ul style="list-style-type: none"> <li>• Digital lectures</li> <li>• Jigsaw reading</li> </ul>	You tube lectures	Types of utility	<ul style="list-style-type: none"> <li>• Will know cardinal and ordinal approach</li> <li>• Will understand the concept of consumer surplus</li> </ul>
2.	12	<ul style="list-style-type: none"> <li>• Game oriented classes</li> <li>• Pair learning</li> <li>• Group discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Films</li> <li>• You tube lectures</li> </ul>	Type of goods and elasticity of demand	<ul style="list-style-type: none"> <li>• Will understand the concept of demand and elasticity of demand</li> <li>• Will understand the concept of supply</li> <li>• Able to interpret equilibrium in the market</li> </ul>
3.	12.	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Teacher driven power point presentation</li> <li>• Games and simulation</li> </ul>	<ul style="list-style-type: none"> <li>• You tube lectures</li> <li>• Online PPTs</li> </ul>	Effect of economies of scale on industries (with example of an industry)	<ul style="list-style-type: none"> <li>• Will understand revenue concept</li> <li>• Will know economies and diseconomies of scale</li> </ul>

## References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Microeconomics	B. Douglas Bernheim and Michael D. Whinston	Tata McGraw Hill	New York
2	Microeconomics	Pindyck, R.S. and D.L. Rubinfeld	Pearson Education	London

3	Principles of Economics	Stiglitz, J.E. and C.E. Walsh	Oxford Univ. Press	United Kingdom
4	Microeconomics: Theory and Applications	Salvatore, D.L	Oxford Univ. Press	United Kingdom
5	Intermediate Microeconomics: A Modern Approach	Varian, H.R.,	W.W. Norton	United Kingdom, United states
6	Microeconomic Theory,	Sen, Anindya	Oxford Univ. Press	United Kingdom
7	Modern Microeconomics	Koutsoyiannis, A	MacMillan Press	India
8	Principles of Microeconomics	H.L. Ahuja	S. Chand	New Delhi

### Suggested references

#### Web reference

Sr. no	Lectures	Films	Animation	PPTs	Articles
1.	<a href="https://mitpress.mit.edu/books/lectures-microeconomics">https://mitpress.mit.edu/books/lectures-microeconomics</a>	<a href="https://www.economicsnetwork.ac.uk/teaching/Video%20and%20Audio%20Lectures/Principles%20of%20Microeconomics">https://www.economicsnetwork.ac.uk/teaching/Video%20and%20Audio%20Lectures/Principles%20of%20Microeconomics</a>	<a href="https://www.youtube.com/redirect?q=http%3A%2F%2Fwww.thateconstutor.com&amp;v=Zre4tp90Aog&amp;redir_token=6U11cd7zsOZt8fGKACK3B5JHJNh8MTU1NzkyNzkzMUAxNTU3ODQxNTMx&amp;event=video_description">https://www.youtube.com/redirect?q=http%3A%2F%2Fwww.thateconstutor.com&amp;v=Zre4tp90Aog&amp;redir_token=6U11cd7zsOZt8fGKACK3B5JHJNh8MTU1NzkyNzkzMUAxNTU3ODQxNTMx&amp;event=video_description</a>	<a href="https://ctaar.rutgers.edu/gag/ppc2_files/ppc2.ppt">https://ctaar.rutgers.edu/gag/ppc2_files/ppc2.ppt</a>	<a href="http://scholar.google.co.in/scholar?q=articles+on+microeconomics&amp;hl=en&amp;as_sdt=0&amp;as_vis=1&amp;oi=scholar">http://scholar.google.co.in/scholar?q=articles+on+microeconomics&amp;hl=en&amp;as_sdt=0&amp;as_vis=1&amp;oi=scholar</a>
2.	<a href="https://www.amazon.com/Lectures-Microeconomics-Questions-Approach-Press/dp/0262038188">https://www.amazon.com/Lectures-Microeconomics-Questions-Approach-Press/dp/0262038188</a>	<a href="https://nptel.ac.in/courses/109104125/">https://nptel.ac.in/courses/109104125/</a>	<a href="https://www.youtube.com/watch?v=ewPNugIqCUM">https://www.youtube.com/watch?v=ewPNugIqCUM</a>	<a href="https://www.slideshare.net/tribhuwan64/presentation-on-importance-of-microeconomics">https://www.slideshare.net/tribhuwan64/presentation-on-importance-of-microeconomics</a>	<a href="http://theconversation.com/global/topics/microeconomics-3328">http://theconversation.com/global/topics/microeconomics-3328</a>

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**Revised syllabi (2019Pattern) for three years F.Y. B. Com. Degree course (CBCS)**

**Semester: I**

**Business Mathematics & Statistics- I**

**Course Code – 114 (A)**

**No. of Credits :- 03**

**Objective of the Program**

1. To introduce the basic concepts in Finance and Business Mathematics and Statistics
2. To familiar the students with applications of Statistics and Mathematics in Business
3. To acquaint students with some basic concepts in Statistics.
4. To learn some elementary statistical methods for analysis of data.
5. The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose/Skills to be developed</b>
1	<b>Interest and Annuity</b>	<p><b>Interest:</b> Concept of Present value and Future value, Simple interest, Compound interest, Nominal and Effective rate of interest, Examples and Problems</p> <p><b>Annuity:</b> Ordinary Annuity, Sinking Fund, Annuity due, Present Value and Future Value of Annuity, Equated Monthly Installments (EMI) by Interest of Reducing Balance and Flat Interest methods, Examples and Problems.</p>	<ol style="list-style-type: none"> <li>1. To understand the concept of Simple interest, compound interest, effect of compounding.</li> <li>2. To understand the concept of Annuity and its applications for EMIs and Amortization Schedule.</li> </ol>
2	<b>Shares and Mutual Funds</b>	<p><b>Shares:</b> Concept of share, face value, market value, dividend, brokerage, equity shares, preferential shares, bonus shares. Examples and Problems</p> <p><b>Mutual Funds:</b> Concept of Mutual Funds, Problems on calculation of Net Income after considering entry load, Dividend, Change in Net Asset Value (NAV) and exit load. Averaging of price under the Systematic Investment Plan (S.I.P.). Examples and Problems</p>	<ol style="list-style-type: none"> <li>1. To understand the concept of shares and mutual funds.</li> <li>2. To understand contribution of shares and mutual funds in systematic investment plans</li> <li>3. To solve problems related to shares and mutual funds</li> </ol>
3	<b>Population and Sample</b>	<p>Definition of Statistics, Scope of Statistics in Economics, Management Science and Industry. Concept of population and sample, methods of data collection: Census and sampling with illustration. Methods of random sampling – SRSWR, SRSWOR, Stratified, Systematic (Description of sampling procedures only).</p>	<ol style="list-style-type: none"> <li>1. Collection of data</li> <li>2. Analyzing and interpreting data.</li> <li>3. Knowing different method of sampling</li> </ol>

4	<b>Measures of Central Tendency and Measures of Dispersion</b>	<p>Frequency distribution: Raw data, attributes and variables, Classification of data, frequency distribution, cumulative frequency distribution, Histogram and ogive curves.</p> <p>Requisites of ideal measures of central tendency, Arithmetic Mean, Median and Mode for ungrouped and grouped data. Combined mean, Merits and demerits of measures of central tendency, Geometric mean: definition, merits and demerits, Harmonic mean: definition, merits and demerits, Choice of A.M., G.M. and H.M.</p> <p>Concept of dispersion, Measures of dispersion: Range, Variance, Standard deviation (SD) for grouped and ungrouped data, combined SD, Measures of relative dispersion: Coefficient of range, coefficient of variation. Examples and problems.</p>	<ol style="list-style-type: none"> <li>1. To classify and represent data in tabular and graphical form.</li> <li>2. To compute various measures of central tendency and measures of dispersion.</li> </ol>
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### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Expected Outcome
1	16	ICT	Students will be able to apply concepts of interests and annuities to calculate EMI, prepare amortization schedule, calculate insurance premiums etc
2	8	ICT	Students will be able calculate dividend, brokerage on shares and mutual funds. Also students will be able to identify the contribution of shares and mutual funds in systematic investment plans and to select best investment options
3	8	ICT	Students will be able to recognize and classify different types of data. Students will be able to take a sample of appropriate size using suitable method of sampling.
4	16	ICT	Students will be able to calculate measures of central tendency and measures of dispersion. Students will be able to use appropriate measure of central tendency or measure of dispersion for given data to given problems from business or economics.

**References:**

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Practical Business Mathematics	S. A. Bari	New Literature Publishing Company	New Delhi
2	Mathematics for Commerce	K. Selvakumar	Notion Press	Chennai
3	Business Mathematics with Applications	Dinesh Khattar & S. R. Arora	S. Chand Publishing	New Delhi
4	Business Mathematics and Statistics	N.G. Das & Dr. J.K. Das	McFraw Hill	New Delhi
5	Fundamentals of Business Mathematics	M. K. Bhowal	Asian Books Pvt. Ltd	New Delhi
6	Operations Research	P. K. Gupta & D. S. Hira	S. Chand Publishing	New Delhi
7	Mathematics for Economics and Finance: Methods and Modeling	Martin Anthony and Norman Biggs	Cambridge University Press	Cambridge
8	Financial Mathematics and Its Applications	Ahmad Nazri Wahidudin	Ventus Publishing ApS	Denmark
9	Fundamentals of Mathematical Statistics	Gupta S. C. and Kapoor V. K.;	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002
10	Statistical Methods	Gupta S. P.:	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002
11	Applied Statistics	Mukhopadhyaya Parimal	New Central Book Agency Pvt. Ltd.	Calcutta.
12	Fundamentals of Statistics	Goon A. M., Gupta, M. K. and Dasgupta, B.	World Press	Calcutta.
13	Fundamentals of Applied Statistics	Gupta S. C. and Kapoor V. K.;	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002

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**Revised syllabi (2019Pattern) for three years F.Y. B. Com. Degree course (CBCS)**

**Semester: I**

**Computer Concepts and Application - I**

**Course Code – 114 (B)**

**No. of Credits :- 03**

**Objective:**

1. To make the students familiar with Computer environment.
2. To make the students familiar with the basics of Operating System and business communication tools.
3. To make the students familiar with basics of Network, Internet and related concepts.
4. To make awareness among students about applications of Internet in Commerce.
5. To enable make awareness among students about e-commerce and M commerce.

**Unit 1 Introduction to Computer and Operating system**

**[12]**

**Introduction to Computer**

Definition, Block Diagram, Computer Hierarchy, (Classification),  
Characteristics of Computer

**Computer System Hardware**

Computer Memory  
Input and Output Devices

**Definition – Software**

Software Types - System Software, Application Software

**Definition of Operating System**

Types of Operating Systems,  
Functions of Operating Systems



### **Working with Windows Operating System:**

Introduction, The Desktop, Structure of Windows, Windows Explorer, File and Folder Operations, The Search, The Recycle Bin, Adding or Removing New Programs using, Control Panel, Applications in windows (Paint, Notepad, WordPad, and Calculator)

### **Introduction to Free and Open Source Software**

**Definition of Computer Virus,** Types of Viruses, Use of Antivirus software.

## **Unit 2 Office automation tools**

**[12]**

Definition of Information Technology (IT)  
Benefits of Information Technology (IT)  
Applications of Information Technology (IT)

### **Office automation tools**

**MS-Word:** Introduction, Starting MS-Word, MS-Word Screen and its Components, Elementary Working with MS-Word

**MS-Excel:** Introduction, Starting MS-Excel, Basics of Spread sheet, MS-Excel Screen and Its Components, Elementary Working with MS-Excel

**MS-PowerPoint:** Introduction, Starting MS-PowerPoint, Basics of PowerPoint, MS-PowerPoint Screen and Its Components, Elementary Working with MS PowerPoint

**Data Processing:** Files and Records, File Organization (Sequential, Direct/Random, Index )

## **Unit 3 Introduction to Computer Network**

**[12]**

Introduction  
Importance of Networking  
Computer Network (LAN, WAN, MAN)

Network Components (Hub, Switch, Bridge, Gateway, Router, Modem)  
Network Topology, Wireless Network  
Internet and Internet application  
Introduction, Internet evolution, Working of Internet, Use of Internet

Overview of World Wide Web (Web Server and Client)  
Introduction to Search engine and Searching the Web, Downloading files, Introduction to Web Browsers, Working with E-mail (creation and use of the same)

Introduction to Internet Security  
Security, Privacy, Ethical Issues & Cyber Law

## **Unit 4 Computer applications in Commerce**

**[12]**

### **Computer Applications in Business – Need and Scope**

Computer Applications in various fields of Commerce:  
Personnel Administration, Accounting, Cost and Budgetary Management, Purchasing, Banking, Insurance and Stock-broking, e-governance

### **E-Commerce**

Defining e-Commerce, Main Activities of Electronic Commerce, Benefits of E-Commerce; Broad Goals of Electronic Commerce; Main Components of E-Commerce; Functions of Electronic Commerce – Communication, Process Management, Service Management, Transaction Capabilities;

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**Revised syllabi (2019Pattern) for three years F.Y. B. Com. Degree course (CBCS)**

**Semester: I**

**Organizational Skills Development- I**

**Course Code – 115 - A**

**No. of Credits :- 03**

**Objectives of the course**

1. To introduce the students to the emerging changes in the modern office environment
2. To develop the conceptual , analytical , technical and managerial skills of students efficient office organization and records management
3. To develop the organizational skills of students
4. To develop Technical skills among the students for designing and developing effective means to manage records , consistency and efficiency of work flow in the administrative section of an organisation
5. To develop employability skills among the students

**Depth of the program – Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	Concept of Modern Office	<ol style="list-style-type: none"><li>a. Modern Office :- Definition, Characteristics, importance and functions</li><li>b. Office environment:- Meaning and Importance</li><li>c. Office Location :- Meaning, Principles and factors affecting Office location</li><li>d. Office Layout :- Meaning, Principles and factors affecting Office Layout</li></ol>	<ol style="list-style-type: none"><li>1. Conceptual Clarity on the meaning of a modern office</li><li>2. Developing understanding on the internal and external factors of an office environment</li><li>3. Developing analytical and technical skills to contribute towards planning office location and layout</li></ol>
<b>2</b>	Office Organisation and Management	<ol style="list-style-type: none"><li>a. Office Organisation : Definition, Importance, Principles and Types of Organisation</li><li>b. Office Management:- Definition, Functions</li><li>c. Scientific Office Management :- Meaning, Aims, Techniques of Scientific Office Management and Steps for installation of Scientific Office Management</li></ol>	<ol style="list-style-type: none"><li>1. Conceptual clarity on the meaning of Scientific office management</li><li>2. Development of understanding in various techniques for scientific management</li></ol>

3	Office Records Management	a. Office Records Management -Definition, Objectives, Scope of Records Management, Significance, Principles of Records management. b. Digitalization of records:- Advantages and Problems of Digitalization c. Form Design:- Objectives, types of forms, Significance, Principles of form designing d. Office Manual – Definition, Contents Types , benefits and limitations	1. Introduction to concept of digitalization of records 2. Technical skills and critical analysis skills for designing of various office documents for effective records creation and maintenance
4	Office work	Office work :-Meaning and Characteristics, Flow of work :- Significance, Features of Ideal flow of work ,benefits of flow of work ,problems in smooth flow of work , suggestions for even flow of work	1. Analytical skills for process improvement in office work.

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Power Point Presentation	Online Videos	Making a model of office layout in groups	Conceptual Clarity on meaning of Modern Office, internal and external factors of an office environment
2	12	Power Point Presentation			Conceptual clarity on the meaning of Scientific office management and understanding various techniques for scientific management

3	12	Guest Lectures by Experts	Visit to any organization , college, bank etc ( group assignment)	Report on the records management system based on the visit	Technical skills and Critical analysis skills
4	12	PPT , Educational Videos	Visit to any organization , college, bank etc ( group assignment)	Report on the visit and suggestions for improvement in work flow of the organization visited	Development of Technical and Analytical abilities

**References :**

List of Books Recommended :-

1. Modern Office Management – By Mills, Geoffrey
2. Office Management – By Dr. R.K. Chopra , Priyanka Gauri
3. Office Management – By R.S.N. Pillai
4. Office Management – By K.L.Maheshwari , R.K . Maheshwari
5. Modern Office Management : Principles and Techniques – By J.N.Jian , P.P.Singh

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# Revised syllabi (2019Pattern) for three years F.Y. B. Com. Degree course (CBCS)

## Semester: I

### BANKING & FINANCE- I

#### (Fundamentals of Banking I)

Course Code – 115 - B

No. of Credits :- 03

#### Objectives -

- To provide knowledge of fundamentals of Banking
- To create awareness about various banking concepts
- To conceptualize banking operations.

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1.	<b>Evolution of Banking</b>	<ul style="list-style-type: none"><li>• Meaning, Definition and Origin of 'Bank'</li><li>• Evolution of Banking in Europe and Asia</li><li>• Evolution of Banking in India</li><li>• Structure of Indian Banking System</li></ul>	<ul style="list-style-type: none"><li>• Knowledge of evolution of banking.</li><li>• Understanding structure of Indian Banking</li></ul>
2.	<b>Functions of Bank</b>	<p><b>Primary Functions:</b></p> <ul style="list-style-type: none"><li>○ <b>Accepting Deposits:</b><ul style="list-style-type: none"><li>i. Demand Deposits - Current Deposit and Savings Deposits;</li><li>ii. Time Deposits - Fixed Deposit and Recurring Flexi Deposits (Auto Sweep)</li></ul></li><li>○ <b>Granting Loans and Advances-</b><ul style="list-style-type: none"><li>i. Short Term Loan- Overdraft Facility, Cash Credit Facility, Purchasing and Discounting of Bills,</li><li>ii. Term Loan</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Understanding primary and secondary functions of a bank.</li><li>• Understanding the concepts related to lending and ratios.</li></ul>

		<p><b>Secondary Functions:</b></p> <p>A. Agency Functions- Payment and Collection of a Cheque, Bill and Promissory Note, Execution of standing instructions, Acting as a Trustee and Executor</p> <p>B. General Utility Functions- Safe Custody, Safe Deposit Vaults, Remittance of funds, Pension payments, Acting as a Dealer in Foreign Exchange (FOREX) Market.</p> <p>C. Distribution of Third Party Products, Bancassurance, Mutual Funds, Issuance of Credit Card and Debit Card</p> <p>D. Non Fund Based Credit Facilities- Letter of Credit, Bank Guarantee and Deferred Payment.</p> <p>E. Government Business – Collecting GST, Stamp Duty, Excise Payment, etc.</p> <ul style="list-style-type: none"> <li>• Concepts of Priority and non- priority sector lending Security Based and Purpose Oriented Lending, Bridge Loans, Reserve Ratios- CRR and SLR. Credit Appraisal and Credit Monitoring</li> </ul>	
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<p>3.</p>	<p><b>Procedure for Opening and Operating of Deposit Account</b></p>	<p>Procedure for Opening of Deposit Account: Know Your Customer Norms, (KYC Norms), Application Form, Introduction, Proof of Residence, Specimen Signature, and Nomination Facility: Their Importance. No Frill Account</p> <p>Procedure for Operating Deposit Account: Pay-in-slip, Withdrawal slip, Issue of Pass Book, (Current, Savings or Recurring Deposit), Issue of Cheque Book, Issue of Fixed Deposit Receipt, Premature encashment of a Fixed Deposit and Loan against Fixed Deposit. Recurring Deposit: Premature encashment and loan against Recurring Deposit.</p> <p>a) Closure of Account</p> <p>b) Transfer of Account</p> <p>c) Death Claim Procedure</p> <p><b>Types of Account Holders</b></p> <p>a) Individual Account Holders- Individual Account, Joint Account, Illiterate, Minor, Married Woman, Pardahnashin Woman, Non-Resident Account</p> <p>b) Institutional Account Holders- Sole Proprietorship, Partnership Firm, Joint Stock Company, Hindu Undivided Family, Clubs, Associations, Societies and Trusts.</p>	<ul style="list-style-type: none"> <li>• Understanding the process of opening and operating procedure of bank accounts.</li> <li>• Understanding various types of bank accounts holders</li> </ul>
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4	<b>Methods of Remittance</b>	<p>Demand Draft, Bankers' Cheque</p> <p>Electronic Funds Transfer (EFT) – Real Time Gross Settlement (RTGS), National Electronic Funds Transfer (NEFT), Procedure of fund transfer through NEFT/ RTGS,</p> <p>Society for Worldwide</p> <p>Interbank Financial Telecommunication (SWIFT)</p> <p>Immediate Payment Service (IMPS) - Interbank (Bank to Bank) and Intra Bank (Branch to Branch) Fund Transfer</p>	<ul style="list-style-type: none"> <li>Understanding various methods of remittance.</li> </ul>
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### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1.	10	Lecture, PPT/ Poster Presentation, Group Discussion, Library / Home Assignment	Relevant YouTube videos	NA	<ul style="list-style-type: none"> <li>Knowledge of evolution of banking.</li> <li>Understanding structure of Indian Banking</li> </ul>
2.	14	Lecture, PPT/ Poster Presentation, Group Discussion, Library / Home Assignment	Relevant YouTube videos	Report writing of expert lecture	<ul style="list-style-type: none"> <li>Understanding primary and secondary functions of a bank.</li> <li>Understanding the concepts related to lending and ratios.</li> </ul>

3.	14	Lecture, Expert Lecture, PPT/ Poster Presentation, Group Discussion, Library / Home Assignment,	Relevant YouTube videos	Visit to a bank	<ul style="list-style-type: none"> <li>• Understanding the process of opening and operating procedure of bank accounts.</li> <li>• Understanding various types of bank accounts holders</li> </ul>
4.	10	Lecture, Expert Lecture, PPT / Poster Presentation, Group Discussion, Library / Home Assignment,	Relevant YouTube videos	Visit to a bank	<ul style="list-style-type: none"> <li>• Understanding various methods of remittance.</li> </ul>

#### References:

1. Majumdar N. C., 'Fundamentals of Modern Banking', New Central Book Agency (P) Ltd., New Delhi.
2. Arondekar A.M. & Others, 'Principles of Banking', Macmillan India Pvt. Ltd.
3. Srinivasan D. & Others, 'Principles & Practices of Banking', Macmillan India Pvt. Ltd.
4. Agarwal O.P., (4<sup>th</sup> Edition, 2017), 'Banking and Insurance', Himalaya Publishing House.
5. Gopinath M. N., (1<sup>st</sup> Edition, 2008), 'Banking Principles and Operations', Snow White Publications Pvt. Ltd, Mumbai
6. Gordon E. & Natarajan K., 'Banking - Theory, Law and Practice', (21<sup>st</sup> Revised Edition), Himalaya Publishing House.
7. Joshi Vasant & Joshi Vinay, (3<sup>rd</sup> Edition), 'Managing Indian Banks', Sage Publication, New Delhi.
8. Varshney P.N. (12<sup>th</sup> Edition, 2003), 'Banking - Law and Practice', Sultan Chand & Co. New Delhi
9. Kothari V., (26<sup>th</sup> Edition) 'Tanna's Banking Law & Practice in India,' Lexis Nexis Publication.

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## Revised syllabi (2019Pattern) for three years F.Y. B. Com. Degree course (CBCS)

### Semester- I

### Defense Organization and Management in India

#### DEFENSE ORGANISATION AND MANAGEMENT IN INDIA-I

Course Code – 115 - D

No. of Credits :- 03

#### Objectives:

- 1) To understand the role of Armed Forces and Defense structure of Indian Armed Forces.
- 2) To know the vital elements of Indian Defense Organization in India.
- 3) To know the second line of Defense in India

Unit No.	Topic	No. of Lectures	Teaching Method	Skills to be developed
1.	<b>Development of Defense Organization after Independence</b> 1.1 Reconstruction of Indian Armed Forces since 1947.  1.2 Development of the Army after Independence. 1.3 Development of the Navy after Independence. 1.4 Development of the Air Force after Independence.  1.5 Principles of Defense Organisation.	12	Lecture, PPT, Group Discussion, Library Work, Assignment	<ul style="list-style-type: none"><li>• Understanding defence organization after independence.</li><li>• Understanding the principles of Defense organization</li></ul>
2.	<b>Elements of Defense Organization in India.</b> 2.1 Powers of the President in relation to the Armed Forces. 2.2 Defense Committee of the Cabinet. 2.3 Ministry of Defense – its organizational & function.	12	Lecture, PPT, Group Discussion, Library Work, Study Visit	<ul style="list-style-type: none"><li>• Understanding the elements of defense organization in India.</li></ul>

	2.4 National Security Council.			
<b>3.</b>	<b>Defense Structure of Indian Armed Forces</b> 3.1 Chief of Staff Committee. 3.2 Organization of Army, Naval & Air Headquarters. 3.3 Organization of Army, Naval & Air Commands.	<b>12</b>	Lecture,PPT, Group Discussion, Library Work,	<ul style="list-style-type: none"> <li>Understanding the defense structure of Indian Armed Forces</li> </ul>
<b>4.</b>	<b>Para Military Forces of Defense</b> 4.1 Border Security Force. 4.2 Coast Guard. 4.3 Territorial Army. 4.4 Home Guard. 4.5 Civil Defense. 4.6 National Cadet Corps (N.C.C.) 4.7 Central Reserve Police Force. 4.8 State Reserve Police Force.	<b>12</b>	Lecture,PPT, Group Discussion, Library Work, Assignment	<ul style="list-style-type: none"> <li>Understanding the paramilitary force of defense.</li> </ul>
	<b>Total</b>	<b>48</b>		

#### References:

- 1) Ron Mathews, "Defense Production in India" ABC, New Delhi.
- 2) Raju G. C. Thomas (1978), "The Defense of India a Budgetary Perspective of Strategy and Politics", Mac Millan Publication, New Delhi.
- 3) Sam C.Sarhesian – The Military Industrial Complex a Reassessment', Sage Publication, New Delhi.
- 4) Maj. Gen. Pratap Narain [ Retd] (1998), India's Arms Bazar," Shilpa Publication, New Delhi.
- 5) L t. Gen. R. K. Jasbir Singh(1999),Indias Defense Year Books', Nataraj Publication, Dehradun.
- 6) Chaudhari A.P., 'संरक्षणशास्त्र' Nilkantha Publication, Pune
- 7) Jadhav V.Y, 'भारताची राष्ट्रीय सुरक्षा', Snehvardhan Publication , Pune.
- 8) Venkateshwaram A. L. 'Defense Organisation in India'
- 9) C. Lakshmi (1998) 'Trends in India's Defense Expenditure,' ABC, New Delhi.

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# Revised Syllabi (2019 Pattern) for three years B.Com Degree Course (CBCS)

## Semester- I

### Theory and Practice of Co-operation- I

Course Code – 115 - E

No. of Credits :- 03

#### Objectives of the course:

1. To acquaint the students with the concept of co-operative movement.
2. To introduce the scope of Co-operation.
3. To make students build their career in the field of Co-operation and Rural Development.

#### Depth of Programme: - Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Co-operation-	Meaning & Definitions, Objectives, Nature and Scope of Co-operation, Strength and Weakness of Co-operative Movement ,Principles of Co-operative <b>International Co-operative Alliance (ICA)</b> Meaning ,objectives, ICA Board Code of Governance, International Co-operative Alliance (I.C.A) Committee-1937,1966,1995 Problems & Challenges faced by the Co-operative sector	i. To understand the objectives, Nature and scope of co-operation ii. To understand the Co-operative Movement iii. To understand International Co-operative Alliance and ICA Committee 1937,1966,1995

2	<b>History of Co-operative Movement in India</b>	Introduction and Development of Co-operative Movement in Pre Independence period. Strength and weakness of Co-operative Movement , Sir Fedrick Nicholson Report 1904 , Maclagen Committee Report 1912 , Study of eminent supporters and their contribution	<ul style="list-style-type: none"> <li>i. To understand the development of Co-operative Movement in India</li> <li>ii. To understand Sir Fedrick Nicholson Report and Maclagen Committee Report To understand eminent supporters and their contribution in Co-operative Movement of India</li> </ul>
3	<b>Development of Co-operative Movement in India in post Independent Era</b>	Contribution of Co-operative Leaders in post Independent Era up to the present Stage, Gorewala Committee Report 1954 , Vaidyanathan Committee Report 2005 , Development of Co-operative Movement in Maharashtra , Current scenario of Co-operative Movement in India	<ul style="list-style-type: none"> <li>i. To understand the Contribution of Co-operative Leaders in India</li> <li>ii. To understand the Gorewala Committee Report, Vaidyanathan Commiittee Report</li> <li>iii. To understand Current scenario of Co-operative Movement in India</li> </ul>
4	<b>Government and Co-operative Movement</b>	Role of Central Government , Role of State Government Co-operative Vs Capitalism & Communism	<ul style="list-style-type: none"> <li>i. To understand the role of Government in Co-operative Movement</li> <li>ii. To understand Co-operative Vs Capitalism &amp; Communism</li> </ul>

### Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and AV Application	Project	Expected Outcome
1	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources. Debate on The Strength and Weakness of co-operative movement in Maharashtra, Poster presentation	Short Film Show on Co-operative Movement, AV Application (Audio and Visual Application)	Project on Current scenario of Co-operative Movement in Maharashtra	Understanding of basic knowledge of co-operative movement Understanding Scope, Strength and Weakness of co-operative movement. Understanding International Co-operative Alliance

2	12	Organise Semesterinar/workshop for students, Pre reading, Class discussion, Internet resources. case studies, Field visit to Co-operative Sugar Factory, visit to Agriculture Co-operative and Non Agriculture Co-operative society, Survey report	You Tube Video on History of Co-operative Movement in India	Project Report on Co-operative Sugar Factory, Rural Co-operative and Urban Co-operative credit Society	Understanding History and current scenario of Co-operative Movement in India
3	12	Guest Lectures of eminent personalities in co-operative movement and Rural Development , experience sharing, Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies, PPT, Interview of co-operative leader	Presentation on Contribution of Co-operative Leaders in post Independent Era up to the present Stage	Project Report on Development of Co-operative Movement in Maharashtra	Understanding Contribution of Co-operative Leaders in post Independent Era up to the present Stage , Development of Co-operative Movement in Maharashtra
4	12	Pre reading, Class discussion, examples of various co-operative institution through Newspapers and internet resources, Guest Lectures of eminent personalities ,PPT	Group discussion on Co-operative Vs Capitalism & Communism	Project Report on Role of Government in Co-operative Movement	Understanding Role of Government in Co-operative Movement

## References

Sr. No	Title of Book	Author/s	Publication	Place
1	Co-operation and Rural Development	Principal Dr.Nitin Ghorpade	Success	Pune
2	Co-operation- Principles and Practice-	Dr. D.G. Karve		
3	Theory, History and Practice of Co-operation	Dr. R.D. Beddy		
4	Bhartiya Sahkari Chalval- Tatve va Vyavhar ( Marathi )	Prof. Jagdish Killol; Prof. Arvind Bondre; Prof. A. C. Bhavsar		
5	Sahkari Chalval 1904-2004 (Marathi)	Prof. K. L. F ale		
06	Rural Development in India-Policies and Programme	Abdul Azees NP and S.M. Javed Aktar	Kalpaz Publication	
07	Human Resource Management Practices in Co-operative sector	Principal Dr.Shaikh Aftab Anwar	Idea Publication	New Delhi
08	Report of the High Power Committee on Co-operative May 2009 Ministry of Agriculture Government of India			
09	Journal of Commerce and Management Thought(JCMT)			
10	Journal Co-operative Organization and Management , Journal of Co-operative studies			

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# Revised Syllabi (2019 Pattern) for three years B.Com Degree Course (CBCS)

## Managerial Economics I Semester - I

Course Code – 115 - F

No. of Credits :- 03

### Objectives:

1. To acquaint the students with the concepts and techniques used in micro and macroeconomics.
2. To give the introduction to basic principles of microeconomics and to demonstrate how application of economic theory can improve decision making.
3. To build a perspective necessary for the application of modern economic concepts, precepts, tools and techniques in evaluating business decision taken by a firm.

Unit No.	Unit Title.	Content	Purpose Skills to be developed
1	Introduction	1.1 Nature, Scope and significance of managerial economics. 1.2 Managerial economics and microeconomics. 1.3 Managerial economics and macroeconomics. 1.4 Main characteristics of managerial economics. 1.5 Fundamental economic concepts- opportunity cost, Discounting Principle, Time perspective, incremental reasoning, equi-marginal concept. 1.6 Application of economics in managerial decision making. 1.7 Role and responsibilities of managerial economist in business.	i) To know the meaning, nature of managerial economics ii) To understand fundamental principles of economics. iii) To know the application of principles of managerial economics in business decision making.
2	Demand Analysis	2.1 Basis for demand - concept of utility 2.2 Cardinal Utility approach- Law of marginal utility, maximization of utility, consumer surplus. 2.3 Ordinal Utility approach- Indifference Curve, maximization of utility. 2.4 Law of demand- determinants of demand. 2.5 Elasticity of demand- Price, Income and Cross elasticity of demand. 2.6 Managerial application and importance of elasticity of demand.	i. To understand the concept of utility. ii. To understand the law of diminishing marginal utility in law of demand. iii. To understand the concept of elasticity and its importance in managerial decision making process.

3	Demand forecasting	3.1 Demand forecasting-Meaning, Methods of demand forecasting- Expert opinion, surveys and market experiments, Time series analysis, Trend Projection, Barometric forecasting. 3.2 Demand forecasting for a new product.(Developing, Testing and launching of new products)	i. To understand the concept of demand forecasting and its utility in demand forecasting of new product. ii. To make the students understand different methods of demand forecasting
4	Production and Cost Analysis	4.1 Law of supply- Determinants of supply. 4.2 Theory of production- Meaning and concept of production, 4.3 Law of Variable Proportions and Returns to a Scale. 4.4 Cost Analysis- Types of Cost - Economic cost and accounting cost, Private cost and social cost, Actual cost and opportunity cost, Past cost and future cost, Explicit cost and implicit cost, Incremental cost and Sunk cost. 4.5 Cost and cost curves under short-run and long run- Fix cost and variable cost, Average cost and marginal cost, Relation between average cost and marginal cost. 4.7 Revenue Curves- Concept of average, marginal and total revenue under different market conditions, relation between average and marginal revenue.	i. To understand the law of supply. ii. To know the various concept of costs and revenues.

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	14	i. Open book discussion ii. Interactive lectures	i. Online PPTs ii. You tube lectures	i. Study costs in a local project. ii. Application of cost principles	The students will be able to decipher, analyze and apply the theory and practice of Managerial Economics
2	12	i. Open book discussion. ii. Group discussion with examples.	i. Online PPTs ii. You tube lectures	i. Study of types of elasticity of demand. ii. Study of elasticity of demand in managerial decision.	Students will develop an understanding of the need of businessman to locate the various factors affecting demand of the product and plans of marketing and business strategies accordingly.
3	08	i.) Interactive lectures	i. Online PPTs ii. You tube lectures	i. Study of methods of demand forecasting in a local firm.	Students will understand the demand forecasting of existing and new

		ii.) Case studies. iii.) Teacher driven power point presentation.		ii. Comparative study of advantages of methods of demand forecasting.	product and its importance in managerial decision making.
4	14	i. Case studies. ii. Interactive lectures.	i. Online PPTs ii. You tube lectures	i. Study of law of variable proportions in a firm. ii. Study of concept of costs in short run and long run.	Students will understand the analytics of supply and its various uses. Students will follow the relationship between costs, revenue, profit and losses.

### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Managerial Economics	Domnik Salvatore-	Oxford University Press	Oxford University Press
2	"Managerial Economics-	Mark Hirschey, .	2. Mark Hirschey, Log "managerial Economics-An Integrative Approach", Cengage Learning.	2. Mark Hirschey, Log "managerial Economics-An Integrative Approach", Cengage Learning.
3	Managerial Economics-	D.M.Mithani,	Himalaya Publishing House	Mumbai
4	Managerial Economics,	P.L.Mehatha,	S.Chand Publishing	Mumbai
5	Managerial Economics, Pearson Education	Craig Peterson, Lewis and Jain,	Pearson Education	Pearson Education
6	Modern Economic Theory	K.K.Dewett,		
7	Managerial Economics, Margham Publications, Madras	Shankaran S.	Margham Publications, Madras	Madras
8	Managerial Economics,	Thomas Christopher R. and Charles, Maurice S.	McGraw Hill Irwin, Boston.	McGraw Hill Irwin, Boston.

## Suggested references

### Web reference

1. <https://nptel.ac.in/courses/110101005/2>
2. <https://nptel.ac.in/downloads/110101005/>
3. <http://cec.nic.in/Pages/Home.aspx>
4. <http://en.wikipedia.org/wiki/Economics>
5. <http://www.investopedia.com/university/economics/#axzz1XwhFTmtm>
6. <http://www.tutor2u.net/blog/index.php/economics/>
7. <http://www.economicshelp.org/>
8. <https://www.intelligenteconomist.com/economics-blogs/>
9. <https://www.coursera.org/courses?query=managerial%20economics>
10. <https://www.edx.org/course/introduction-to-managerial-economics-0>
11. <https://www.mooc-list.com/tags/managerial-economics>
12. <https://online.stmary.edu/mba/courses/managerial-economics>
13. <https://www.tru.ca/distance/courses/econ3041.html>
14. <https://www.euomba.org/managerial-economic>

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# Revised syllabi ( 2019 Pattern ) for three years B.Com. Degree course (CBCS)

## Semester - I

### Essentials of E- Commerce

Course Code – 116 A

No. of Credits :- 03

#### Objectives of the course

1. To acquaint the learner with knowledge on the basics of E-commerce.
2. To develop knowledge on various types of E-commerce business.
3. To develop practical knowledge on effective design of Website and Domain Registration.
4. To Develop knowledge on various modes of online transaction for crating convenience in day to day financial transactions and promoting cashless economy.
5. To introduce the learner to the concept of Electronic Data Inter exchange and its significance.

Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Overview of Electronic Commerce(EC)	Concept, Features and Functions of e-commerce practices v/s traditional practices ,scope and limitations of e-commerce , Recent trends in e-commerce , Risks in e- commerce and preventive measures	1. Conceptual understanding of basics of e-commerce
2	Types of e-Commerce Business	Definition and types of e-commerce business : B2B, B2C, C2B, C2C,B2G, C2G, B2A, C2A and P2P, B2B service provider.	1. Awareness on the various forms of e-commerce
3	Infrastructure	Internet and its role in e-commerce, Mobile and its role in e-commerce , procedure of registering an Internet domain , establishing connectivity to Internet ,tools and services of Internet , Requisites of selecting an appropriate domain name ,Website – Essential factors in designing and importance of an effective website	1. Technical knowledge on registration of a domain 2. Practical Knowledge on role of Internet in e-commerce 3. Analytical skills and Creative skills for web page designing

<b>4</b>	<b>E- Payment and Electronic Data Inter exchange</b>	<p>A. <b><u>E- Payment</u></b> : Transactions through Internet , requirements of e-payments systems, functioning of Debit and credit cards, pre and post payment services</p> <p>Overview on Online Payment Portals and apps in India, CC Avenue, Paytm, BHIM, UPI, Phone Pe etc.</p> <p>Concept of Payment Gateway and Payment Processor</p> <p>B. <b><u>Electronic Data Inter exchange</u></b>: Evolution, uses, benefits, Working of EDI, EDI standards (includes variable length EDI standards), Cost Benefit Analysis of EDI, Electronic Trading Networks, EDI Components, File types, EDI Services , EDI Software.</p>	<ol style="list-style-type: none"> <li>1. Practical Oriented Skills on E-commerce</li> <li>2. Conceptual Clarity on Online Payment Process</li> <li>3. Conceptual Clarity on EDI and Electronic</li> </ol>
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### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	Lecture Methods / Guest Lectures	Online Educational Videos		Developing understanding on E-commerce
2	12	Guest Lectures by subject Experts / Case Study	Online Educational Videos and Success stories	Case study on any one success story	Awareness on various e-commerce platforms
3	12	PPT / Lectures / Guest Lectures	Demonstration by Industry Expert		Technical , Practical , Analytical and Creative Skills
4	14	Live Demonstrations/PPT/Lectures	Online Educational Videos	Actual online transactions of Money transfer and online purchase via online payment for small value orders (can be	Technical and Practical Skills

				undertaken as a group) Payments to vendors via various payment apps apps	
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### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	MCQ /Written Test /PPT	As per University norms	Certificate Web Page Designing
Unit – II	MCQ/Written test /Report Writing	As per University norms	Certificate course on Digital Marketing
Unit – III	Written Test/ Report and /or PPT on any 5 well designed websites	As per University norms	
Unit – IV	Written Test / MCQ	As per University norms	

### References :

#### List of Books Recommended :-

1. The Complete E-Commerce Book - By Janice Reynolds
2. E-Commerce Website optimization – By Dan Corxen- John and Johaan van Tonder
3. E- Commerce – An Indian Perspective – By P.T.Joseph S.J.
4. E- Commerce – Business, Technology, Society – By Kenneth c. Laudomn and Carol Guercio Traver
5. Essentials of E-Commerce Technology – By. V.Rajaraman
6. E Business R(Evolution)- By Daniel Amor
7. E-Commerce Management - By Krishnamurthy
8. E-Commerce: Strategy, Technologies and Applications By David Whiteley

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# Revised Syllabi (2019 Pattern) for three years B.Com Degree Course (CBCS)

## Semester - I

### Insurance and Transport- I (Insurance)

Course Code – 116 - B

No. of Credits :- 03

#### Objectives:

1. To acquaint students with the concepts of Insurance.
2. To create awareness regarding basic knowledge about Life Insurance, Fire Insurance and Marine Insurance.
3. To make the students aware of career opportunities in the field of Insurance

Unit No.	Topic	No. of Lectures	Teaching Method	Proposed skills to be developed
1.	<b>Introduction to Insurance</b> 1.1 Meaning and Nature of Insurance 1.2 Importance of Insurance 1.3 Scope of Insurance 1.4 Principles of Insurance 1.5 Risk and Insurance 1.6 Types – Life and General Insurance 1.7 Difference between Life and General Insurance 1.8 Career opportunities in Insurance Sector	16	Lecture, PPT, Group Discussion, Library Work, Assignment Companies	<ul style="list-style-type: none"><li>• Understanding the concept of insurance</li></ul>
2.	<b>Life Insurance</b> 2.1 Meaning and Features of Life Insurance 2.2 Nature of Life Insurance 2.3 Origin of Life Insurance 2.4 Importance of Life Insurance 2.5 Principles of Life Insurance 2.6 Types of Life Insurance Policies 2.7 Procedure of Life Insurance Contract	16	Lecture, PPT, Group Discussion, Library Work, Study Visit to Office of the Insurance	<ul style="list-style-type: none"><li>• Understanding the concept of life insurance.</li></ul>



<b>3.</b>	<b>Fire Insurance</b> 3.1 Meaning and Features 3.2 Nature of Fire Insurance Contract 3.3 Types of Fire Insurance Policies	<b>08</b>	Lecture,PPT, Group Discussion, Library Work,	<ul style="list-style-type: none"> <li>Understanding the concept of fire insurance</li> </ul>
<b>4.</b>	<b>Marine Insurance</b> 4.1 Meaning and Features 4.2 Marine Insurance Contract 4.3 Types of Marine Insurance Policies	<b>08</b>	Lecture,PPT, Group Discussion, Library Work, Assignment	<ul style="list-style-type: none"> <li>Understanding the concept of marine insurance</li> </ul>
	<b>Total</b>	<b>48</b>		

### References:

1. Khan M.Y. (1997), Financial Services, Tata McGraw-Hill Publishing Company Limited New Delhi .
2. Mishra M.N. (2004) Insurance - Principles and Practice, S. Chand and Company Ltd. New Delhi.
3. Gulati Neelam C., Principles of Insurance Management, Excel Books.
4. Haridas R., Life Insurance in India, New Century Publication New Delhi.
5. Godwin Frank, The Principles and Practice of Fire Insurance, Isaac Pitman and Sons Ltd. London.
6. Panda G.S., Principles and Practice of Insurance, Kalyani Publishers Ludhiana.
7. Kanwal L.S., Text Book of Insurance, Kalyani Publishers Ludhiana.
8. Mathew M.J., Insurance, RBSA Publisher Jaipur.
9. सराफमोहन,विमाशास्त्र,सी .जमनादासआणिकंपनी

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# Revised syllabi (2019 Pattern) for three years B.com Degree course (CBCS)

## Semester - I

### Marketing and Salesmanship- I

#### (Fundamentals of Marketing)

Course Code – 116 - C

No. of Credits :- 03

### Objectives of the Course

1. To introduce the basic concepts in Marketing.
2. To give the insight of the basic knowledge of Market Segmentation and Marketing Mix
3. To impart knowledge on Product and Price Mix.
4. To establish link between commerce, business and marketing.
5. To understand the segmentation of markets and Marketing Mix.
6. To enable students to apply this knowledge in practicality by enhancing their skills in the field of Marketing.

Unit No.	Unit Title	Contents	Purposed Skills To Be Developed
1	Introduction to Market and Marketing	1.1 Meaning and Definition of Market 1.2 Classification of Markets 1.3 Marketing Concept: Traditional and Modern 1.4 Importance of Marketing 1.5 Functions of Marketing: Buying, Selling, Assembling, Storage, Transportation, Standardization, Grading, Branding, Advertising, Packaging, Risk Bearing, Insurance, Marketing Finance, Market Research and Marketing Information. 1.6 Selling vs. Marketing	The basic knowledge of Market and Marketing will be developed amongst students.

2	Market Segmentation and Marketing Mix	<p>2.1 Market Segmentation: -</p> <p>2.1.1 Introduction</p> <p>2.1.2 Meaning and Definition</p> <p>2.1.3 Importance</p> <p>2.1.4 Limitations</p> <p>2.1.5 Bases for Segmentation</p> <p>2.2 Marketing Mix</p> <p>2.2.1 Introduction</p> <p>2.2.2 Meaning &amp; Definition</p> <p>2.2.3 Elements of Marketing Mix- Product, Price, Place and Promotion</p> <p>2.2.4 Importance of Marketing Mix</p>	Students will develop the Marketing Segmentation knowledge along with the basic concept of Marketing Mix.
3	Product Mix and Price Mix	<p>3.2 Product Mix</p> <p>3.2.1 Meaning and Definition</p> <p>3.2.2 Product Line and Product Mix</p> <p>3.2.3 Product Classification</p> <p>3.2.4 Product Life Cycle</p> <p>3.2.5 Factors Considered for Product Management</p> <p>3.3 Price Mix</p> <p>3.3.1 Meaning and Definition</p> <p>3.3.2 Pricing Objectives</p> <p>3.3.3 Factors Affecting Pricing Decision</p> <p>3.3.4 Pricing Methods</p>	Students will get proper insight of Product and Price Mix.

4	Place Mix and Promotion Mix	<p>a. Place Mix</p> <ul style="list-style-type: none"> <li>i. Meaning and Definition of Place Mix</li> <li>ii. Importance</li> <li>iii. Types of Distribution Channels – consumer goods and Industrial Goods</li> <li>iv. Factors Influencing selection of Channels</li> </ul> <p>4.2 Promotion Mix</p> <ul style="list-style-type: none"> <li>4.2.1 Meaning of Promotion Mix</li> <li>4.2.2 Elements of Promotion Mix- Personal Selling, Public Relation and Sales Promotion</li> <li>4.2.3 Factors Affecting Market Promotion Mix</li> <li>4.2.4 Promotion Techniques or Methods</li> </ul>	<p>Students will develop the skills of promoting a product along with gaining knowledge about the distribution channels.</p>
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## Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative Methods to be used</b>	<b>Film shows and AV Applications</b>	<b>Expected Outcome</b>
<b>1</b>	<b>14</b>	Power Point Presentation, Survey Analysis	Short Film AV Application	Student will get acquainted with the basics of marketing field.
<b>2</b>	<b>07</b>	Power Point Presentation, Survey Analysis, Group Discussion	Short Film AV Application	It will highlight on the core marketing concepts namely 'Marketing Mix'. It will help students to implement this knowledge in practicality by enhancing their skills in the field of market segmentation.
<b>3</b>	<b>14</b>	Conceptual Learning Group Discussion	AV Application	Students will develop the skills of Pricing the product along with gaining knowledge on Product Mix
<b>4</b>	<b>13</b>	Conceptual Learning, Power Point Presentation, Group Discussion	Short Film, AV Application Use of You Tube	It will help the students to apply the various techniques of Promotion and understand the various channels of distribution

## References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Marketing Management	Philip Kotler	Pearson Publication	
2	Marketing Management	Rajan Saxena	McGraw Hill Education	
3	Principles of Marketing	Philip Kotler	Pearson Publication	
4	Sales & Distribution Management	Tapan K Panda	Oxford Publication	
5	Advertising Management	Rajiv Batra	Pearson Publication	
6	Retail Management	Swapna Pradhan	McGraw Hill Publication	
7	Retail Management	Gibson Vedamani	Jayco Publication	
8	Marketing Management	V. S. Ramaswamy & S. Namakumari	Macmillan Publication	
9	Supply Chain Management	Sunil Chopra, Peter Meindl & D. V. Karla	Pearson Publication	

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# Revised syllabi (2019 Pattern) for three years B.com Degree course (CBCS)

## Semester - I

### Consumer Protection and Business Ethics - I

Course Code – 116 - D

No. of Credits :- 03

#### Objectives of the Program

1. To develop general awareness of consumerism among the students.
2. To understand the consumers rights, responsibility and role of United Nations.
3. To have a comprehensive understanding about the existing law on consumer protection in India.
4. To create awareness among the students about dispute redresses machinery and basic procedures for handling consumer dispute.
5. To understand the issues relating to e-commerce, e-Banking emerging issues and internet regulations.

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Consumer Protection - An Overview</b>	Consumerism- Meaning, Evolution, Rational, Need and Importance of Consumerism, Consumer protection- objectives, scope and importance, Consumer rights and Standardization United Nations guideline on consumer protection- Objectives, scope of application , general principles and framework for consumer protection	understand the concept of consumerism Equip the students with knowledge the evolution, need and importance, of consumerism Understand the role of United Nations to protect consumer's interest.
2	<b>Consumer Education and Awareness</b>	Consumer education-Need and importance, Consumer Responsibility Role of consumer Association and Councils in consumer education and Awareness- Voluntary organization, Consumer protection councils, Media, Educational Institute and Government Skills required for career in Consumer studies field	Handling the emerging issues about consumer protection  Acquaint knowledge and skills for career opportunity.

5.	<b>Consumer Protection Law in India *</b>	Consumer Protection Movement in India <b>Consumer Protection Act 1986-</b> Overview features, important definitions-consumers, Goods, services, Defect , Deficiency, unfair trade practices, Dispute, Complaint - Objectives, Consumer Disputes Redressal Agencies. (Composition, Jurisdiction, Powers and Functions.) Procedure of filling complaint and Procedure to deal with complain.	Compressive understanding about the existing consumer protection Act 1986. Apply the Law for consumer protection
6.	<b>E -Commerce and consumer Protection</b>	E Commerce- scope and limitations, Need and importance of E commerce , Prospects and challenges of Ecommerce and its effect on consumer Need and importance of E-Education consumer Protection in E-Banking Recent Emerging Issues in E-Commerce	Understand the concept of E commerce and Consumer Protection Acquaint students about various issues of E commerce. Able to appreciate the emerging questions and policy issues

[Note: Recent amendments in the Acts and relevant Landmark cases decided by courts are expected to be studied]

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Documentary , PPT, Narration, Quiz, Survey Analysis Article review	Short film about consumer movement, Role of UN	Report Review	Acquaint knowledge and maturity to understand the consumers interest
2	12	Project making, Street play, jingles, slogan Competition,	Use of You tube, Review of Movie	New Emerging Issues in consumer protection	To get training to face emerging issues. To seek career opportunity in this field.



3	12	Case study, Poster making, Interview of lawyer , Mute court	Case Analysis, Mute court ,E filing of the case	Recent Laws and silent feature	To Acquaint knowledge and application of laws
4	12	Virtual Learning, Group Discussion,	Film on cyber security, Internet precautions	Project on E COMMERCE and Consumer protection	To defend and safety in e commerce. To learn e skills

## References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Grahak Darshan	Mr. Bindu Madhav Joshi	Akhil Bhartiy Grahak Panchayat	Pune
2	Grahak Sanrakshan Adhiniyam	Ad Ghare S S	Mukund Publication	Pune
3	E- Commerce : An Indian Perspective	Dr.P. T. Joshep	PHI Publication	New Delhi
4	E Banking in India	Dr R K Uppal	New Century Publication	New Delhi
5	Consumer education and empowerment	Dr. S. S. Singh, Dr.Sapna Chadah	Abhijit Publication	New Delhi
6	GrahakRaja Jaga Ho	Prof. G. V. Kayandepatil	Chaitanya Publication	Nashik
7	United Nations Guidelines on Consumer Protection	unctad.org	UNCTAD	UNCTAD Geneva Switzerland
8	The Consumer Protection Act, 1986	Act	Govt of India	Delhi
9	The law of E Commerce	Dr A Alghamdi	Auther House	Mumbai

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## Revised syllabi (2019 Pattern) for three years B.com Degree course (CBCS)

### Semester - I

#### Business Environment & Entrepreneurship - I

Course Code – 116 - E

No. of Credits :- 03

#### Objectives of the course:

- 1) To understand the concept of Business Environment and its aspects
- 2) To make students aware about the Business Environment issues and problems of Growth
- 3) To examine personality competencies most common to majority of successful entrepreneurs and to show how these competencies can be developed or acquired
- 4) To understand the difference between Entrepreneurial and non-Entrepreneurial behaviour
- 5) To provide knowledge of the significance of Entrepreneurship in economy
- 6) To familiarize the students with the contribution of selected institutes working to promote Entrepreneurship
- 7) To generate entrepreneurial inspiration through the study of successful Entrepreneurs

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Business Environment</b>	Concept- Importance - Inter relationship, between environment and entrepreneur, Aspects of Environment- Natural- Economic - Political - Social - Technical - Cultural - Educational - Legal & Cross-cultural – Geographical etc.	Understanding the concept of Business Environment and its aspects Skill-correlating aspects of business environment and entrepreneur
2	<b>Environment Issues</b>	Pollution-Concept and types –Causes of pollution-Remedies of Pollution, Remedies of pollution-protecting the natural environment-Conservation of natural resources - Opportunities in Environment	Making students aware about business environment issues and problems of growth Skills-capable of understanding and analysing environment issues and finding out solutions to resolve these issues

<b>3</b>	<b>Problems of growth</b>	Unemployment- Concept-Types-Causes- Remedies, Poverty- Concept- Causes- Remedies , Regional Imbalance- Concept-Effects –Solutions , Social injustice- Concept, Effects, Solutions ,Black Money –Meaning – Sources –Effects- Measures, Lack of technical knowledge and information-Problems-Remedies	Understanding the problem of growth Skill-Application of mind to resolve the problem of growth
<b>4</b>	<b>The Entrepreneur</b>	Evolution of the term entrepreneur –Definition - Competencies of an Entrepreneur – Distinction between a) entrepreneur and manager-b)Entrepreneur and Enterprise, Intrapreneur-Concept and importance –Distinction between Entrepreneur and Intrapreneur	Understanding the concept of entrepreneur, competencies of a successful entrepreneur, realising the difference between various concepts Skill-knowing the entrepreneurial competencies and imbibing the same by students

### Teaching Methodology- F.Y.B.Com Semester-I, Paper-I

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative Methods to be used</b>	<b>Film Shows and A.V. Application</b>	<b>Project</b>	<b>Expected Outcome</b>
<b>1</b>	12	Case Study-Role play	Related videos and PPT	Distribute aspects of business environment in group and ask them to prepare in brief report on it- Field Assignment	Understanding of various aspects business environment useful for would be entrepreneurs
<b>2</b>	12	Conducting survey and collecting information about various types of pollution	Film shows with the help of environment related organizations	Undertake survey of pollution level, its ill effects and remedies	Understanding of various aspects of pollution and its ill effects
<b>3</b>	12	Collecting necessary information through various resources	Related videos and PPT	Compilation of facts, figures and remedies	Understanding of Problems and their causes and remedies
<b>4</b>	12	Case Study	Biographical CDs of successful entrepreneurs	Interview of various types of entrepreneurs e.g. First Generation entrepreneur, Women entrepreneur, Social entrepreneur and collect entrepreneurial competencies, Collection of success stories	Understanding the concept of entrepreneur, competencies of a successful entrepreneur

				of persons organisation in the area, arranging guest lecture by eminent entrepreneurs on various aspects of entrepreneur and entrepreneurship	
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## References

Sr. No	Title of Book	Author/s	Publication	Place
1	Business Environment	Francis Cherunilam	Himalaya Publishing House	New Delhi
3	Dynamics of Entrepreneurship Development and Management	Desai Vasant	Himalaya Publishing House	New Delhi
4	Entrepreneurial Development	Khanka S.S.	S. Chand	New Delhi
5	Entrepreneurial Development	Gupta, Shrinivasan	S. Chand	New Delhi
6	Udyog	--	Udyog Sanchalaya	Mumbai
7	Indian Economy	Ruddar Datt, K.P.M. Sundharam	S. Chand	New Delhi

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# Revised syllabi (2019 Pattern) for three years B.com Degree course (CBCS)

## Semester – I

### Foundation Course in Commerce

Course Code – 116 – F

No. of Credits :- 03

#### Objectives of the course

1. To acquaint the student with knowledge of forms of business organizations and new business models.
2. To understand the latest government regulations and policies with relation to business in India .
3. To introduce the students to the various entrepreneurial development programmes in India .
4. To update the students with the latest developments in Service sector in India.

Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Forms of Business Organization	A. Organization – Meaning , Importance B. Sole Proprietorship , Partnership , LLP , Joint Stock Companies, Joint Ventures , Cooperative, Government form of Business Organization( Departmental, Corporation , Government company), Non Government Organizations – Meaning , Definition , Structure , Advantages and Disadvantages	<ul style="list-style-type: none"><li>▪ Conceptual Understanding on the various forms of Business Organization,</li></ul>
2	Types of Business Models	Franchise, Brick and Mortar, e- Commerce, Bricks and Clicks ,Nickel and Dime, Freemium , Subscription ,Aggregator, Online Market Place , Data Licensing/ Data Selling , Digital Advertising ,Affiliate Marketing, Drop Shipping , Agency Based, Peer to Peer Catalyst/Platform, Block Chain	<ol style="list-style-type: none"><li>1. Overview of the emerging types of business models</li></ol>

3	<b>Industrial Policies and Recent Programmes for Start ups in India</b>	<ol style="list-style-type: none"> <li>1. Overview of recent Industrial Policies in India – New Industrial Policy 1991, EXIM Policy , India New Foreign Trade Policy 2015 – 2020 , FDI Policy</li> <li>2. Overview of : <ol style="list-style-type: none"> <li>a. Start up India</li> <li>b. Atal Innovation Mission (AIM)</li> <li>c. Make in India</li> <li>d. Digital India</li> <li>e. Support To Training And Employment Programme For Women (STEP)</li> <li>f. <b>Trade-Related Entrepreneurship Assistance And Development (TREAD)</b></li> <li>g. <b>Pradhan Mantri Kaushal Vikas Yojana (PMKVY)</b></li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>4. Overview of the various policies supporting business in India</li> <li>5. Awareness on the recent programmes to promote and support for business</li> </ol>
4	<b>Emerging Trends in Service Sector</b>	<p>Overview of Recent trends –</p> <ol style="list-style-type: none"> <li>1. Banking Sector - Internet and Mobile Banking</li> <li>2. Indian Post Payments Bank</li> <li>3. Insurance Sector –Malhotra Committee Report</li> <li>4. Logistics</li> <li>5. BPO, KPO , TPO , and LPO</li> <li>6. New trends in Tourism- Religious, Rural, &amp; Medical tourism</li> </ol>	<ol style="list-style-type: none"> <li>4. Awareness of Recent Trends in the Service Sector</li> </ol>

## Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	PPT , Project Charts	Educational Videos	Individual assignment report	Developing understanding on various forms of business organizations
2	08	Guest Lectures by subject Experts / Industry Expert , Internet Assignments , Case Study Discussion on Real Life success stories	Educational Videos, Videos on Real Life success stories	Case analysis and Discussions, Business Games	Conceptual Clarity and Awareness on Latest Changes
3	14	PPT and Internet Research	<a href="https://www.india.gov.in/my-government/schemes">https://www.india.gov.in/my-government/schemes</a>	Report Writing , Presentation	Understanding on various Government Policies and Promotion of Entrepreneurial spirit among learners
4	14	Demonstration Method of Online Banking and Mobile Banking , Guest Lectures from experts of respective areas	Educational Videos	Field Visit Internet Research Report	Hands on Training to understand online Baking Awareness on emerging trends and knowledge enhancement

## Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	MCQ / PPT / Written Test	As per University norms	
Unit – II	Chart Presentation / MCQ/ Written Test	As per University norms	Undertaking a small course under <b>Pradhan Mantri Kaushal Vikas Yojana (PMKVY)</b>
Unit – III	Written Test / Open Book Examination	As per University norms	Certificate Course on Soft Skills for Business
Unit – IV	PPT/ MCQ/Written Test/ Field Visit and Report	As per University norms	

### References :

#### List of Books Recommended :-

1. Financial Management – I. M. Pandey.
2. Financial Management – Theory & practical – Prasanna Chandra
3. Financial Management – S. C. Kuchhal
4. Public Sector in India – Laxmi Nariyan
5. Indian Economy – Rudder Datt
6. Indian Economy – KPM Sundaram
7. Law & practice of banking – S. R. Davar
8. The Business Model Book – Adam J Bock , Gerard George
9. Business Model Innovation – Alexander Osterwalder , Yves Pigneur
10. <https://www.india.gov.in/my-government/schemes>

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**Syllabus for F.Y.B.Com**  
**Semester-II, Paper-II**  
**Subject Name: - Financial Accounting- II**  
**Course Code - 122**

**Objectives of the course**

This course is intended to introduce the basic theory, concepts and practice of financial accounting and to enable students to understand information contained in the published financial statements of companies and other organizations. It includes the preparation of accounting statements, but their uses and limitations will also be emphasized.

Depth of the program – fundamental Knowledge

**Objective of the Program**

1. To impart knowledge of various software used in accounting
2. To impart knowledge about final accounts of charitable trusts
3. To impart knowledge about valuation of intangible assets
4. To impart knowledge about accounting for leases

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Software used in Accounting</b>	<ol style="list-style-type: none"><li>1. Types of Accounting Software</li><li>2. Use of Accounting Software</li><li>3. Installation of Accounting Software</li><li>4. Advantages and disadvantages of Accounting Software</li></ol> <p>Voucher entry and Report Generation including GST transactions</p>	<ul style="list-style-type: none"><li>• Students are expected to acquaint themselves with Computerised accounting, its application and utility.</li></ul>

2	<b>Final Accounts of Charitable Trust (Clubs, Hospitals, Libraries etc.)</b>	<ol style="list-style-type: none"> <li>1. Meaning and Characteristics</li> <li>2. Accounting Records</li> <li>3. Income and Expenditure Account</li> <li>4. Receipt and Payment Account</li> <li>5. Balance Sheet and Adjustments</li> </ol>	<ul style="list-style-type: none"> <li>• Understanding the accounting process of accounting of charitable trusts</li> <li>• Recording basic accounting transactions and prepare annual financial statements; and</li> <li>• Analyzing , interpreting and communicating the information contained in basic financial statements and explain the limitations of such statements</li> </ul>
3	<b>Valuation of Intangibles</b>	<ol style="list-style-type: none"> <li>1. Valuation of Goodwill (Problem)</li> <li>2. Valuation of Brands</li> <li>3. Valuation of Patents, Copyright and Trademark etc.</li> </ol>	<ul style="list-style-type: none"> <li>• Learning the concept of intangible assets and the methods of their valuation.</li> </ul>
4	<b>Accounting for Leases</b>	<ol style="list-style-type: none"> <li>1. Types of Lease (Finance Lease and Operating Lease)</li> <li>2. Finance Lease (Hire Purchase and installment) (Theory)</li> <li>3. Operating Lease</li> <li>4. Royalty,</li> <li>5. Minimum Rent,</li> <li>6. Short Workings,</li> <li>7. Recoupment Of Short Working,</li> <li>8. Lapse of Short Working</li> </ol> <p>Journal Entries and Ledger Accounts in the Books of Landlord and Lessee</p>	<ul style="list-style-type: none"> <li>• Understanding the process and methods of leasing.</li> </ul>

Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Hands-on experience of using accounting software on computers	Videos available on YouTube	Voucher entries in tally	Students will be able to acquire in-depth knowledge
2	12	Visit to charitable trust for collection of relevant information	Videos available on YouTube	Visit report	Students will be able to acquire in-depth knowledge
3	12	Case studies on intangible assets and its valuation	Videos available on YouTube	Report writing	Students will be able to acquire in-depth knowledge
4	12	Case studies and expert lectures.	Videos available on YouTube	NA	Students will be able to acquire in-depth knowledge

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Advanced Accounts	M.C. Shukla, T.S. Grewal, S.C. Gupta	S. Chand Publication	New Delhi.
2.	Financial Accounting for B.Com	CA (Dr.) P.C. Tulsian S.C. Gupta	S. Chand Publication	New Delhi.
3.	Financial Accounting	Dr. Kishor Jagtap	Tech- Max Publications,	Pune
4.	Introduction to Accountancy	S.R.N Pillai & Bhagavathi	S.Chand & CompanyLtd	New Delhi

5.	Corporate Accounting	Raj Kumar Sah	Cengage Publications	Noida, Uttar Pradesh
6.	Principles of Accountancy	Principles of Accountancy	S.Chand & CompanyLtd	New Delhi
7.	Advanced Accounting	S. N. Maheshwari		
8.	GST Law and Analysis with Conceptual Procedures	Bimal Jain and Isha Bansal (Set of 4 Volumes)	Pooja Law Publishing Company	New Delhi
9.	Guidance Note on GST by ICAI	--	The Institute of Chartered Accountants of India	New Delhi

**Practical for Semester – II**

<b>Topic</b>	<b>Mode of Practical</b>
Introduction to Computerised accounting, Accounting software, Features, advantages and disadvantages	Library Assignment
Company creation	Computer Laboratory
Groups and ledgers creation	Computer Laboratory
Voucher entries including GST and Report Generation	Computer Laboratory

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## Revised syllabi (2019 Pattern) for Three Years B. Com. Degree course (CBCS)

### First Year B. Com Semester-II Course Code - 123 Business Economics (Micro) - II

#### Objectives:

1. To understand the basic concepts of micro economics.
2. To understand the tools and theories of economics for solving the problem of decision making by consumers and producers.
3. To understand the problem of scarcity and choices.

Depth of the program – Fundamental Knowledge

#### Objectives of the Program

1. To impart knowledge of business economics
2. To clarify micro economic concepts
3. To analyze and interpret charts and graphs
4. To understand basic theories, concepts of micro economics and their application

Unit No.	Unit Title	Contents	Purpose skills to be developed
1	<b>Cost and Revenue</b>	1.1 Concepts and Types of Cost- Economic Cost and Accounting Cost, Private Cost and Social Cost, Actual Cost and Opportunity Cost, Explicit Cost and Implicit Cost, Incremental Cost and Sunk Cost, Fixed Cost and Variable Cost 1.2 Relation between Total Cost, Average Cost and Marginal Cost 1.3 Cost Curves in Short run and Long run 1.4 Concept of Total Revenue, Average Revenue and Marginal Revenue	<ul style="list-style-type: none"><li>• To understand the concept and types of cost</li><li>• To make the students know about short run and long run cost concepts</li><li>• To impart knowledge about types of revenue</li></ul> Skills: Interpretation of cost curves, integrate cost and revenue concepts, draw inferences

2	<b>Pricing Under Perfect Market Conditions</b>	<p>2.1 Pure Competition: Meaning and Features</p> <p>2.2 Features of Perfect Competition</p> <p>2.3 Price Determination in Perfect Competition</p> <p>2.4 Equilibrium of Firm and Industry in Short Run and Long Run</p>	<ul style="list-style-type: none"> <li>• To help the students understand the concept of pure and perfect competition</li> <li>• To impart knowledge about equilibrium of firm and industry in short and long run.</li> </ul> <p>Skills: Understanding, writing skills, critical thinking</p>
3.	<b>Pricing Under Imperfect Market Conditions</b>	<p>1.1 Meaning of Imperfect Competition</p> <p>1.2 Monopoly: Features and Equilibrium, Price Discrimination</p> <p>3.3 Monopolistic Competition- Features and Equilibrium.</p> <p>3.4 Oligopoly: Concept and Features</p> <p>3.5 Duopoly: Concept and Features</p> <p>3.6 Comparison of Perfect and Imperfect Competition</p>	<ul style="list-style-type: none"> <li>• To develop ability to understand the market structures under imperfect competition</li> <li>• Ability to compare perfect and imperfect competition</li> </ul> <p>Skills: Understand complex relations, problem solving skill, analytical skill</p>
4	<b>Factor Pricing</b>	<p>4.1 Marginal Productivity Theory of Distribution</p> <p>4.2 Rent- Meaning, Ricardian Theory of Rent, Modern Theory of Rent, Concept of Quasi Rent</p> <p>4.3 Wages-</p> <p>4.3.1 Meaning and Types of Wages-</p> <p>a) Minimum Wages b) Money Wages c) Real Wages d) Subsistence Wages e) Fair Wages</p> <p>4.3.2 Backward Bending Supply Curve of Labour</p>	<ul style="list-style-type: none"> <li>• To understand the theory of marginal productivity</li> <li>• To understand the concept and theories in factor pricing</li> </ul> <p>Skills: Critical thinking, logical thinking, apply information processing skills</p>

		<p>4.3.3 Role of Collective Bargaining in Wage Determination</p> <p>4.4 Interest-Meaning, Loanable Fund Theory, Liquidity Preference Theory</p> <p>4.5 Profit- Meaning, Risk and Uncertainty Theory of Profit, Dynamic Theory of Profit, Innovation Theory of Profit</p>	
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### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	8	<ul style="list-style-type: none"> <li>• Open book discussion,</li> <li>• Case studies</li> </ul>	<ul style="list-style-type: none"> <li>• You tube lectures</li> <li>• Online PPTs</li> </ul>	<p>Types of cost in industries</p> <p>Comparison of cost and revenues in industries</p> <p>Trends of cost and revenue in industries</p>	<ul style="list-style-type: none"> <li>• Will understand the concept and types of cost</li> <li>• Students will know about short run and long run cost concepts</li> <li>• Students will have knowledge about types of revenue</li> </ul>
2	8	<p>Digital lectures</p> <p>Interactive lectures</p>	<ul style="list-style-type: none"> <li>• You tube lectures</li> <li>• Online PPTs</li> </ul>	<p>Application of perfect competition markets in the markets like that of agricultural products, dairy products etc</p>	<ul style="list-style-type: none"> <li>• Students will understand the concept of pure and perfect competition</li> <li>• Students will know about the equilibrium of firm and industry in short and long run.</li> </ul>

3	14	<ul style="list-style-type: none"> <li>• Game oriented classes</li> <li>• Dramatization</li> <li>• Group discussion</li> </ul>	<ul style="list-style-type: none"> <li>• You tube lectures</li> <li>• Online PPTs</li> </ul>	<ul style="list-style-type: none"> <li>• Study of price and output trends in oligopoly markets</li> <li>• Price and non price competition in monopolistic competition</li> </ul>	<ul style="list-style-type: none"> <li>• Will develop ability to understand the market structures under imperfect competition</li> <li>• Will be able to compare perfect and imperfect competition</li> </ul>
4	18	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Teacher driven power point presentation</li> </ul>	<ul style="list-style-type: none"> <li>• You tube lectures</li> <li>• Online PPTs</li> </ul>	<ul style="list-style-type: none"> <li>• Application of backward bending supply curve of labor in the market</li> <li>• Study of application of theories of factor pricing</li> </ul>	<ul style="list-style-type: none"> <li>• Will understand the theory of marginal productivity.</li> <li>• Will understand the concept and theories in factor pricing</li> </ul>

## References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	<b>Advanced Economic Theory, Microeconomic Analysis</b>	<b>Ahuja H.L</b>	<b>S.Chand and Company</b>	<b>New Delhi</b>
2.	<b>Price Theory and Applications</b>	<b>Jack Hirshlifer</b>	<b>Prentice Hall of India, Pvt. Ltd</b>	<b>New Delhi</b>
3.	<b>Microeconomics,</b>	<b>Paul A. Samuelson and William D. Nordhaus</b>	<b>McGrawhill International Ed</b>	<b>New York</b>
4.	<b>First Principles of Economics,</b>	<b>Richard G. Lipsey, Colin Harbury:</b>	<b>Gerorge Weidenfeld and Nicolon Ltd,</b>	<b>London</b>
5.	<b>Consumer Behaviour and Managerial Decision Making,</b>	<b>Frank R. Kardes: Pearson,</b>	<b>Prentice Hall,</b>	<b>New Delhi</b>
6.	<b>, Microeconomics</b>	<b>R. Glenn Hubbard, Anthony Patrick O.</b>	<b>Pearson, Prentice Hall,</b>	<b>New Delhi</b>



		<b>Brien</b>		
<b>7.</b>	<b>Microeconomics: Principles, Application and Tools</b>	<b>O'Sullivan, Sheffrin, Perez</b>	<b>Pearson, Prentice Hall,</b>	<b>New Delhi</b>
<b>8.</b>	<b>Priniples of Economics</b>	<b>Karl E. Case, Ray C.Fair,</b>	<b>Pearson,Prentice Hall</b>	<b>New Delhi</b>

**Suggested References**  
**Web Reference**

Sr. No	Lectures	Films	PPTs	Articles
1	<a href="https://www.youtube.com/watch?v=oA8kL7OD74o">https://www.youtube.com/watch?v=oA8kL7OD74o</a>	<a href="https://www.economicsonline.co.uk/Business_economics/Perfect_competition.html">https://www.economicsonline.co.uk/Business_economics/Perfect_competition.html</a>	<a href="https://www.slideshare.net/zeeshanyounas35/perfect-and-imperfect-market-competition-76374490">https://www.slideshare.net/zeeshanyounas35/perfect-and-imperfect-market-competition-76374490</a>	<a href="http://www.scielo.br/scielo.php?script=sci_arttext&amp;pid=S1413-70542016000300337">http://www.scielo.br/scielo.php?script=sci_arttext&amp;pid=S1413-70542016000300337</a>
2	<a href="https://www.economicshelp.org/blog/311/markets/monopolistic-competition/">https://www.economicshelp.org/blog/311/markets/monopolistic-competition/</a>	<a href="https://www.youtube.com/watch?v=TTJ4kFX6uRM">https://www.youtube.com/watch?v=TTJ4kFX6uRM</a>	<a href="https://slideplayer.com/slide/6410262/">https://slideplayer.com/slide/6410262/</a>	<a href="http://www.economicdiscussion.net/price/factor-pricing-concept-and-theories/3875">http://www.economicdiscussion.net/price/factor-pricing-concept-and-theories/3875</a>
3	<a href="http://www.economicdiscussion.net/price/factor-pricing-concept-and-theories/3875">http://www.economicdiscussion.net/price/factor-pricing-concept-and-theories/3875</a>	<a href="https://www.youtube.com/watch?v=66fKCrsl_e_8">https://www.youtube.com/watch?v=66fKCrsl_e_8</a> <a href="https://www.youtube.com/watch?v=qXmGnQ0WzPM">https://www.youtube.com/watch?v=qXmGnQ0WzPM</a>	<a href="http://delhi.gov.in/wps/wcm/connect/40fd320047adb2d2aa2fff3f47d42062/economics-Rands.pps?MOD=AJPERES&amp;lmod=-277090329">http://delhi.gov.in/wps/wcm/connect/40fd320047adb2d2aa2fff3f47d42062/economics-Rands.pps?MOD=AJPERES&amp;lmod=-277090329</a>	<a href="https://www.investopedia.com/ask/answers/032515/what-difference-between-perfect-and-imperfect-competition.asp">https://www.investopedia.com/ask/answers/032515/what-difference-between-perfect-and-imperfect-competition.asp</a>

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## Syllabus for B. Com. Semester: - II

### Subject Name: - Business Mathematics and Statistics - II

Course code: - 124 (A)

Depth of the program – Basic Knowledge of Mathematics and Statistics

#### Objective of the Program

1. To introduce the basic concepts in Finance and Business Mathematics and Statistics
2. To familiar the students with applications of Statistics and Mathematics in Business
3. To acquaint students with some basic concepts in Statistics.
4. To learn some elementary statistical methods for analysis of data.
5. The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Matrices and Determinants (up to order 3 only)</b>	Definition of a Matrix, Types of Matrices, Algebra of Matrices, Determinants, Adjoint of a Matrix, Inverse of a Matrix via Adjoint Matrix, Homogeneous System of Linear equations, Condition for Consistency of homogeneous system, Solution of Non-homogeneous System of Linear equations (not more than three variables), Applications in Business and Economics, Examples and Problems.	<ol style="list-style-type: none"><li>1. To understand the concept of matrices and determinants.</li><li>2. To understand the application of determinant in solving linear equations</li><li>3. To understand applications of matrices and determinants in business and economics.</li></ol>
2	<b>Linear Programming Problems (LPP) (for two variables only)</b>	Definition and terms in a LPP, formulation of LPP, Solution by Graphical method, Examples and Problems	<ol style="list-style-type: none"><li>1. To understand the concept of LPP and its application in business and decision making.</li><li>2. To understand graphical method to solve business optimization problems with two variables.</li></ol>
3	<b>Correlation and Regression</b>	Concept and types of correlation, Scatter diagram, Interpretation with respect to magnitude and direction of relationship. Karl Pearson's coefficient of correlation for ungrouped data. Spearman's rank correlation coefficient. (with tie and without tie) Concept of regression, Lines of regression for ungrouped data, predictions using lines of regression. Regression coefficients and their properties (without proof). Examples and problems.	<ol style="list-style-type: none"><li>1. To use correlation for knowing the relationship between two variables.</li><li>2. To use regression for prediction</li></ol>

4	<b>Index numbers</b>	Concept of index number, price index number, price relatives. Problems in construction of index number. Construction of price index number: Weighted index Number, Laspeyre's, Paasche's and Fisher's method. Cost of living / Consumer price index number: Definition, problems in construction of index number. Methods of construction: Family budget and aggregate expenditure. Inflation, Uses of index numbers, commonly used index numbers. Examples and problems.	<ol style="list-style-type: none"> <li>1. To know different types index numbers and problems in their construction.</li> <li>2. To know the applications of various index numbers.</li> </ol>
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### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Expected Outcome
1	12	ICT	Students will be able to apply the theory of matrices to solve business and economic problems.
2	12	ICT	Students will be able represent business and economic optimization problems involving two variables as LPP and solve those problems using graphical method
3	16	ICT	<p>Students will able to predict the type of relationship between bivariate data.</p> <p>Students will be able predict the value of unknown from give bivariate data.</p>
4	08	ICT	<p>Students will be able compute different index numbers.</p> <p>Students will be able to compute cost of living.</p>

**References:**

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1.	<b>Practical Business Mathematics</b>	<b>S. A. Bari</b>	<b>New Literature Publishing Company</b>	<b>New Delhi</b>
2.	<b>Mathematics for Commerce</b>	<b>K. Selvakumar</b>	<b>Notion Press</b>	<b>Chennai</b>
3.	<b>Business Mathematics with Applications</b>	<b>Dinesh Khattar &amp; S. R. Arora</b>	<b>S. Chand Publishing</b>	<b>New Delhi</b>
4.	<b>Business Mathematics and Statistics</b>	<b>N.G. Das &amp; Dr. J.K. Das</b>	<b>McFraw Hill</b>	<b>New Delhi</b>
5.	<b>Fundamentals of Business Mathematics</b>	<b>M. K. Bhowal</b>	<b>Asian Books Pvt. Ltd</b>	<b>New Delhi</b>
6.	<b>Operations Research</b>	<b>P. K. Gupta &amp; D. S. Hira</b>	<b>S. Chand Publishing</b>	<b>New Delhi</b>
7.	<b>Mathematics for Economics and Finance: Methods and Modeling</b>	<b>Martin Anthony and Norman Biggs</b>	<b>Cambridge University Press</b>	<b>Cambridge</b>
8.	<b>Financial Mathematics and Its Applications</b>	<b>Ahmad Nazri Wahidudin</b>	<b>Ventus Publishing ApS</b>	<b>Denmark</b>
9.	<b>Fundamentals of Mathematical Statistics</b>	<b>Gupta S. C. and Kapoor V. K.,</b>	<b>Sultan Chand and Sons</b>	<b>23, Daryaganj, New Delhi 110002</b>
10.	<b>Statistical Methods</b>	<b>Gupta S. P.:</b>	<b>Sultan Chand and Sons</b>	<b>23, Daryaganj, New Delhi 110002</b>
11.	<b>Applied Statistics</b>	<b>Mukhopadhyaya Parimal</b>	<b>New Central Book Agency Pvt. Ltd.</b>	<b>Calcutta.</b>
12.	<b>Fundamentals of Statistics</b>	<b>Goon A. M., Gupta, M. K. and Dasgupta, B.</b>	<b>World Press</b>	<b>Calcutta.</b>

13.	Fundamentals of Applied Statistics	Gupta S. C. and Kapoor V. K.:	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002
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**Suggested references**  
**Web reference for Semester I & II**

1. [www.freestatistics.tk](http://www.freestatistics.tk)(National Statistical Agencies)
2. [www.psychstat.smsu.edu/sbk00.htm](http://www.psychstat.smsu.edu/sbk00.htm)(Onlinebook)
3. [www.bmj.bmjournals.com/collections/statsbk/index.shtml](http://www.bmj.bmjournals.com/collections/statsbk/index.shtml)
4. [www.statweb.calpoly.edu/bchance/stat-stuff.html](http://www.statweb.calpoly.edu/bchance/stat-stuff.html)
5. [www.amstat.org/publications/jse/jse-data-archive.html](http://www.amstat.org/publications/jse/jse-data-archive.html)(International journal on teaching and learning of statistics)
6. [www.amstat.org/publications/chance](http://www.amstat.org/publications/chance)(Chancemagazine)
7. [www.statsci.org/datasets.html](http://www.statsci.org/datasets.html)(Datasets)
8. [www.math.uah.edu/stat](http://www.math.uah.edu/stat)(Virtual laboratories in Statistics)
9. [www.amstat.org/publications/stats](http://www.amstat.org/publications/stats)(STATS : the magazine for students of Statistics)
10. [www.stat.ucla.edu/cases](http://www.stat.ucla.edu/cases)(Case studies in Statistics).
11. [www.statsoft.com](http://www.statsoft.com)
12. [www.statistics.com](http://www.statistics.com)
13. [www.indiastat.com](http://www.indiastat.com)
14. [www.unstat.un.org](http://www.unstat.un.org)
15. [www.stat.stanford.edu](http://www.stat.stanford.edu)
16. [www.statpages.net](http://www.statpages.net)
17. [www.wto.org](http://www.wto.org)
18. [www.censusindia.gov.in](http://www.censusindia.gov.in)
19. [www.mospi.nic.in](http://www.mospi.nic.in)
20. [www.statisticsofindia.in](http://www.statisticsofindia.in)

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# **Computer Concepts & Applications - II**

**Semester – II**  
**Course Code -124 (B)**

## **Unit 1 Introduction to E-commerce Tools**

**[12]**

### **Process of E-Commerce**

Types of E-Commerce; Role of Internet and Web in E-Commerce; Technologies Used in E-Commerce Systems

### **E-Commerce Activities:**

Various Activities of E-Commerce; Various Modes of Operation Associated with E-Commerce; Elements and Resources Impacting E-Commerce and Changes; Types of E-Commerce Providers and Vendors; Opportunity Development for E-Commerce Stages; Development of E-Commerce Business Case; Components and Factors for the Development of the Business Case; Steps to Design and Develop an E-Commerce Website.

## **Unit 2 Introductions to E-Marketing**

**[14]**

### **E-Marketing:**

Traditional Marketing; E-Marketing; Identifying Web Presence Goals – Achieving web presence goals, Uniqueness of the web, Meeting the needs of website visitors, Site Adhesion: Content, format and access; Maintaining a Website; Metrics Defining Internet Units of Measurement; Online Marketing; Advantages of Online Marketing.

### **E-Customer Relationship Management:**

Customer Relationship Management (CRM) – Marketing automation, Enterprise customer management; Customer Relationship Management Areas; CRM Processes; Architectural Components of a CRM Solution – Customer's information repository, Campaign management, Event triggers, business logic and rules repository, Forecasting and planning tools, Electronic Customer Relationship Management; Need, Architecture and Applications of Electronic CRM.

## **Supply Chain Management:**

Supply Chain Management (SCM); Goals of SCM; Functions of SCM; Strategies of SCM; Electronic SCM and its benefits; Components of Electronic SCM; Electronic Logistics and its Implementation.

## **Unit 3 Electronic Payment System**

**[14]**

**Electronic Data Interchange** (Introduction to EDI, EDI Architecture Financial EDI, Overview of the technology involved in EDI

### **Introduction to EPS**

Application of Online payment system ,Introduction to EFT (Electronic Fund Transfer) Types of EFT ( NEFT, RTGS), E-Payment Systems: Electronic Funds Transfer; Digital Token Based E-Payment Systems; Modern Payment Systems; Steps for Electronic Payment; Payment Security; Net Banking.

Introduction to Digital Signature and Digital Certificates, Stages of SET

Types of Payment System: Digital Cash, Electronic Cheque, Smart Card, Credit/Debit Card

## **Unit 4 Introduction to M-Commerce**

**[8]**

Definition, Need and Scope, Advantages and disadvantages of M-commerce, M-Commerce and its applications.,

Types of M-Commerce. Products and Services of M-Commerce,

Mobile payment application. Difference between E-commerce and M-Commerce.

## Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
Unit – I	12	Use ICT or presentation on E-commerce Tools	U-tube Tutorial on E-commerce Tools	-	Familiar with E-commerce Tools
Unit – II	12	Use ICT or presentation on E-Marketing	U-tube Tutorial E-Marketing	One case study on E-commerce Website	Familiar with E-Marketing
Unit – III	12	Use ICT or presentation on Electronic Payment System	U-tube Tutorial Electronic Payment System	Handle One E-payment Transition application Bhim, Pay...etc	Familiar with Electronic Payment System
Unit – IV	12	Use ICT or presentation on M-Commerce	U-tube Tutorial M-Commerce	-	Familiar with M-Commerce

## Reference Books

- [1]. Computer Fundamentals by: Anita Goel, Pearson Education India ISBN: 9788131742136
- [2]. Connecting with Computer Science, by Greg Anderson, David Ferro, Robert Hilton, Course Technology, Cengage Learning, ISBN:9781439080351
- [3]. Fundamentals of Computer : For undergraduate courses in commerce and management, ITL Education Solutions Limited, Pearson Education, ISBN:9788131733349
- [4]. Introduction to Computer Science, 2/e, ITL Education Solutions Limited, Pearson Education, ISBN:9788131760307
- [5]. Frontiers of Electronic Commerce, Ravi Kalakota, Andrew B. Whinston, Pearson Education, ISBN:9788177583922



- [6]. Internet: The Complete Reference, Margaret Levine Young, Tata McGraw Hill Education Private Limited, ISBN: 9780070486997
- [7]. On the Way to the Web: The Secret History of the Internet and Its Founders, A. Banks, Apress Publication, ISBN: 9781430208693
- [8]. Computers and Commerce: A Study of Technology and Management at Eckert-Mauchly Computer Company, Engineering Research Associates, and Remington, Arthur L. Norberg, MIT Press (MA), ISBN: 9780262140904
- [9]. Essential of E-commerce technology By V. Rajaraman, Prentice Hall India Learning Private Limited ISBN 9788120339378
- [10]. E-commerce Fundamental and Application By Henry Chan, Wiley ISBN: -978126514694
- [11]. Information Technology By Dr. Kishor Jagtap, Tech-Max Publications, Pune

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## Revised syllabi (2019 Pattern) for three years B.Com. Degree course (CBCS)

### Semester : - II

### Subject : - Organizational Skill Development- II

Course Code - 125 (A)

#### Objectives of the course

1. To imbibe among the students the qualities of a good manager and develop the necessary skill sets
2. To develop the technical skills of the students to keep up with the technological advancements and digitalization
3. To develop the communication skills of students and introducing them to the latest tools in communication
4. To develop writing, presentation, interpersonal skills of the students for effective formal corporate reporting.
5. To educate the students on the recent trends in communication technology and tools of office automation

#### Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Office Manager	<ol style="list-style-type: none"><li>a. Qualities of office manager, skills of office manager - Interpersonal skills, Presentation skills, thinking and Negotiation skills ,Duties and Responsibilities of office manager</li><li>b. Goal Setting:- Concept, Importance of goals, SMART( Specific, Measurable, Achievable, Realistic and Time Bound)</li><li>c. Time Management :-Meaning, Techniques, Principles and Significance</li></ol>	<ol style="list-style-type: none"><li>1. Developing the necessary set of managerial skills</li><li>2. Developing Goal setting and Time management skills in all areas of life</li></ol>
2	Management Reporting (Office Reports)	<ol style="list-style-type: none"><li>a. Meaning, Purpose or Objectives and Classification of Report, Principles of preparation of report, qualities of good report, steps in report presentation, evaluating the report ,follow up of reports</li><li>b. Office Communication :- Meaning, Significance, Barriers and Recent trends in Communication such as</li></ol>	<ol style="list-style-type: none"><li>1. Enhancing the communication skills</li><li>2. Developing report writing skills for formal reporting</li><li>3. Usability of latest Communication Media</li></ol>

		E-mail, Video Conferencing, Tele- Conferencing, Internet, Intranet , WWW, etc.,	
<b>3</b>	Work Measurement and standardization of office work	<p>a. Definition, Objects, Importance, steps in work measurement, techniques of work measurement - Time study and Motion study</p> <p>b. Standardization of office work:- Meaning, objects, areas of standardization, types of standards, methods of setting standards, advantages and limitations of standardization</p>	<ol style="list-style-type: none"> <li>1. Conceptual Clarity on the concept of need and importance of work measurement</li> <li>2. Developing Technical and analytical skills for performance measurement.</li> <li>3. Skills to develop ideal standards at work place.</li> </ol>
<b>4</b>	Office Automation	Objects of Mechanization, Advantages of Mechanization, Factors in selecting office machines, Leasing versus Purchasing Office equipment , Types of modern Office Machines	<ol style="list-style-type: none"> <li>1. Enhancement of Technical knowledge and developing technical skills to adapt to the technical advancements</li> <li>2. Critical thinking skills and technical skills to overcome the problem of choice among options</li> </ol>

### Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative methods to be used</b>	<b>Film shows and AV Applications</b>	<b>Project</b>	<b>Expected Outcome</b>
1	12	Power Point Presentation SMART Goal Setting activity for oneself for 3 yrs Role plays	TV shows on Management	Self SMART Goal Setting Report in Detail for 3 years	Conceptual Clarity Goal Setting and Goal Measurement, Enhancing the Time Management Skills
2	12	Power Point Presentation Online Videos ,Use of Latest communication Media Live in Class Rooms	Use of Latest Communication Technology and Communication Applications	Report writing on Recent trends in Communication	Enhancing Communication Skills ,Usability of latest communication media
3	12	Guest Lectures by Experts			Development Technical and analytical skills
4	12	PPT , Educational Videos	Online Videos	Report on various office automation tools	Development of Technical skills

### References :

List of Books Recommended :

1. **Modern Office Management – By Mills, Geoffrey**
2. **Office Management – By Dr. R.K. Chopra , Priyanka Gauri**
3. **Office Management – By R.S.N. Pillai**
4. **Office Management – By K.L.Maheshwari , R.K . Maheshwari**
5. **Modern Office Management : Principles and Techniques – By J.N.Jian , P.P.Singh**

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**F.Y B.Com.**

Optional Paper

**Subject Name: Banking and Finance**

Course Code: 125(B)

**SEMESTER II: FUNDAMENTALS OF BANKING – II**

**Objectives:**

- To develop the working capability of students in banking sector
- To Make the Students aware of Banking Business and practices.
- To enlighten the students regarding the new concepts introduced in the banking system.

**Credit: 04**

**No. of Lectures: 48**

<b>Unit No.</b>	<b>Topics</b>	<b>No. of Lectures</b>	<b>Teaching Method</b>
<b>1.</b>	<b>Lending Principles and Balance Sheet of a Bank</b>  Safety, Liquidity, Profitability, Diversification of risks and other Principles of Lending, Conflict between Liquidity, Profitability and Safety  Customer assessment through CIBIL and other similar agencies  Balance sheet of a bank.	<b>10</b>	Lecture, Expert Lecture, PPT/ Poster Presentation, Group Discussion, Library / Home, Assignment, Visit to a bank
<b>2.</b>	<b>Negotiable Instruments</b> Definition, meaning and characteristics of Negotiable instruments Definition, meaning and characteristics of Promissory Note, Bill of Exchange and Cheque. Types of Cheques- Bearer, Order and Crossed Types of Crossing- General and Special. Dishonour of Cheque	<b>12</b>	Lecture, PPT/ Poster Presentation, Group Discussion, Library /Home Assignment, Visit to a bank

3.	<b>Endorsement</b> Definition and meaning of Endorsement Types of Endorsement- Blank, Full or Special, Restrictive, Partial, Conditional, Sans Recourse, Facultative. Effects of Endorsement.	08	Lecture, PPT/ Poster Presentation, Group Discussion, Library /Home Assignment, Visit to a bank
4.	<b>Technology in Banking</b> Role and Uses of Technology in Banking Automated Teller Machine (ATM) – onsite and offsite ATM, Cash Deposit machine, Cheque Deposit machine, Passbook Printing Machine, Note and Coin counting device, Fake currency detector, Credit card, Debit card –Personal Identification Number ( PIN ) – Use and Safety, Mobile Banking – Mobile Banking Applications - BHIM ( Bharat Interface for Money ) / UPI ( Unified Payments Interface ), Net Banking , Core Banking Online enquiry and update facility, Home Banking- Corporate and Personal. Precautions in using Technology in Banking Current Trends in Banking Technology	18	Lecture, Expert Lecture, PPT/ Poster Presentation, Group Discussion, Library / Home Assignment, Visit to a bank

**References:**

1. Majumdar N. C., ‘Fundamentals of Modern Banking’, New Central Book Agency (P) Ltd., New Delhi.
2. Arondekar A.M. & Others, ‘Principles of Banking’, Macmillan India Pvt. Ltd.
3. Srinivasan D. & Others, ‘Principles & Practices of Banking’, Macmillan India Pvt. Ltd.
4. Agarwal O.P, (4<sup>th</sup> Edition, 2017), ‘Banking and Insurance’, Himalaya Publication House.
5. Gopinath M. N., (1<sup>st</sup> Edition, 2008) ‘Banking Principles and Operations’, Snow White Publications Pvt. Ltd, Mumbai.
6. Gordon E. & Natarajan K., (21<sup>st</sup> Revised Edition), ‘Banking – Theory, Law and Practice’ ,Himalaya Publication

**House.**

- 7. Kaptan S S & Choubey N S, “E-Indian Banking in Electronic Era”, Sarup & Sons, New Delhi 2003.**
- 8. Padmalatha Suresh, Justin Paul, “Management of Banking and Financial Services” Second Edition, 2013, Published By Dorling Kindersley (Pearson)**

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**F.Y.B.com**

**Optional Paper**

**Subject name: Defense Organization and Management in India**

**COURSE CODE: 125 (D)**

**SEMESTER- II: DEFENCE ORGANISATION AND MANAGEMENT IN INDIA-II**

**Objectives:**

- 1) To understand the Indian intelligence services.
- 2) To know the Evolution of War techniques and Economic warfare.
- 3) To understand Indian internal security.

<b>Unit No.</b>	<b>Topic</b>	<b>No. of Lectures</b>	<b>Teaching Method</b>
<b>1.</b>	<b>Indian Intelligence Services</b> 1.1 History & Types of Intelligence. 1.2 Process & Principals of Intelligence. 1.3 Devices for Collecting Intelligence. 1.4 Role of Intelligence. 1.5 Counter Intelligence. 1.6 Indian Intelligence Organization.	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignment
<b>2.</b>	<b>Evolution of War Techniques</b> 2.1 Definition of war 2.2 Concept of war 2.3 Causes of war 2.4 Function of war 2.5 Elements of war 2.6 Resources of war	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Study Visit



<b>3.</b>	<b>Economic Warfare</b> 3.1 Meaning 3.2 War time Economy 3.3 Economic Mobilization 3.4 Remedy 3.5 War Economy & War Effects 3.6 Cost of War.	<b>12</b>	Lecture,PPT, Group Discussion, Library Work,
<b>4.</b>	<b>Economic Constraints on Indian Internal Security</b> 4.1 Economic Diversification in various states of India 4.2 Economic Influence on State & Centre Relations 4.3 Unemployment and Poverty. 4.4 Economic losses due to Natural Calamities.	<b>12</b>	Lecture,PPT, Group Discussion, Library Work, Assignment
	<b>Total</b>	<b>48</b>	

### References:

- 1) C. Lakshmi (1998), Trends in India's' Defense Expenditure," ABC, New Delhi'.
- 2) Venkateshwaram A. L., 'Defense Organisation in India', Sage Publication, New Delhi.
- 3) Chaudhari A. P. 'Hkkjrh; ;qn/k ra=kphmRdkarh,' Prashant Publication, Jalgaon
- 4) Col.(Retd) S. Sandeep, 'Funding for Defense and Development' Sumit enterprises, New Delhi.
- 5) Sali M.L., 'Military Georgraphy' Manas Publication, New Delhi.
- 6) Chaudhari A.P.,';qn/kfoKku&laj{k.k o lkefjd'kkL=' Diamond Publication, Pune.
- 7) Raju G. C. Thomas (1978) – The Defense of India a Budgetary Perspective of Strategy and Politics," Mac Millan Publication, New Delhi.
- 8) L t. Gen. R. K. Jasbir Singh (1999), 'India's Defense Year Books,'Nataraj Publication, Dehradun.
- 9) Jadhav V.Y, Hkkjrkph jk"V^h; lqj{kk, " Snehvardhan Publication , Pune

## **Revised Syllabi (2019 Pattern) for three years B.Com Degree Course (CBCS)**

**Option paper: - Theory and Practice of Co-operation**

**Semester:-F.Y.B.Com -Semester II**

**Course Code - 125 (E)**

**Subject: - -: Theory and Practice of Co-operation- II**

### **Objectives:**

1. To acquaint the students with types of co-operatives.
2. To study the role of Government in Co-operative movement.
3. To Analysis the impact of LPG on Co-operation movement.
4. To study the means of Co-operative education and Training.

### **Depth of Programme: - Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	Types of Co-operative	Rural Co-operative and Urban Co-operative Agriculture Co-operative and Non Agriculture Co-operative Credit Co-operative and Non Credit Co-operative Weaker Sections Co-operatives Federation of Co-operatives	i. To understand the Rural Co-operative and Urban C-operative institution ii. To understand the Credit Co-operative and Non credit Co-operative Society
<b>2</b>	<b>Co-operative Management</b>	Co-operative Management , Nature and function, The Role of General Body, Management committee Chairman and Managing Director/Secretary, Professional Management Co-operatives ,Role of leadership in Co-operative Management	i. To understand Co-operative Management ii. To understand Role of leadership in Co-operative Management iii. To understand Professional Management Co-operatives

<b>3</b>	<b>Impact of Liberalization ,Privatization and Globalization on Co-operative movement</b>	Impact of Liberalization, Impact of Privatization , Impact of Globalization , Opportunities for Co-operative movement in global era	To understand the Impact of Liberalization, Privatization and Globalization on Co-operative movement
<b>4</b>	<b>Co-operative Education and Training:.</b>	Co-operative Education and Training, Objectives of Co-operative Education and Training, Role of National Co-operative union of India (NCUI) ,National Council for Co-operative Training (NCCT), Institutional arrangement for co-operative training, State Co-operative Union, Co-operative training, Education and Consultancy in Maharashtra, Regional Institute of Co-operative Management, Vaikunth Mehta National Institute of Co-operative Management Pune, Maharashtra	To understand the Objectives of Co-operative Education and Training, Training arrangement in India To understand Institutional arrangement for co-operative training

## Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative Methods to be used</b>	<b>Film Shows and AV Application</b>	<b>Project</b>	<b>Expected Outcome</b>
<b>1</b>	12	Documentary, Pre reading, Class discussion, examples from newspapers and internet resources, Article Review, PPT	Short Film Show on Types of Co-operative, AV Application (Audio and Visual Application)	Project Report on Credit Co-operative and Non Credit Co-operative	Understanding of basic knowledge of Types of Co-operative Society

2	12	Guest Lectures of eminent personalities, experience sharing, Pre reading, Class discussion, PPT, study visit to Co-operative department offices and Co-operative society	You Tube Video on Co-operative Management	Project on Nature and function of Co-operative management	Understanding Co-operative Management
3	12	Organise Seminar/workshop for students, Pre reading, Class discussion, Internet resources, case studies, Survey report	Use of You tube , review of particular topic	Project Report on the Impact of Liberalization ,Privatization and Globalization on Co-operative movement	Understanding the Impact of Liberalization ,Privatization and Globalization on Co-operative movement
4	12	Pre reading, Class discussion, examples through Newspapers and internet resources, Guest Lectures of eminent personalities ,PPT	Group discussion on Problems and suggestions of education and training programmes of Co-operative Education	Review of education and training programmes of Co-operative Education	Understanding Co-operative Education and Training .  understanding Institutional arrangement for co-operative training

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Unit Test, Group Discussion	Written Examination	Seminar/Workshop on Types of Co-operative Society
Unit-II	Class participation, Assignment, Library Work, Unit Test, Power point presentation	Written Examination	study visit to Co-operative Institution

Unit-III	Class participation, Assignment, Library Work, Unit Test, Group Discussion, PPT	Written Examination	Guest Lectures of eminent personalities
Unit-IV	Class participation, Assignment, Library Work, Unit Test, Classroom Discussion	Written Examination	study visit to Co-operative training Institution

## References

Sr. No	Title of Book	Author/s	Publication	Place
1	Co-operation and Rural Development	Principal Dr.Nitin Ghorpade	Success	Pune
2	Co-operation- Principles and Practice-	Dr. D.G. Karve		
3	Theory, History and Practice of Co-operation	Dr. R.D. Beddy		
4	Bhartiya Sahkari Chalval- Tatve va Vyavhar ( Marathi )	Prof. Jagdish Killol; Prof. Arvind Bondre; Prof. A. C. Bhavsar		
5	Sahkari Chalval 1904-2004 (Marathi)	Prof. K. L. F ale		
6	New Dimensions of Co-operative Management	G.S. Kamat	Himalaya Publication	New Delhi
7	Rural Development in India-Policies and Programme	Abdul Azees NP and S.M. Javed Aktar	Kalpaz Publication	
8	Human Resource Management Practices in Co-operative sector	Principal Dr.Shaikh Aftab Anwar	Idea Publication	New Delhi
9	Journal of Commerce and Management Thought(JCMT)			
10	Journal Co-operative Organization and Management , Journal of Co-operative studies			

**F.Y.B.Com.**  
**Semester - II**  
**Optional Paper**  
**Subject Name- Managerial Economics- II**  
**Course Code - 125 (F)**

**Objectives:**

1. To aware the students about various pricing practices.
2. The Students learn about the role of profit in business.
3. The Students should realize the importance of the different methods of capital budgeting as tool of project management.
4. To help the students in applying the knowledge so acquired in policy planning and managerial decision making

<b>Unit No</b>	<b>Unit Title</b>	<b>Content</b>	<b>Purpose Skills to be developed</b>
1	Forms of Business Organization	1.1 Sole Proprietorship - Meaning, features, Merits and Demerits. 1.2 Partnership - meaning, features, merits and demerits. 1.3 Joint Stock Company- Meaning, features, merits and demerits, Distinction between public company and private company.	1. To know the fundamental business organization 2.To understand the comparative merits and demerits of these organization.
2	Public Enterprises and MNCs	2.1 Public Enterprise- Meaning, features, merits and demerits, Types of Public Enterprises. 2.2 Public Private Partnership. 2.3 Multinational Corporations- Meaning, features, merits and demerits. 2.4 Role MNCs in India.	1. To understand the need for public enterprises. 2. To know the types of PEs. 3. To be familiar with the features and role of MNCs in an economy.

3	Pricing Practices-	<p>3.1 Factor affecting pricing decision</p> <p>3.2 Components in Pricing of the product</p> <p>3.3 Marginal Cost Pricing, mark-up pricing, transfer pricing, product line pricing, price skimming and penetration.</p> <p>3.4 Profit Management, Nature and measurement of profit, The hypothesis of profit maximization and its alternative.</p>	<p>1. To know the various pricing practices</p> <p>2. To know the importance of profit management in pricing practices.</p>
4	Capital Budgeting and Investment Analysis	<p>4.1 Meaning of Capital Budgeting, Need and nature of capital budgeting.</p> <p>4.2 Demand for Capital and Supply of Capital (sources of capital)</p> <p>4.3 Capital Rationing</p> <p>4.4 Methods of Capital Budgeting- Net Present Value (NPV), Internal Rate of Return (IRR), Payback period method, Average Rate of Return.</p> <p>4.5 Apprizing the profitability of project.</p>	<p>1. To know the importance capital in a business.</p> <p>2. To understand various technical concept related with investment decision.</p>

## Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	<ul style="list-style-type: none"> <li>i. Open book discussion</li> <li>ii. Case studies</li> <li>iii. Group discussion</li> </ul>	<ul style="list-style-type: none"> <li>i. You tube lectures on different types of business organization.</li> </ul>	<ul style="list-style-type: none"> <li>i. Study of comparative merits and demerit of different business organisation</li> </ul>	<p>Students will learn about the intricacies of the various Business Organizations, their features and their comparative merits and demerits.</p> <p>In addition to that the student knows the features and role of MNCs in India.</p>
2	10	<ul style="list-style-type: none"> <li>i. Case Studies</li> <li>ii. Group discussion</li> <li>iii. Pair learning</li> </ul>	<ul style="list-style-type: none"> <li>i. You tube lectures on PEs and MNCs.</li> <li>ii. Films</li> </ul>	<ul style="list-style-type: none"> <li>i. Study of role of MNCs.</li> <li>ii. Study of problem of PEs.</li> </ul>	<p>Student should know types of public enterprises and their comparative advantages and disadvantages. In addition to that students should features and role of MNCs in India.</p>
3	14	<ul style="list-style-type: none"> <li>i. Case Studies</li> <li>ii. Group discussion.</li> <li>iii. Game oriented Classes.</li> </ul>	<ul style="list-style-type: none"> <li>i. Films.</li> <li>ii. You tube lectures</li> </ul>	<ul style="list-style-type: none"> <li>i. Study of pricing policy followed by a firm in your area.</li> </ul>	<p>Awareness of students about various pricing practices</p>
4	14	<ul style="list-style-type: none"> <li>i. Case Studies</li> <li>ii. Open book discussion</li> <li>iii. Group discussion.</li> </ul>	<ul style="list-style-type: none"> <li>i. You tube lectures</li> <li>ii. Films</li> </ul>	<ul style="list-style-type: none"> <li>i. Study of method of capital budgeting.</li> </ul>	<p>Students should realize the importance of the different methods of Capital Budgeting and investment as a tool of profit management</p>



## References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
<b>1.</b>	Managerial Economics- Economic Tools for Todays Decision Makers,	Keat Paul G. and Philip K.Y. Young	Prentice Hall	Prentice Hall, New Jersey
<b>2.</b>	Managerial Economics,	D.N.Dwivedi D.N	Vikas Publishing House	Delhi
<b>3.</b>	Managerial Economics in a Global Economy	Salvatore D.	8th Edition, Oxford University Press.	
<b>4.</b>	Managerial Economics,	Sumitra Paul,	Macmillan 2008	
<b>5.</b>	P.L.Mehatha, Managerial	Managerial Economics	8th Ed. S.Chand Publishing	Economics, 8th Ed. S.Chand Publishing
<b>6.</b>	D.M.Mithani,	Managerial Economics-2008	Himalaya Publishing House	Mumbai
<b>7.</b>	Shankaran S.	Managerial Economics	Margham Publications,	Madras
<b>8.</b>	Thomas Christopher R. and Charles, Maurice S.,	Managerial Economics	McGraw Hill Irwin,	Boston

### **Suggested references Web reference**

<https://nptel.ac.in/courses/110101005/2>

<https://nptel.ac.in/downloads/110101005/>

<http://cec.nic.in/Pages/Home.aspx>

<http://en.wikipedia.org/wiki/Economics>

<http://www.investopedia.com/university/economics/#axzz1XwhFTmtm>

<http://www.tutor2u.net/blog/index.php/economics/>

<http://www.economicshelp.org/>

<https://www.intelligenteconomist.com/economics-blogs/>

<https://www.coursera.org/courses?query=managerial%20economics>

<https://www.edx.org/course/introduction-to-managerial-economics-0>

<https://www.mooc-list.com/tags/managerial-economics>

<https://online.stmary.edu/mba/courses/managerial-economics>

<https://www.tru.ca/distance/courses/econ3041.html>

<https://www.euomba.org/managerial-economics/>

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**Revised Syllabi (2019 Pattern) for three year B. Com. Degree Course (CBCS)**  
**Semester – II**  
**Essentials of E- Commerce**

**Course Code :- 126 A**

**No. of Credits : 03**

**Objectives of the course :-**

1. To acquaint learners with electronic data interchange and its standards
2. To develop knowledge about e-commerce process and payment solution
3. To develop practical knowledge about security of e- commerce transactions
4. To help students understand traditional v/s electronic retailing

**Depth of the programme : Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Skills to be developed</b>
1	Electronic data interchange	Concept – types- merits-limitations of paper Brand Business, Area groups of business, Essential documents for EDE gawky electronic data interchange simile, Steps to start EDI, EDI standards, Types of EDI files, EDI & internet, Merits of EDI, Bottlenecks & limitations	1. Conceptual understanding of Electronic Data Interchange, documentation and merits of EDI.
2	Commerce Process & Payment solution	Concept of payment solution – need, internet access solution- Areas of solution – solution provider , online commerce solution – essentials of good solution technology, standards for e-commerce, e-service, e-solution, e-business solution. Shopping cart – shopping cart software, Merchant account – Features –digital receipts for online payment, Payment system & devices, Cyber cash, features –utility, Credit card, smart card, features, utility, trades & securities, Internet currency	1. Awareness about payment solutions, various payment methods and modern modes of digital payments.

Unit No.	Unit Title	Contents	Skills to be developed
3	E-commerce – security	Need of E-Commerce security, cybercrimes- resources of privacy- tampering – proxy server system, Encryption – types of security – security precautions – cryptogram – data encryption standards & certificate authority, Ensuring electronic security – e-locking services, Security caution in e-commerce – public key – infrastructure firewall – secure socket layer secure electronic transactions	1. Understanding of E-Commerce security, precautions while using E-Commerce and methods & Process of E-Commerce security.
4	Business oriented E-Commerce	Features of B2B e-commerce, Business models, E-procedure, Virtual Market, Collaborative supply chain management, Intercompany integration, B2B e-commerce communication	1. Technical knowledge about virtual market and other business to business e-commerce communication.

### Teaching Methodology:

Topic No.	Total Lectures	Teaching Methods	Film Shows and AV Applications
1	10	Lecture method ,Computer Laboratory demonstrations, Power Point Presentations	Online educational videos on related topics
2	12	Lecture method ,Computer Laboratory demonstrations, Power Point Presentations	Online educational videos on related topics
3	12	Lecture method ,Computer Laboratory demonstrations, Power Point Presentations	Online educational videos on related topics
4	14	Lecture method ,Computer Laboratory demonstrations, Power Point Presentations	Online educational videos on related topics

**References:**

1. E-Commerce – Henry chan willey, India
2. E-Commerce- P.T. Joseph P. H. I.
3. Understanding e-commerce, J. K. Shim A. A. Quareshi infinity books
4. E-commerce- P. W. Mann MJP publishers
5. E-commerce- C. S. Rayudu, Himalaya publishing house
6. E-commerce-K. K. Bajaj-D. Nag T. M. G. H.

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**F.Y. B.Com.**

**Optional Paper**

**Subject Name : Insurance and Transport - II**

**Course Code: 126 (B)**

**SEMESTER II - TRANSPORT**

**Objectives :**

1. To acquaint students with the concepts of transport.
2. To create awareness regarding basic knowledge about transportation system in India.
3. To make the students aware of career opportunities in the field of transport.

**No. of Lectures : 48**

<b>Unit No.</b>	<b>Topic</b>	<b>No. of Lectures</b>	<b>Teaching Method</b>
<b>1.</b>	<b>Introduction to Transport</b> 1.1 Meaning 1.2 Importance of Transport 1.3 Types of Transport 1.4 Benefits of Transport 1.5 Problems of Transport Development in India 1.6 Measures to solve Transport Problems 1.7 Career opportunities in Transport Sector	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignment

<p><b>2.</b></p>	<p><b>Road Transport</b></p> <p>2.1 Meaning and Characteristics of Road Transport</p> <p>2.2 Importance of Road Transport in India</p> <p>2.3 Development of Road Transport in India since 1951</p> <p>2.4 Problems and Issues in Road Development</p> <p>2.5 Measures for Improvement in Road Transport</p>	<p><b>12</b></p>	<p>Lecture, PPT, Group Discussion, Library Work, Assignment</p>
<p><b>3.</b></p>	<p><b>Railway Transport</b></p> <p>3.1 Meaning and Features of Railway transport</p> <p>3.2 Significance of Railway transport</p> <p>3.2 Monorail and Metrorail</p> <p>3.3 Gauge of a railway track-Meaning and Classification</p> <p>3.4 Advantages and Limitations of Railway transport</p> <p>3.5 Progress of Railway Transport in India since 1951</p> <p>3.6 Problems of Indian Railways</p> <p>3.7 Measures to solve problems of Indian Railways</p>	<p><b>12</b></p>	<p>Lecture, PPT, Group Discussion, Library Work, Assignment</p>
<p><b>4.</b></p>	<p><b>Water and Air Transport</b></p> <p><b>4.1 Water Transport:</b></p> <p>4.1.1 Meaning and Significance of Water Transport</p> <p>4.1.2 Inland Water Transport and Coastal or Marine Transport</p> <p>4.1.3 Indian Shipping Growth and Problems</p> <p>4.1.4 Prospects of Water Transport in India</p>	<p><b>12</b></p>	<p>Lecture, PPT, Group Discussion, Library Work, Assignment</p>

	4.1.4 Limitations of Water Transport		
	<b>4.2 Air Transport:</b>		
	4.2.1 Meaning and Features of Air Transport		
	4.2.2 Importance of Air Transport		
	4.2.5 Progress of Air Transport in India		
	4.2.4 Problems and Prospects of Air Transport		
	<b>Total</b>	<b>48</b>	

### References:

1. Misra S.K. and Puri V.K (2014) Indian Economy, Himalaya Publishing House, Mumbai.
2. India 2015, Ministry of Information and Broadcasting, Government of India.
3. Datt Gaurav and Mahajan Ashwani (2014) Datt and Sundharam Indian Economy, S. Chand and Company Ltd. New Delhi.
4. Agarwal A.N. (2001) Indian Economy, Problems of Development and Planning, WishwaPrakashan, New Delhi.
5. Shukla M.B. (2012) Indian Economy, Taxmann Publications(P)Ltd.,New Delhi.
6. Government of India, Economic Survey various Issues
7. Reserve Bank of India, Annual Report various issues
8. [http://www.indianrailways.gov.in/railwayboard/uploads/directorate/stat\\_econ/IRSP\\_2016-17/Facts\\_Figure/Fact\\_Figures%20English%202016-17.pdf](http://www.indianrailways.gov.in/railwayboard/uploads/directorate/stat_econ/IRSP_2016-17/Facts_Figure/Fact_Figures%20English%202016-17.pdf)
9. <http://www.ncert.nic.in/NCERTS/l/legy210.pdf>
10. [http://planningcommission.nic.in/reports/genrep/NTDPC\\_Vol\\_01.pdf](http://planningcommission.nic.in/reports/genrep/NTDPC_Vol_01.pdf)
11. [http://www.nwda.gov.in/upload/uploadfiles/files/NWDA\\_Annual\\_Report\\_English\\_2016-17-low.pdf](http://www.nwda.gov.in/upload/uploadfiles/files/NWDA_Annual_Report_English_2016-17-low.pdf)
12. [https://www.epw.in/system/files/pdf/1956\\_8/16/progress\\_of\\_indian\\_railways.pdf](https://www.epw.in/system/files/pdf/1956_8/16/progress_of_indian_railways.pdf)
13. [https://www.cs.mcgill.ca/~rwest/wikispeedia/wpcd/wp/r/Rail\\_transport\\_in\\_India.htm](https://www.cs.mcgill.ca/~rwest/wikispeedia/wpcd/wp/r/Rail_transport_in_India.htm)  
[https://www.cs.mcgill.ca/~rwest/wikispeedia/wpcd/wp/r/Rail transport in Indi](https://www.cs.mcgill.ca/~rwest/wikispeedia/wpcd/wp/r/Rail_transport_in_India.htm)



**Revised syllabi (2019 Pattern) for three years B.com Degree course (CBCS)**

**FY B Com Semester : II**

**Course Code - 126 (C)**

**Subject : Marketing and Salesmanship- Fundamental of Marketing- II**

**1. Objective of the Course**

1. To introduce the concept of Salesmanship.
2. To give insight about various techniques required for the salesman.
3. To inculcate the importance of Rural Marketing.
4. To acquaint the students with recent trends in marketing and social media marketing.

**Depth of the Program - Fundamental Knowledge**

**Objectives of the Program**

1. To help the students to prepare themselves for opportunities in marketing field.
2. To study elaborately the process of salesmanship.
3. To know about Rural Marketing which is an important sector in modern competitive Indian Scenario.
4. To educate the students about the sources and relevance of Recent trends in Marketing.

<b>UNIT NO.</b>	<b>UNIT TITLE</b>	<b>CONTENTS</b>	<b>PURPOSE SKILLS TO BE DEVELOPED</b>
<b>1</b>	<b>Salesmanship</b>	<b>1.1</b> Meaning and Definition of Salesmanship <b>1.2</b> Features of Salesmanship <b>1.3</b> Scope of Salesmanship <b>1.4</b> Modern Concept of Salesmanship <b>1.5</b> Utility of Salesmanship <b>1.6</b> Elements of Salesmanship <b>1.7</b> Salesmanship : Arts or Science	Students will get the knowledge of Salesmanship and various approaches.

		<p><b>1.8</b> Salesmanship – a Profession</p> <p><b>1.9</b> Qualities of Salesman</p>	
<b>2</b>	<b>Process of Selling</b>	<p><b>2.1</b> Psychology of Salesmanship – Attracting Attention, Awakening Interest, Creating Desire and Action</p> <p><b>2.2</b> Stages in Process of Selling –</p> <ul style="list-style-type: none"> <li>(i) Pre-Sale Preparations</li> <li>(ii) Prospecting</li> <li>(iii) Pre-Approach</li> <li>(iv) Approach</li> <li>(v) Sales Presentation</li> <li>(vi) Handling of Objections</li> <li>(vii) Close</li> <li>(viii) After Sales Follow-up</li> </ul>	Techniques of salesmanship skills will be developed.
<b>3</b>	<b>Rural Marketing</b>	<p><b>3.1</b> Rural Marketing</p> <ul style="list-style-type: none"> <li>3.1.1 Introduction</li> <li>3.1.2 Definition of Rural Marketing</li> <li>3.1.3 Features of Rural Marketing</li> <li>3.1.4 Importance of Rural Marketing</li> <li>3.1.5 Present Scenario of Rural Market</li> <li>3.1.6 Challenges and Opportunities in Rural Marketing</li> </ul>	Awareness and importance of Rural Marketing amongst students.
<b>4</b>	<b>Recent Trends in Marketing</b>	<p><b>4.1</b> Digital Marketing</p> <p><b>4.2</b> Green Marketing</p> <p><b>4.3</b> Niche Marketing</p> <p><b>4.4</b> E-marketing</p> <p><b>4.5</b> Social Media Marketing- Challenges and Opportunities</p>	Skills of Modern Marketing will be developed.

## Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative Methods to be used</b>	<b>Film shows and AV Applications</b>	<b>Project</b>	<b>Expected Outcome</b>
<b>1</b>	<b>14</b>	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Short Film AV Application		Students will get knowledge of the basics of salesmanship which is a vital aspect of marketing.
<b>2</b>	<b>14</b>	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Short Film AV Application		It will help the students to implement this knowledge in practicality by enhancing their skills in the field of marketing by using various techniques of salesmanship.
<b>3</b>	<b>12</b>	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	AV Application		It will help the students to gain insights about Rural Marketing and its uniqueness.
<b>4</b>	<b>08</b>	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Short Film, AV Application Use of You Tube		It will help the students to gain the insights about recent trends in marketing field.

### Methods of Evaluation

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit - I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	Marketing Management Course
Unit - II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	Sales Marketing Management
Unit - III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	Rural Marketing Online Course
Unit - IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	Online Marketing Course

## References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Marketing Management	Philip Kotler	Pearson Publication	
2	Marketing Management	RajanSaxena	McGraw Hill Education	
3	Principles of Marketing	Philip Kotler& Gary Armstrong	Pearson Publication	
4	Sales & Distribution Management	Tapan K Panda	Oxford Publication	
5	Advertising Management	Rajiv Batra	Pearson Publication	
6	Retail Management	Swapna Pradhan	McGraw Hill Publication	
7	Retail Management	Gibson Vedamani	Jayco Publication	
8	Marketing Management	V. S. Ramaswamy & S. Namakumari	Macmillan Publication	
9	Supply Chain Management	Sunil Chopra, Peter Meindl& D. V. Karla	Pearson Publication	

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**Syllabus for B. Com. Semester –II**  
**Subject Name: - Business Ethics - II**  
**Course code:- 126 (D)**

**Depth of the program – Fundamental Knowledge**

**Objective of the Program**

1. To enhance students' general awareness of ethical dilemmas at work.
2. To understand differing perceptions of interests in business-related situations
3. To introduce the concept of Corporate Social Responsibility, corporate Governance and explore its relevance to ethical business activity
4. To examine whether ethics set any boundaries on Accounting, marketing, IT, Social Media and workplace.
5. To prepare students to play a constructive role in improving the sustainable development with which they may become involved.

<b>Unit No</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
1	<b>Business Ethics</b>	Business ethics–Meaning, definitions, scope , objectives, need and Principles. Human values and moral –meaning, formation and importance. Professional Ethics-meaning and significance, management and ethics Gandhian approach in Ethics. Global Trends in Ethics.	1. Equip the students with a skills to resolve the business problems with ethical norms. 2. Recognize the inherent conflict of interest in many business decisions.

2	<b>Corporate Social Responsibility</b>	<p>CSR – concept, scope, forms of CSR, dimensions of CSR, legal and ethical foundation for CSR, steps to attain CSR,</p> <p>International Approach to CSR</p> <p>CSR Activities in-</p> <ol style="list-style-type: none"> <li>a. Social welfare,</li> <li>b. Healthcare,</li> <li>c. Education and</li> <li>d. Infrastructure</li> </ol>	<p>Understanding the scope CSR and it's scope</p> <p>2. To know the global trends</p>
3.	<b>Corporate Governance and Business ethics</b>	<p>Corporate Governance- concept, objectives, features, core principles of good corporate governance, advantages, system of corporate governance and SEBI's guideline</p> <p>Whsle Blowing- Meaning causes and types.</p> <p>Current issues of Business ethics in-</p> <ol style="list-style-type: none"> <li>a. Accounting,</li> <li>b. Social Media,</li> <li>c. IT,</li> <li>d. Marketing and Advertisement</li> <li>e. Harassments and discrimination at workplace</li> </ol>	<p>Acquaint the students with corporate governance and global business ethics.</p>

4.	<b>Sustainable Development and Ethics</b>	<p>Sustainable Development- concept, need principles and importance, Goals of sustainable development and challenges to achieve SD.</p> <p>Achievements of Sustainable Development in India- clean water, clean energy, no poverty, zero hunger, Good Health, quality education, climates action and Industry innovations infrastructure.</p> <p>Ethics and sustainable development,</p>	<p>Identify various facts of sustainable development Apply the knowledge of sustainable development for people education</p>
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### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Article Review, Group Discussion, Quize	Documentary	-	Acquaint knowledge and maturity to understand the Business Ethics
2	12	Survey report. Poster presentation, Guest lecture	Short film	-	Application of CSR in various sector
3	12	Interview, Game, PPT, Narrating	Documentary	-	To analyze corporate governance in India
4	12	Project making, Street play, jingles m	Short Film	Project	To understand and achieve sustainable development



### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Evolution	Written Exam	Related Short Term Course/ Seminar/Workshop
Unit – II	Continuous Evolution	Written Exam	Related Short Term Course/ Seminar/Workshop
Unit – III	Continuous Evolution	Written Exam	Related Short Term Course/ Seminar/Workshop
Unit – IV	Continuous Evolution	Written Exam	Related Short Term Course/ Seminar/Workshop

## References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1.	<b>Ethics in Management</b>	<b>S.A. Sherlekar ,</b>	<b>Himalaya Publication</b>	<b>New Delhi</b>
2.	<b>Business Ethics and corporate Governance</b>	<b>S S Khanka</b>	<b>S. Chand Publication</b>	<b>Mumbai</b>
3.	<b>Business Ethics and Corporate Governance</b>	<b>S. K. Bhatia</b>	<b>Deep and Deep sons</b>	<b>New Delhi</b>
4.	<b>Corporate Governance : Principle, Policies and Practices</b>	<b>Bob Tricker</b>	<b>Oxford University Press</b>	<b>New Delhi</b>
5.	<b>Management by Values</b>	<b>S.K.Chakraborti ,</b>	<b>Oxford University Press</b>	<b>Mumbai</b>
6.	<b>Business Ethics And Corporate Governance</b>	<b>A. C. Fernando</b>	<b>Dorling Kindersly</b>	<b>Mumbai</b>
7.	<b>E Commerce - A Study in Business Ethics</b>	<b>Rituparna Raj</b>	<b>Himalaya Publication</b>	<b>New Delhi</b>
8.	<b>E-Commerce and It' Applications</b>	<b>Dr. U. S. Pandey, Rahul Srivastava and Saurabh Shukla.</b>	<b>S. Chand &amp; Company,</b>	<b>New Delhi</b>
9.	<b>The sustainable development goals</b>	<b>United Nations</b>	<b>United Nations Publication</b>	<b>UN</b>

10.	<b>Atlas of Sustainable Development Goals 2017: from World Development Indicators</b>	<b>World Bank</b>	<b>World Bank Publication</b>	-
11.	<b>Business Ethics And Corporate Governance</b>	<b>A. C. Fernando</b>	<b>Dorling Kindersly</b>	<b>Mumbai</b>
12.	<b>The age of sustainable development goals</b>	<b>Jeffery D Saches and Ki Moon Ban</b>	<b>Columbia University Press</b>	- -

**Suggested References -Web Reference**

<b>Sr. No</b>	
1	<a href="http://www.mca.gov.in/MinistryV2/csrdatasummary.html">http://www.mca.gov.in/MinistryV2/csrdatasummary.html</a>
2	<a href="http://Csr.gov.in">Csr.gov.in</a>
3	<a href="https://www.acclimited.com/sustainable/corporate-social-responsibility">https://www.acclimited.com/sustainable/corporate-social-responsibility</a>
4	<a href="https://www.youtube.com/watch?v=FN0kRR98518">https://www.youtube.com/watch?v=FN0kRR98518</a>
5	<a href="https://sustainabledevelopment.un.org/?menu=1300">https://sustainabledevelopment.un.org/?menu=1300</a>
6	<a href="https://www.toppr.com/guides/business-communication-and-ethics/business-ethics/meaning-and-ethical-principles-in-business/">https://www.toppr.com/guides/business-communication-and-ethics/business-ethics/meaning-and-ethical-principles-in-business/</a>

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## Syllabus for F.Y.B.Com

Semester-II, Paper-II

**Subject Name: - Business Environment & Entrepreneurship - II**

**Course Code:-126 (E)**

**Depth of Programme: - Fundamental Knowledge**

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Entrepreneurial Behaviour</b>	Nature- Comparison between entrepreneurial and non-entrepreneurial, Personality-Habits of Entrepreneurs – Dynamics of Motivation	Understanding the difference between entrepreneurial and non-entrepreneurial, personality, Habits of Entrepreneurs Skill-developing entrepreneurial personality and developing habits of entrepreneurs in students
2	<b>Entrepreneurship</b>	Concept- Need and Importance of Entrepreneurship - Economic Development and Industrialization - Role of Entrepreneurship in economy- Entrepreneur as a catalyst	Providing knowledge and significance of entrepreneurship Skill-Realising role of entrepreneurship in economy
3	<b>Institutions working for promoting entrepreneurship</b>	<ol style="list-style-type: none"><li>1) Entrepreneurship Development Institute of India (EDII)</li><li>2) Maharashtra Centre for Entrepreneurship Development (MCED)</li><li>3) District Industries Centre ( DIC)</li><li>4) Maharashtra Chamber of Commerce, Industries and Agriculture(MCCIA)</li><li>5) Role of local NGO in promoting Entrepreneurship</li></ol>	Gaining knowledge of various institutions promoting entrepreneurship Skill-Acquaintance with these institutions

<b>4</b>	<b>Study of entrepreneurs</b>	1) Hanumant Gaikwad ( BVG) 2) Kiran Mazumdar Shaw 3) Suwasini Kirloskar 4) Any successful Entrepreneur from your area	Getting inspiration from the entrepreneurs Skill-Developing entrepreneurial personality by getting inspiration from the entrepreneurs
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### Teaching Methodology- F.Y.B.Com Semester-II, Paper-II

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Project	Expected Outcome
<b>1</b>	12	Study of entrepreneurial and non-entrepreneurial personalities with the help of properly designed questionnaire	Related videos and PPT, Film 'Entrepreneurship' produced by Asian Centre for Research and Training (Pune)	A group of 3 to 5 students to interview entrepreneurial and non-entrepreneurial personalities and note the difference among them, also study habits of entrepreneurs, Shadow Training, Work experience, Entrepreneurship and Management Games	Understanding the difference between entrepreneurial and non-entrepreneurial personalities and thereby getting inspiration to make students personality entrepreneurial
<b>2</b>	12	Study of contribution of entrepreneurship in economic development (Study of selected advanced nations)	Film 'Entrepreneurship' produced by Asian Centre for Research and Training (Pune)	Form a group of 3 to 5 students to search role of entrepreneurship in economy, visit to exhibitions to get insight of entrepreneurship	Understanding the significance of entrepreneurship in economy thereby getting inspiration to become entrepreneur
<b>3</b>	12	Visit website of related institutions working for promoting entrepreneurship	Acquire CDs of related institutions working for promoting entrepreneurship	Visit to offices/regional offices of related institutions working for promoting entrepreneurship	Knowing the functions of related institutions
<b>4</b>	12	Study of Biographies of entrepreneurs and presenting in students group	Films on lives of Entrepreneurs	A group of students to interview entrepreneurs	Inspiration from study of Biographies to become entrepreneurs

## Method of Evaluation: F.Y.B.Com Semester-II, Paper-II

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Unit Test, Case Studies	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Study of Entrepreneurial and Non-entrepreneurial Behaviour
Unit-II	Seminar, Class participation Assignment, Library Work, Unit Test	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Entrepreneurship Development
Unit-III	Seminar, Class participation Assignment, Library Work, Unit Test	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Introduction to institutions working for promoting entrepreneurship
Unit-IV	Seminar, Class participation Assignment, Library Work, Unit Test, Field Work	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Inspiring Entrepreneurship

## References

Sr. No	Title of Book	Author/s	Publication	Place
1	Business Environment	Francis Cherunilam	Himalaya Publishing House	New Delhi
3	Dynamics of Entrepreneurship Development and Management	Desai Vasant	Himalaya Publishing House	New Delhi
4	Entrepreneurial Development	Khanka S.S.	S. Chand	New Delhi
5	Entrepreneurial Development	Gupta, Shrinivasan	S. Chand	New Delhi
6	Udyog	--	Udyog Sanchalaya	Mumbai
7	Indian Economy	Ruddar Datt, K.P.M. Sundharam	S. Chand	New Delhi

## Revised syllabi (2019 Pattern) for three years B.Com. Degree course (CBCS)

Semester : - II ( F.Y.B.Com)

Course Code - 126 (F)

Subject : - **Foundation Course in Commerce**

### 1. Preamble

It is essential for every student of commerce to have understating on the recent improvements and innovations in commerce. The Current commerce industry has seen a major shift from Physical to Digital , with significant emphasis on the service sector form the previous era of manufacturing , from Business to Entrepreneurship.

The students of Commerce need to develop an understanding on the importance of Management and Administration in the early years to develop the skills required for a successful future

### Objectives of the course

1. To introduce the students to the Concept of Entrepreneurship
  2. To improve the understanding of the students on E- Commerce
  3. To improve the knowledge of students on recent trends in Retail Sector
  4. To introduce the students to the concept of Management and Administration
- Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Entrepreneurship</b>	Entrepreneurship : Introduction , difference between Business and Entrepreneurship , Qualities of an Entrepreneur  Role of Entrepreneur in Social and Economical Development of the Country  Types of Entrepreneurs	<ol style="list-style-type: none"><li>1. Conceptual Understanding on Entrepreneurship ,</li><li>2. Motivate the students develop Entrepreneurship Skills</li><li>3. Develop Innovative entrepreneurial ideas</li></ol>

2	<b>E-Commerce</b>	<p>Introduction- Meaning, Features, Functions and Scope of E-Commerce-Importance and Limitations of E-Commerce.</p> <p>Types of E-Commerce: B2B, B2C, C2B, C2C,B2G, C2G, B2A, C2A and P2P, B2B service provider.</p>	<ol style="list-style-type: none"> <li>1. Understanding e- Commerce and its future prospectus</li> <li>2. Awareness on the various forms of e-commerce</li> </ol>
3	<b>Retailing</b>	<p>Introduction, Concept of Organized and Unorganized Retailing, Trends in Retailing, Innovations in Retailing in India , Growth of Organized Retailing in India, Measures adopted by Unorganized Retailers for Survival, FDI in Retail in India. Digital Retailing and Overview</p>	<ol style="list-style-type: none"> <li>1. Introduction to the Recent trend in Retailing</li> <li>2. To develop conceptual understating on Digital Retailing</li> </ol>
4	<b>Management and Administration</b>	<ol style="list-style-type: none"> <li>a) Management: Concept and Features</li> <li>b) Administration: Concept and Features</li> <li>c) Difference between and Management and Administration</li> <li>d) Scope of Management</li> </ol>	<ol style="list-style-type: none"> <li>1. Conceptual understating on Management and Administration</li> </ol>



## Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	PPT , Success Stories , Organizing Entrepreneurship Fairs al College Level , Guest Lectures by Successful Entrepreneurs	Interview videos and Documentaries and Motivation Videos of Eminent Entrepreneurs	Project on Innovative entrepreneurial Ideas	Developing Entrepreneurial Spirit among the students
2	12	Guest Lectures by subject Experts / Industry Expert , Internet Assignments , Case Study Discussion on Real Life success stories	Educational Videos, Videos on Real Life success stories	Case analysis and Discussions,	Conceptual Clarity and Awareness on Latest trends in e-commerce
3	12	PPT and Internet Research , Field visit to Organized and Unorganized Retail Sector.	Online Videos, Live demonstration on Online Retail e.g. Amazon, Big Basket etc.	Interview of Retailers and Managers in Organized and Unorganized Retail Sector / Project on a Retail Outlet in Organized and Unorganized	Understanding on the recent changes and innovations in the Retail Sector
4	12	PPT , Guest Lectures	Educational Videos	Project Report	Conceptual understanding on Management and Administration Understanding on Difference between Management and Administration

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	MCQ / PPT / Written Test	As per University norms	Entrepreneurship Development Workshop with Certification
Unit – II	Chart Presentation / MCQ/ Written Test	As per University norms	Certificate Course E- Commerce
Unit – III	Written Test / Open Book Examination	As per University norms	Diploma Course on Retail Management
Unit – IV	PPT/ MCQ/Written Test/ Field Visit and Report	As per University norms	Workshop on Leadership Development

### References :

#### List of Books Recommended :-

- Introduction To E – Commerce, Dhawan, Nidhi, International Book House
- E- Commerce - Rajaraman
- Business Organisation Management Maheshwari, Rajendra P ,Mahajan, J. P . International Book House
- Business Organization and Principles of Management by Dutta Chowdury, Central Education
- Retailing Management, Levy Michael., Weitz Barton A, Tata Mcgraw Hill
- Strategic Management, David, Fred R., Phi Leraning
- Government Policies on FDI in Retail.
- Retail Management - S.C. Bhatia Atlantic Publishers & Dist, 2008
- Retail Survival of the Fittest: 7 Ways to Future-Proof Your Retail Store by Francesca Nicasio
- Retail Management : Rajnish Tuli , Nidhi Varma Srivastava , Paperback
- Entrepreneurial Development by Khanka S.S , S.Chand
- Innovation and Entrepreneurship by Peter F. Drucker
- The Oxford Handbook of Entrepreneurship Edited by Anuradha Basu, Mark Casson, Nigel Wadeson, and Bernard Yeun

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# SAVITRIBAI PHULE PUNE UNIVERSITY

## Revised Syllabus of Master of Commerce (M.Com.) Semester Pattern with Credit System with effect from June 2019

The M. Com. Syllabus for regular students is being revised from the academic year 2019-20. The course structure is as below:-

### 1. Objectives :

- a. To equip and train Post Graduate students to accept the challenges of business world by providing opportunities for study and analysis of advanced commercial and business methods and processes.
- b. To develop independent logical thinking and facilitate personality development.
- c. To equip the students to seek suitable careers in management and entrepreneurship.
- d. To acquaint students with significance of research in business.
- e. To impart skills regarding methods of data collection and their interpretations.
- f. To develop communication and analytical skills among students.

### 2. Duration :

The M.Com. Course will be of Two Years duration consisting of two part. I.e. Part I and Part II. Each part is having Two Semesters.

Thus, the M.Com. Course is of Four Semesters. For each Semester, there will be Four Papers of 100 marks each. M.Com. Degree will be of 1600 marks in aggregate.

### 3. Duration and Structure of Programme:

The M.Com (Semester pattern with Credit System) degree Programme shall be of 2 years' duration divided into two parts, Part I and Part II, and 4 semesters.

### 4. Eligibility :

The student who has passed any Bachelors degree of this University or any other recognized University shall be held eligible to be admitted to M.Com. Course.

### 5. Course Structure:

The M.Com. degree course will be of two year duration consisting of four semesters and of minimum 64 credits as below:

Sr. No.	Semester	Total Credits
1	Semester I	16
2	Semester II	16
3	Semester III	16
4	Semester IV	16
	<b>Grand Total</b>	<b>64</b>

Four extra credits for project work at 4<sup>th</sup> Semester (This will include credits for fieldwork, data presentation and report writing)

In each Semester, there will be four papers of 100 marks each out of which **40 marks will be for Internal Assessment** (attendance, home assignments, class tests, long term papers, classroom presentation and **60 marks for University Examination**. Thus M.Com. degree examination, four Semesters shall be of 1600 marks.

**In addition to the above, students are required to secure following ten credits. These credits are compulsory in nature.**

Semester	Human Rights	Introduction to cyber security / information security	Skill development	Total Credits
I	1 credit	1 credit	--	2 credits
II	1 credit	1 credit	--	2 credits
III	--	1 credit	2 credits	3 credits
IV	--	1 credit	2 credits	3 credits
<b>Total Credits</b>	<b>2 credits</b>	<b>4 credits</b>	<b>4 credits</b>	<b>10 credits</b>

- Syllabus and other details regarding 'Human Rights' has been displayed on the home page of the university website.
- Syllabus and other details regarding '**Introduction to cyber security / information security**' has been displayed on the 'syllabi' page of the university website.

6. **The Scheme of Papers:** The following will be the Scheme of papers:

**The List of Courses**

**Semester I**

Semester	Subject Types	Course Code	Title of the Paper	Hrs/Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester I	Core Compulsory	101	Management Accounting	04	04	03	40	60	100	
		102	Strategic Management	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		<b>Group A (Advanced Accounting &amp; Taxation)</b>								
		103	Advanced Accounting	04	04	03	40	60	100	
		104	Income Tax	04	04	03	40	60	100	
		<b>Group B (Commercial Laws &amp; Practices)</b>								
		105	Information system and E-Commerce Practices	04	04	03	40	60	100	
		106	Intellectual Property Laws	04	04	03	40	60	100	
		<b>Group C (Advanced Cost Accounting &amp; Cost system)</b>								
		107	Advanced Cost Accounting	04	04	03	40	60	100	
		108	Costing Technique Examination s and Responsibility Accounting	04	04	03	40	60	100	
		<b>Group D (Co-operation &amp; Rural Development)</b>								
		109	Co-operative Movement in India	04	04	03	40	60	100	
		110	Rural Development	04	04	03	40	60	100	
		<b>Group E (Business Practices &amp; Environment)</b>								
		111	Organized Traders and Markets	04	04	03	40	60	100	
		112	Business Environment and Policy	04	04	03	40	60	100	
<b>Group F (Business Administration)</b>										
113	Production and Operation Management	04	04	03	40	60	100			
114	Financial Management	04	04	03	40	60	100			
<b>Group G (Advanced Banking &amp; Finance)</b>										
115	Legal Framework of Banking	04	04	03	40	60	100			
116	Central Banking	04	04	03	40	60	100			
<b>Group H (Advanced Marketing)</b>										
117	Marketing Techniques	04	04	03	40	60	100			
118	Consumer Behaviour	04	04	03	40	60	100			

## Semester II

Semester	Subject Types	Course Code	Title of the Paper	Hrs/Week	Credit	Exam. Hours	Maximum Marks			
							Internal	Univ.	Total	
Semester II	Core Compulsory	201	Financial Analysis and Control/ Principals of Financial Accounting	04	04	03	40	60	100	
		202	A. Industrial Economics B. Business Statistics	04	04	03	40	60	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		<b>Group A (Advanced Accounting &amp; Taxation)</b>								
		203	Specialized Areas in Accounting	04	04	03	40	60	100	
		204	Business Tax Assessment & Planning	04	04	03	40	60	100	
		<b>Group B (Commercial Laws &amp; Practices)</b>								
		205	E- Security & Cyber Laws	04	04	03	40	60	100	
		206	Laws Regulating to Copyrights & Design	04	04	03	40	60	100	
		<b>Group C (Advanced Cost Accounting &amp; Cost system)</b>								
		207	Application Cost Accounting	04	04	03	40	60	100	
		208	Cost Control & Cost System	04	04	03	40	60	100	
		<b>Group D (Co-operation &amp; Rural Development)</b>								
		209	International Co-operative Movement	04	04	03	40	60	100	
		210	Management of Co-operative Business	04	04	03	40	60	100	
		<b>Group E (Business Practices &amp; Environment)</b>								
		211	Modern Business Practices	04	04	03	40	60	100	
		212	Business Environment Analysis	04	04	03	40	60	100	
		<b>Group F (Business Administration)</b>								
		213	Business Ethics & Professional Value	04	04	03	40	60	100	
		214	Elements of Knowledge Management	04	04	03	40	60	100	
		<b>Group G (Advanced Banking &amp; Finance)</b>								
		215	Banking Law & Practices	04	04	03	40	60	100	
		216	Monetary Policy	04	04	03	40	60	100	
		<b>Group H (Advanced Marketing)</b>								
		217	Customer Relationship Management & Retailing	04	04	03	40	60	100	
		218	Services Marketing	04	04	03	40	60	100	

### Semester III

Semester	Subject Types	Course Code	Title of the Paper	Hrs/Week	Credit	Exam. Hours	Maximum Marks		
							Internal	Univ.	Total
	Core	301	Business Finance	04	04	03	40	60	100
Semester III	Compulsory	302	Research Methodology for Business	04	04	03	40	60	100
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>							
		<b>Group A (Advanced Accounting &amp; Taxation)</b>							
		303	Advanced Auditing	04	04	03	40	60	100
		304	Specialized Auditing	04	04	03	40	60	100
		<b>Group B (Commercial Laws &amp; Practices)</b>							
		305	Laws Relating to International Business	04	04	03	40	60	100
		306	WTO – Norms & Practices	04	04	03	40	60	100
		<b>Group C (Advanced Cost Accounting &amp; Cost system)</b>							
		307	Cost Audit	04	04	03	40	60	100
		308	Management Audit	04	04	03	40	60	100
		<b>Group D (Co-operation &amp; Rural Development)</b>							
		309	Co-operative Credit System	04	04	03	40	60	100
		310	Co-operative Banking System	04	04	03	40	60	100
		<b>Group E (Business Practices &amp; Environment)</b>							
		311	Entrepreneurial Behaviour	04	04	03	40	60	100
		312	Entrepreneurship	04	04	03	40	60	100
		<b>Group F (Business Administration)</b>							
		313	Human Resource Management	04	04	03	40	60	100
		314	Organizational Behaviour	04	04	03	40	60	100
		<b>Group G (Advanced Banking &amp; Finance)</b>							
		315	Foreign Exchange	04	04	03	40	60	100
		316	International Finance	04	04	03	40	60	100
		<b>Group H (Advanced Marketing)</b>							
		317	International Marketing	04	04	03	40	60	100
		318	Marketing Research	04	04	03	40	60	100

### Semester IV

Semester	Subject Type	Course Code	Title of the Paper	Hrs/Week	Credit	Exam. Hours	Maximum Marks			
Semester IV	Core Compulsory	401	Capital Market and Financial Services	04	04	03	40	60	100	
		402	Industrial Economic Environment (OR) Operations Research	04	04	03	40	60	100	
	<i>To choose any one Group of the following</i>									
	<b>Group A (Advanced Accounting &amp; Taxation)</b>									
		403	Recent Advances in Accounting, Taxation, Taxation and Auditing	04	04	03	40	60	100	
		404	Project Work/ Case Studies	04	04	03	40	60	100	
	<b>Group B (Commercial Laws &amp; Practices)</b>									
		405	Recent Advances in Commercial Laws and Practices	04	04	03	40	60	100	
		406	Project Work/Case Studies	04	04	03	40	60	100	
	<b>Group C (Advanced Cost Accounting &amp; Cost system)</b>									
		407	Recent Advances in Cost Auditing and Cost System	04	04	03	40	60	100	
		408	Project Work/Case Studies	04	04	03	40	60	100	
	<b>Group D (Co-operation &amp; Rural Development)</b>									
		409	Recent Advances in Co-operative and Rural Development	04	04	03	40	60	100	
		410	Project Work/Case Studies	04	04	03	40	60	100	
	<b>Group E (Business Practices &amp; Environment)</b>									
		411	Recent Advances in Business Practices and Environment	04	04	03	40	60	100	
		412	Project Work/Case Studies	04	04	03	40	60	100	
	<b>Group F (Business Administration)</b>									
		413	Recent Advances in Business Administration	04	04	03	40	60	100	
	414	Project Work/Case Studies	04	04	03	40	60	100		
<b>Group G (Advanced Banking &amp; Finance)</b>										
	415	Recent Advances in Banking and Finance	04	04	03	40	60	100		
	416	Project Work/Case Studies	04	04	03	40	60	100		
<b>Group H (Advanced Marketing)</b>										
	417	Recent Advances in Marketing	04	04	03	40	60	100		
	418	Project Work/Case Studies	04	04	03	40	60	100		



## 7. Scheme of Examination:

The examination of regular students of M.Com. degree course of the University of Pune admitted in the academic session 2019-20 and after shall be based on:

- (a) Semester Examination
- (b) Continuous Assessment
- (c) Choice Based Credit System, and
- (d) Semester Grade Point Average and Cumulative Grade Point Average System

**For each paper of 100 marks, there will be an Internal Assessment (1A) of 40 marks and the University Examination (UE) of 60 marks/ 3 hours duration at the end of each semester.** A candidate who will secure at least 40% marks allotted to each paper will be given 4 credits. A candidate who does not pass the examination in any subject or subjects in one semester will be permitted to appear in such failed subject or subjects along with the papers of following semesters.

**The Internal Assessment for each paper will be 40 marks**, which will be carried out by the department during the term. The Internal Assessment may be in the forms of written test, seminars, term papers, presentations, assignments, orals or any such others. The distribution of internal assessment marks shall be as follows:

Midterm Test	20
Presentation/Role Play	10
Case studies/ Group Discussion	10

There shall be four semester examinations: first semester examination at the middle of the first academic year and the second semester examination at the end of the first academic year. Similarly, the third and fourth semester examinations shall be held at the middle and the end of the second academic year, respectively.

The candidates shall be permitted to proceed from the first semester up to final semester irrespective of their failure in any of the semester examinations subject to the condition that the candidates should register for all the arrear subjects of earlier semesters along with current (Subsequent) semester subjects.

## 8. Research project work:

There will be a Research Project to be prepared by a student during the fourth semester. The objective of the project work is to introduce students to research methodology in the subject and prepare them for pursuing research in theoretical or experimental or computational areas of the subject. The project work is to be undertaken under guidance of a teacher allotted to a student by the department.

<b>Division of marks</b>	<b>Marks</b>
Synopsis with working bibliography (Internal Assessment)	40 marks
A full project Report (Minimum 50-80 pages)	40 marks
Viva Voce	20 marks

Total	100 marks
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As the Research Project is based on the self-study done by the candidate and evaluated for 100 marks altogether, having four credits. The project may be evaluated by two examiners one internal and one external, selected from the panel of PG examiners of the University. The Viva voce must be conducted by the teachers selected out of the panel of PG examiners maintained by the University.

The candidates have to submit the project 15 days before the commencement of the fourth semester university examination. The project report shall be type-written and submitted in duplicate. A candidate who fails to submit the project may resubmit the same in the subsequent semester examination for evaluation. The project work activities must be duly supported by documentary evidence to be endorsed by the Head or Guide.

### 9. Standard of passing:

A candidate shall be declared to have passed in the paper provided he/she has secured minimum GP of 4.5 in the UNIVERSITY EXAMINATION and GRADE POINT AVERAGE of 4.0 in aggregate of UNIVERSITY GRADE and INTERNAL ASSESSMENT taken together.

### 10. Classification of successful candidates:

Candidates who secured not less than 60% of aggregate marks (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION ) in the whole examination shall be declared to have passed the examination in the first class. All other successful candidates shall be declared to have passed in second class. Candidates who obtain 70% of the marks in the aggregate (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION) shall be deemed to have passed the examination in first class with distinction.

A student who passes in all the courses will be declared to have passed the M.Com. degree with the following honors.

CGPA in (4.00, 4.99)	- Pass Class
CGPA in (5.00, 5.49)	- Second Class
CGPA in (5.50, 5.99)	- Higher Second Class
CGPA in (6.00, 7.99)	- First Class
CGPA in (8.00, 10,00)	- First Class with Distinction

### 11. Scheme of Credits:

**Sixty (60) hours of teaching will lead to four credits** (which mean four hours per week teaching in one semester) and long term paper as well as presentation will carry one credit. Each semester shall offer 16 credits or more.

### 12. Grade Points Scheme:

The term grading system indicates a 10 – points scale of evaluation of the performance of students in terms of marks obtained in the Internal and External Examination, grade points and letter grade. The total performance within a semester and continuous performance starting from the first semester are indicated respectively by Grade Point

Average (GPA) and Cumulative Grade Point Average (CGPA). Candidates who pass all the examinations prescribed for the course in the first appearance itself alone are eligible for Ranking.

The 10-point scale would be used to convert marks out of 100 to grades and grade points according to the following table:

Marks as Percentage	Grade	Grade Point
[75.0, 100]	O	10.0
[70.0, 74.9]	A+	9.0
[65.0, 69.9]	A	8.0
[60.0, 64.9]	B+	7.0
[55.0, 59.9]	B	6.0
[50.0, 54.9]	C+	5.5
[45.0, 49.9]	C	5.0
[40.0, 44.9]	D	4.5
[00.0, 39.9]	F	0.0

### 13. Structure of Transcript:

At the end of each semester, student will be given a transcript showing the performance and result in each course. The transcript shows, for each course the title of the course, credit values, grade in UNIVERSITY EXAMINATION , grade in INTERNAL ASSESSMENT , grade point index, result as pass or fail. Also, the semester grade point average (SGPA) and cumulative grade point average (CPGA) will be shown. Further the equivalent percentage of marks corresponding to SGPG or CGPA to equivalent percentage is given by:

$$\text{Equivalent percentage marks} = \begin{cases} 10 \times \text{CGPA} & \text{if CGPA /SGPA is in [4.00, 6.00]} \\ 05 \times \text{CGPA} + 30 & \text{if CGPA /SGPA is in [6.00, 9.00]} \\ 25 \times \text{CGPA} - 150 & \text{if CGPA /SGPA is in [9.00, 10.00]} \end{cases}$$

The above formula computes to the following table:

Range in % of Marks	Range of CGRADE POINT AVERAGE	Letter Grade	Division
[75.0, 100]	[9.00, 10.00]	O	First Class with Distinction
[70.0, 74.9]	[8.00, 8.99]	A+	
[65.0, 67.9]	[7.00, 7.99]	A	First Class
[60.0, 64.9]	[6.00,6.99]	B+	
[55.0, 59.9]	[5.50, 5.99]	B	Higher Second Class
[50.0, 54.9]	[5.00,5.49]	C+	Second Class
[45.0, 49.9]	[4.50, 4.99]	C	Pass Class
[40.0, 44.9]	[4.00, 4.49]	D	
[00.0, 39.9]	[0.00, 3.99]	F	Fail

Thus the percentage of Marks can be obtained by using the following table:

<b>CGRADE POINT AVERAGE</b>	<b>% of Marks</b>	<b>CGRADE POINT AVERAGE</b>	<b>% of Marks</b>	<b>CGRADE POINT AVERAGE</b>	<b>% of Marks</b>	<b>CGRADE POINT AVERAGE</b>	<b>% of Marks</b>
<b>4.0</b>	40.0	<b>5.5</b>	55.0	<b>7.0</b>	65.0	<b>8.5</b>	72.5
<b>4.1</b>	41.0	<b>5.6</b>	56.0	<b>7.1</b>	65.0	<b>8.6</b>	73.0
<b>4.2</b>	42.0	<b>5.7</b>	57.0	<b>7.2</b>	66.0	<b>8.7</b>	73.5
<b>4.3</b>	43.0	<b>5.8</b>	58.0	<b>7.3</b>	66.0	<b>8.8</b>	74.0
<b>4.4</b>	44.0	<b>5.9</b>	59.0	<b>7.4</b>	67.0	<b>8.9</b>	74.5
<b>4.5</b>	45.0	<b>6.0</b>	60.0	<b>7.5</b>	67.0	<b>9.0</b>	75.0
<b>4.6</b>	46.0	<b>6.1</b>	60.0	<b>7.6</b>	68.0	<b>9.1</b>	77.5
<b>4.7</b>	47.0	<b>6.2</b>	61.0	<b>7.7</b>	68.0	<b>9.2</b>	80.0
<b>4.8</b>	48.0	<b>6.3</b>	61.0	<b>7.8</b>	69.0	<b>9.3</b>	82.5
<b>4.9</b>	49.0	<b>6.4</b>	62.0	<b>7.9</b>	69.5	<b>9.4</b>	85.5
<b>5.0</b>	50.0	<b>6.5</b>	62.0	<b>8.0</b>	70.0	<b>9.5</b>	87.5
<b>5.1</b>	51.0	<b>6.6</b>	63.0	<b>8.1</b>	70.0	<b>9.6</b>	90.0
<b>5.2</b>	52.0	<b>6.7</b>	63.0	<b>8.2</b>	71.5	<b>9.7</b>	92.5
<b>5.3</b>	53.0	<b>6.8</b>	64.0	<b>8.3</b>	71.0	<b>9.8</b>	95.0
<b>5.4</b>	54.0	<b>6.9</b>	64.0	<b>8.4</b>	72.0	<b>9.9</b>	97.5
						<b>10.0</b>	100.0

#### 14. Distribution of Periods:

There shall be 60 periods for each subject to cover the entire teaching of 4 credits. This will be distributed as follows:

<b>Particulars</b>	<b>Periods</b>
Teaching session per programme	48
Assignment/ Test	04
Role play/ Group Discussion	04
Case studies and presentation	04
<b>Total</b>	<b>60</b>

#### 15. Standard of Passing.

Regular students: - A candidate is required to obtain 40% marks in each of course in both Mid Semesters and Semester end. It means passing separately at Mid-Semester and semester Examinations is compulsory.

#### 16. Award of Class.

- The class in respect of M.Com. Examination will be awarded on the basis of aggregate marks obtained by the candidates in all the sixteen papers at the Semester I, II, III, and IV together.

The Award of class shall be as under:-

<b>Marks Obtained</b>	<b>Class</b>
70% and above	First Class with Distinction.
60% and above but less than 70%	First Class.
55% and above but less than 60%	Higher Second Class.

50% and above but less than 55%	Second Class.
40% and above but less than 50%	Pass Class.
Less than 40%	Fail.

- b. Improvement: - A candidate having passed M.Com. Examination will be allowed to improve the performance. The same is termed as 'Class Improvement Scheme' under which improvement of performance shall be allowed only at the Semester end Examination.
- c. A candidate after passing M.Com. Examination will be allowed to appear in the additional Special Subject after keeping necessary terms in the concerned special subject only, for which a passing certificate will be issued.

### 17. Medium of Instruction :

The use of Marathi is allowed for writing answers in the examination except for following courses:

- a. Management Accounting
- b. Financial Analysis & Control
- c. Business Statistics,
- d. Advanced Accounting and Taxation
- e. Advanced Cost Accounting and Cost Systems.

### 18. Qualification of the Teachers :

The Teachers recognized to teach the subjects as per Old Course shall be deemed to be recognized in the corresponding equivalent subjects under Revised Course.

In case of: A) Business Statistics, B) Industrial Economics, C) Co-operation and Rural Development, D) Advanced Banking and Finance and E) Research Methodology and Project Work- Paper-IV of each Special Subject, the following qualifications be made applicable.

- A. Business Statistics :** M.Com, M.Phil with Statistics or Research Methodology as one of the Papers at M.Com /B.Com /M. Phil examination with 5 years degree teaching experience or M.A./M.Sc. With Statistics having 5 years degree teaching experience.
- B. Industrial Economics:** M.Com., M. Phil with Business Economics/Economics of Industries or Economics as one of the papers at B. Com/ M.Com Examination with 5 years degree teaching experience or M.A. Economics with 5 years degree teaching experience.
- C. Co-operation and Rural Development:** M. Com, M. Phil. With 5 years degree teaching experience or M.A. Economics (with Co-operation Rural Economics)
- D. Advanced Banking and Finance:** M. Com., M. Phil., with Banking as one of the papers at B.Com/M.Com examination 5 years degree teaching experience.
- E. Research Methodology and Project Work:** M.Com. M.A (Eco.) M.Phil./Ph.D. with 5 years degree teaching experience.
- F.** Similarly all the changes in qualification as per U.G.C norms and guidelines shall also be applicable as and when the changes come into force (If applicable)

**Revised syllabi (2019 Pattern) for two years M. Com. Course (CBCS)**

**Semester: I**

**Subject: Management Accounting**

**Course Code: 101**

**Depth of the programme:** Basic Knowledge with recent advancement and its applicability

**Objectives of the Programme:**

1. To enhance the abilities of learners to develop the concept of management accounting and its significance in the business.
2. To enhance the abilities of learners to analyze the financial statements.
3. To enable the learners to understand, develop and apply the techniques of management accounting in the financial decision making in the business corporates.
4. To make the students develop competence with their usage in managerial decision making and control.

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Accounting for Emerging Sectors</b>	<ol style="list-style-type: none"><li>1. Limitations of conventional Financial Accounting</li><li>2. Emergence of Management Accounting and Cost Accounting</li><li>3. Advantages of Management Accounting and Cost Accounting</li><li>4. Distinction between Management Accounting and Cost Accounting</li><li>5. Management Accounting as a decision making tool</li></ol>	To understand the concept of Financial Accounting and its limitations, emergence of Management Accounting and Cost Accounting, its advantages and distinction between Management Accounting and Cost Accounting.
<b>2</b>	<b>Application of Management Accounting Techniques</b>	<ol style="list-style-type: none"><li>1. Marginal Costing and Cost-Volume Profit (CVP) Analysis, Key Factors</li><li>2. Decision Making through Managerial Cost Accounting (Make or Buy Decision) Purchasing and Leasing</li><li>3. Techniques and Managerial Cost Accounting</li><li>4. Standardization of Accounting System<ol style="list-style-type: none"><li>a. Fixed and Variable Cost Analysis</li><li>b. Application of Fixed and Variable Cost Analysis technique in decision making process</li></ol></li></ol>	To understand the concept of Marginal Costing, its applications, different techniques of managerial cost accounting and Fixed and Variable Cost Analysis in decision making process.

<b>3.</b>	<b>Budgets as a tool for Decision Making</b>	<ol style="list-style-type: none"> <li>1. Budget Manual</li> <li>2. Budget Committee and Budgetary Control</li> <li>3. Preparation of Budget</li> <li>4. Master Budget</li> <li>5. Purchase and Sales Budgets</li> <li>6. Fixed and Flexible Budget</li> <li>7. Cash Budget</li> </ol>	To understand the concept of budget and budgetary control, types of budgets and preparation of functional budgets in an organization.
<b>4.</b>	<b>Working Capital Management</b>	<ol style="list-style-type: none"> <li>1. Concept and definition of working capital,</li> <li>2. Determination of Working capital, Assessment of Working</li> <li>3. Capital needs - Study of components of working capital such as cash management</li> <li>4. Accounts receivable management and inventory management.</li> </ol>	To understand the concept of Working Capital Management, determination of working capital, components of working capital and accounts receivable and inventory management.

### References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1.	Management Accounting	P.C. Tulsian	Tata McGraw Hill Publishing Company	New Delhi
2.	Management Accounting	A.Mukharji & M. Hanif	Tata McGraw Hill Publishing Company	New Delhi
3.	Management Accounting	S. N. Maheshwari & S.K. Maheshawari	Vikas Publishing House Pvt. Ltd.	New Delhi
4.	Advanced Accounting	M. C. Shukla & S.P. Gerwal	S. Chand and Co. Ltd.	New Delhi
5.	Advanced Accountancy	S.P. Jain & K.N. Narang	Kalyani Publishers	New Delhi

6.	Advanced Accountancy	R.L. Gupta & M. Radhaswamy	S. Chand and Co. Ltd.	New Delhi
7.	Advanced Accounting	Dr. Sadashiv Sirgave	Success Publications	Pune
8.	Principles of Management Accounting	S. N. Maheshwari	Vikas Publishing House Pvt. Ltd.	New Delhi
9.	Management Accounting	I.M. Pandey	Vikas Publishing House Pvt. Ltd.	New Delhi
10.	Advanced Management Accounting	Ravi Kishore	Taxman	New Delhi
11.	Management Accounting	Dr. Arun Gaikwad	Success Publications	Pune
12.	Management Accounting	Dr. Yashodhan Mithare	Success Publications	Pune

### Suggested references

#### Web reference

Sr. No	Lectures	PPTs	Articles
1	Introduction to Cost & Management Accounting: CA Raj K. Agarwal (On youtube)	Management Accounting: An Introduction to concept and Methods: Igor Baranov	How do managers react to a Peer's situation? The influence of environmental similarity on budgetary reporting: James N. Cannon ( <a href="https://www.sciencedirect.com/science/article/pii/S1044500518300659">https://www.sciencedirect.com/science/article/pii/S1044500518300659</a> )
2	Decision Making	Management	The role of cognitive frames in combined decisions about risk and effort: Karla Oblak, Mina Licen and others ( <a href="https://www.sciencedirect.com/science/article/pii/S1044500517300239">https://www.sciencedirect.com/science/article/pii/S1044500517300239</a> )



	in Cost and Management Accounting: CA Naresh Agarwal (On youtube)	Accounting: James T. Mocky and Others	
3	Budget and Budgetary Control: CA Naresh Agarwal (On youtube)	Managerial Accounting: Maher, Stickney and Weil	Identity conflict and the paradox of embedded agency in the management accounting profession: Adding a new piece to the theoretical jigsaw: Kate E. Horton ( <a href="https://www.sciencedirect.com/science/article/pii/S1044500516300245">https://www.sciencedirect.com/science/article/pii/S1044500516300245</a> )
4	Working Capital Management: Shivansh Sharama (On youtube)	Study Material PPT: ICAI,	Regulation and adaptation of management accounting innovations: The case of economic value added in Thai state-owned enterprises: Pimsiri Chiwamit and others ( <a href="https://www.sciencedirect.com/science/article/pii/S1044500517300100">https://www.sciencedirect.com/science/article/pii/S1044500517300100</a> )

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**Revised syllabi (2019 Pattern) for two years M.Com. Degree course (CBCS)**

**Semester : - I (M.Com Part – I)**

**Subject : - Strategic Management**

**Course Code - 102**

**Objectives of the course**

- To introduce the students to the emerging changes in the modern business environment
- To develop the analytical , technical and managerial skills of students in the various areas of Business Administration
- To empower to students with necessary skill to become effective future managers and leaders
- To develop Technical skills among the students for designing and developing effective Functional strategies for growth and sustainability of business

**Depth of the program – Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Introduction to Strategic Management</b>	Strategy - Concept and its evolution Strategic Management Characteristics , dimensions and Approaches to strategic Decision Making Strategic Management Process Components of Strategic Management Model – Policies , Role of Top Management Strategic implications of Social and Ethical Issues	Understanding of the concept of Strategic management To understand the process of Strategic Management
<b>2</b>	<b>Strategy Formulation , Strategic Analysis and</b>	Organizational Goals, Mission and Social Responsibility	Understanding the External and Internal Business Environment for effective Strategy

	<b>Strategic Planning</b>	<p>Analysis of Business Environment</p> <p>Internal analysis for Strategic Advantage – Strategic Planning – meaning, steps, alternatives, advantages and Disadvantages.</p> <p>Designing an effective Strategic Plan</p>	<p>formulation</p> <p>Development of Strategic analytical skills</p> <p>Skills to design an effective Strategic Plan</p>
3	<b>Strategic Choices and Strategy Implementation</b>	<p>Generating Strategic Alternatives for Stability, Growth and Sustainable Strategies</p> <p>Evaluation of Strategic Alternatives for developing Product portfolio Models and selection of Suitable Corporate Strategy</p> <p>Implementation issues</p> <p>Planning and allocation of resources</p> <p>Organizational Structures – factors affecting the choice , Degree of Flexibility and Autonomy</p>	<p>Development of Applicability skills for effective plan implementation</p> <p>Developing Technical skills for evaluation of alternatives and analytical skills for choice among alternatives</p>
4	<b>Functional Strategy and Strategic Review</b>	<p>Knowledge and Formulation of Functional Strategy for</p> <p>Marketing</p> <p>Environment Sustainability</p> <p>CSR ( Corporate Social Responsibility)</p> <p>Human Resource</p> <p>Finance</p> <p>Logistics</p> <p>Evaluation of Strategic Performance – Criteria and Problems</p> <p>Concept of Corporate Restructuring ,Business Process Reengineering , Benchmarking , TQM and Six Sigma</p> <p>Chankyaniti - A Case study approach</p>	<p>Development of Technical and Analytical abilities for formulation of sound functional Strategy in various areas of business</p> <p>Development of Analytical and Managerial Abilities for critical evaluation</p>

## Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Power Point Presentation	PPT Online Videos	Report writing	Conceptual Clarity on Strategic management
2	12	PPT and Case Study	Case Study of any Organization	Report writing	Development effective Strategy formulation and analytical ability and Skills to design Strategic Plan
3	12	Guest Lectures by Experts from corporate	--	--	Development of Applicability skills and Technical skills
4	12	PPT , Educational Videos	Online Videos	--	Development of Technical and Analytical abilities

### References :

#### List of Books Recommended :-

1. Strategic Management : the Indian Context – By R.Srivivasan
2. Strategic Management – By Dinesh Madan
3. Concepts in Strategic Management and Business Policy – By Thomas L. Wheelen, J. David Hunger, Alan Hoffman, Charles E. Bamford
4. Strategic Management – By Fred R. David , Forest R. David
5. Strategic Management – By Dr.C.B.Gupta
6. Introduction to Strategic Management – Dr. Arun Ingale, Success Publications.

**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**  
**Syllabus for M. Com. Semester –I**  
**Grope – A (Advanced Accounting and Taxation)**  
**Subject Name :- Advanced Accounting & Taxation Special Paper I**  
**Subject Title - Advanced Accounting**  
**Course Code :- 103**

Depth of the program – Advanced Knowledge

**Objectives of the course**

1. To lay a theoretical foundation of Accounting & Accounting Standards.
2. To gain ability to solve problems relating to Corporate Accounting.

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>	<b>Total Lectures</b>
1	<b>Basic Concepts:</b>	Conceptual framework of Accounting - Accounting environment - Concept of accounting theory - Role of accounting theory - Classification of accounting theory - Approaches to accounting theory - Accounting Standards - Generally Accepted Accounting Principles - Selection of Accounting Principles - Professional Development of Accounting in India. Introduction to IFRS & IND-AS.	Getting familiar with the Advanced Concepts	10
2	<b>Consolidated Financial Statements:</b>	Consolidated Accounts of Holding and two Consolidated Profit & Loss Accounts - subsidiary Companies Consolidation - Inter Company transactions - Issue of Bonus Shares - Revaluation of Fixed Assets - Debentures and Preference Shares of subsidiary Company- Dividend - (Holding company with two subsidiaries Only to be studied). AS.21.	Understanding the Consolidation of Financial Statements of Holding Companies & two Subsidiary Companies	18

3.	<b>Liquidation of Company:</b>	Preparation of Statement of affairs including deficiency /surplus account.	To Prepare Statement of Affairs of the Companies in Liquidation	10
4.	<b>Valuation of Shares And Goodwill:</b>	<p><b>A. Valuation of Shares</b> - Need for valuation - Methods of valuation of shares- Net Asserts method, Dividend yield method, Earning yield method, Return on Capital method, Price/Earning method and Fair value method &amp; DCF Method (Discounted Cash Flow Method).</p> <p><b>B. Valuation of Goodwill</b> - Need for valuation - Methods of valuing Goodwill - Number of Years purchase of average profits method, Capitalization method - Annuity method - Super profits method.</p>	In the today's competitive Corporate World to understand the needs and methods of valuation of Goodwill & Shares	10
		<b>Total Lectures</b>		<b>48</b>

### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Advanced Accounts	Shukla and Grewal	S. Chand & Co Ltd. New Delhi	Delhi
2.	Advanced Accounts	Jain and Narang	Kalyani Publishers, Ludhiana	Ludhiana
3.	Accountancy, Volume-I and II	Sr. K. Paul	New Central Book Agency, Kolkata	Kolkata
4.	Accounting Theory	Dr. L. S. Porwal	Tata McGraw Hill	
5.	Accounting Text & Cases	Robert Anthony, D.F.Hawkins & K.A. Merchant	Tata McGraw Hill	

<b>6.</b>	Corporate Accounting	Dr.S.N. Maheshwari:	Viakas Publishing House Pvt. Ltd. New Delhi	New Delhi
<b>7.</b>	Advanced Accounting	Dr. Sadashiv Shirgave	Success Publications	Pune

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**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**  
**Syllabus for M. Com. (Semester – I)**  
**Grope – A (Advanced Accounting and Taxation)**  
**Subject Name: - Advanced Accounting & Taxation Special Paper II**  
**Subject Title - Income Tax**  
**Course Code: - 104**

**Objective of the Program**

- i. To gain knowledge of the provisions of Income - tax including Rules pertaining there to, relating to the following topics.
- ii. To develop ability to calculate taxable Income of 'Individual', 'Hindu Undivided Family' and 'Company' assesses.

**Depth of the program – Advanced Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
1	<b>Concepts and Definition</b>	History of Income Tax in India - Introduction, Features, Difference between direct and Indirect Taxes - Fundamental Concepts and definitions under Income Tax Act, 1961 - Rates of taxes - Basis of charge - Residential status and scope of total income -Income Exempt from tax - Capital & Revenue  ( Theory )	To provide the basic knowledge of Income Tax Act. 1961
2	<b>Heads of Income</b>	<b>a) Income From Salary :</b> Chargeability -Allowances and Taxability - Perquisites - Valuation of perquisites - Provident Funds -	To understand the concepts of Heads of Income and to compute the income under each head.



		<p>Deduction from salaries</p> <p><b>b) Income from House Property:</b> Annual Value-Self occupied property and let out property -deemed to be let out property - Permissible deductions.</p> <p><b>c) Income From Business Or Profession :</b> Meaning of Business, Profession and Vocation-deductions expressly allowed Depreciation -Specific disallowances - Method of accounting - Maintenance of Books of Account - Audit of Accounts</p> <p><b>d)Capital Gains:</b> Meaning, Types and Exemptions</p> <p><b>e) Income from Other Sources:</b> Chargeability - Deductions - Amounts not deductible.</p> <p><b>(Theory &amp; Advanced Problems)</b></p>	
3.	<b>Deductions Under Chapter VIA</b>	<p>Permissible deductions U/s.80 of the Income Tax Act.</p> <p>Rebate U/s. 87A</p> <p>Relief U/s. 89</p> <p><b>( Theory )</b></p>	To understand the concept of deductions and provisions of Sec. 80C to 80U

4.	<b>Computation Of Gross Total Income And Assessment Af Companies</b>	Computation of Total Taxable income of an Individual and Hindu Undivided Family and Assessment of Companies.  ( <b>Advanced Problems</b> )	To Compute the taxable income of an Individual , Hindu Undivided Family and Companies.
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### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
<b>Unit – I</b>	Assignments, Tutorials, Group Discussions and Power Point Presentations	Orals, Project VIVA, Theory Examinations	Preparation and Submission of compulsory project by collecting data from minimum 10 assesses of an individual or HUF or minimum one company
<b>Unit – II</b>	Assignments, Tutorials, Group Discussions and Power Point Presentations	Orals, Project VIVA, Theory Examinations	
<b>Unit – III</b>	Assignments, Tutorials, Group Discussions and Power Point Presentations	Orals, Project VIVA, Theory Examinations	
<b>Unit – IV</b>	Assignments, Tutorials, Group Discussions and Power Point Presentations	Orals, Project VIVA, Theory Examinations	

## References

Sr. No.	Title of the Book	Author/s	Publication	Place
8.	Direct Taxes, Law and Practice,	Dr. Vinod Singhanian:	Taxman Publication,	New Delhi
9.	Direct Taxes	Dr. Bhagawati Prasad:		
10.	Direct Taxes,	Girish Ahuja and Ravi Gupta:	Bharat Law House,	New Delhi.
11.	Direct Taxes	Gaur V.P. & Narang D.B.	Kalyani Publications	New Delhi
12.	Income Tax ( Law & Practice )	Dr. H.C. Mehrotra & Dr. S.P.Goyal	Sahitya Bhavan Publication	Agra
13.	Income Tax ( Problems & Solutions )	Dr. H.C. Mehrotra & Dr. S.P.Goyal	Sahitya Bhavan Publication	Agra
14.	Income Tax Act.	Dr. Vinod Singhanian:	Taxman Publication,	New Delhi
15.	Income Tax Rules	Dr. Vinod Singhanian:	Taxman Publication,	New Delhi

### Notes:

1. Amendments made prior to commencement of Academic Year in the relevant act should be considered & studied.
2. The breakup of questions in the Examination will be as under:
  - a. Theory questions will carry 30% marks.
  - b. Problems will carry 70% marks.

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**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I (Special Paper I)**

**Group – B (Commercial Laws & Practices)**

**Subject Name - Commercial Laws & Practices Paper - I**

**Subject Title: - Information System and E-Commerce Practices**

**Course Code - 105**

**Objectives of the course**

- a. To equip and train the students to accept the challenges of emerging Business World with advanced information Systems and emerging E-Commerce by practices.
- b. To analyze the advanced Commercial and business methods and processes in E-Commerce transactions.
- b. To develop independent logical thinking and facilitate personality development with the help of new information systems.
- c. To equip the students for seeking suitable emerging careers in management, entrepreneurship and E-Commerce activities.
- d. To study methods of Data collection and their interpretations.
- e. To develop among students Communication, Study and Analytical and interpretation skills.

**Depth of the Programme:** – Basic Knowledge with recent advancements and its applicability

**Objective of the Programme:**

1. To equip and train the students to accept the challenges of Business World by providing opportunities for study and analysis of advanced Commercial and business methods and processes.
2. To develop independent logical thinking and facilitate personality development of the business persons.
3. To equip the students for seeking suitable careers in management and entrepreneurship and E-Commerce transactions..
4. To study methods of Data collection and their interpretations in the field of E-Commerce practices.
5. To develop among students Communication, Study and Analytical skills with critical thinking.

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Introduction to Information Systems</b>	System Concepts, Information Systems Architecture, Definition of a system, Basic Components of a system, Elements and types of a systems, General Model of a system, The model of a Business system. Information systems supporting major business functions. Four major types of systems – Transaction Processing Systems, Management Information systems, Decision Support Systems and Executive Support systems	To understand the fundamentals/ Concept of Information systems and their components, hardware, software, communications networks, and data resources that collects data, transforms it, and disseminates information in a business environment.
2	<b>Introduction to E-Commerce</b>	Meaning and Definition of E-commerce, Benefits of E-Commerce to Businesses, Consumers and Society, Limitations of E-Commerce, Drivers of E-Commerce. Categories of e-Commerce- B2B, B2C, C2C, B2G and G2B. B2B applications, B2C applications and C2C applications.	To understand the concept in relation to business application like Document automation in supply chain and logistics, Enterprise content management, Conversational commerce: e-commerce via chat.
3.	<b>Inter organizational Information Systems and Internet</b>	Internet, Intranet and Extranet, Introduction, Role, benefits and structure of Inter organizational systems. Introduction to Electronic Data Interchange (EDI), Definition, benefits of EDI. EDI transactions and EDI Applications. Electronic Fund transfer. Introduction to Internet, Definition of Internet, Components of Internet, Services offered by Internet. Introduction to Intranet, Definition, advantages and disadvantages of intranet. Introduction to extranet and definition and applications of Extranet.	To understand the inter-organizational information system for managing inter-organizational activities of virtual organizations, extended enterprises, and trans-enterprise systems.

4.	<b>E-Commerce Supporting functions</b>	Purchase and sale Procedures, Supply Chain management, Value Chains in E-Commerce. Electronic Payment Systems, Authentication of payment, Mode of Payments E-Commerce Security. Security Requirements. Security Mechanisms-Encryption, Digital Signature, E-Certificate, Secure electronic transaction protocol. Problems in Taxing of E-Commerce	To equip the students with various E-Commerce functions, electronic payment systems and security mechanism to be followed while completing E-Transactions. Making students aware of significance of digital signatures and security mechanism.
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**\*All Acts are to be studied with recent amendments**

**Teaching methodology:**

Topic No.	Total Lectures	Expected Outcome
1.	12	To understand Transaction Processing Systems, Management Information systems, Decision Support Systems and Executive Support systems
2	12	To understand the concept of E-Commerce in relation to various business applications such as Document automation in supply chain and logistics, Enterprise content management, Conversational commerce etc.
3	12	To get knowledge of the inter-organizational information system for managing inter-organizational activities of virtual organizations, extended enterprises, and trans-enterprise systems.
4	12	To understand various e-Commerce functions along with electronic payment systems-Security measures and mechanism of Digital signature.

**Method of Evaluation**

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Evaluation (Written tests etc.)	Written Examinations	Certificate Course in E-Commerce

Unit – II	Continuous Evaluation [Class Presentations (PPT) etc.]	Written Examinations	Certificate Course in E-Banking
Unit – III	Continuous Evaluation (Seminar /Group discussions etc.)	Written Examinations	Diploma in Digital Marketing
Unit – IV	Continuous Evaluation (Viva-Voce etc.)	Written Examinations	Certificate Course in E-Security

## References

Sr. No.	Title of the Book	Author/s	Publication
1.	E-commerce	Devid Whiteley	McGraw Hill
2.	E-commerce	P.Joseph	PHI
3.	E-commerce – The cutting edge of business	K.Bajaj and Nog	TMH
4.	Text book on Intellectual property rights	N.K. Acharya	Asia Law House,
5.	Guide to Cyber Laws	Rohnay D. Ryder	Wadhwa, Nagpur
6.	Cyber Laws	Justice Yatindra Singh	Universal Law Publishing Co.

**Suggested references Web reference**

Sr. no	PPTs	Others
1	<p>PPT – Presentation On Electronic Security PowerPoint presentation ...</p> <p><a href="https://www.powershow.com/.../Presentation_On_Electronic_Security_powerpoint_pp...">https://www.powershow.com/.../Presentation_On_Electronic_Security_powerpoint_pp...</a></p>	<p><a href="https://economictimes.indiatimes.com/industry/services/retail/indian-e-commerce-market-to-touch-usd-84-billion-in-2021-report/articleshow/68169239.cms">https://economictimes.indiatimes.com/industry/services/retail/indian-e-commerce-market-to-touch-usd-84-billion-in-2021-report/articleshow/68169239.cms</a></p>
2	<p>Seminar ppt on digital signature - SlideShare</p> <p><a href="https://www.slideshare.net/jolly9293/seminar-ppt-on-digital-signature">https://www.slideshare.net/jolly9293/seminar-ppt-on-digital-signature</a></p>	<p><a href="https://www.ibef.org/industry/ecommerce.aspx">https://www.ibef.org/industry/ecommerce.aspx</a></p>
3	<p><b>E-Security:</b><a href="https://slideplayer.com/slide/5139575/">https://slideplayer.com/slide/5139575/</a></p>	<p><a href="https://www.thebalancesmb.com/electronic-data-interchange-edi-2221329">https://www.thebalancesmb.com/electronic-data-interchange-edi-2221329</a></p>
4	—	<p>UP: What Is Electronic Data Interchange?</p> <p><a href="https://www.up.com/suppliers/order_inv/edi/what_is_edi/">https://www.up.com/suppliers/order_inv/edi/what_is_edi/</a></p>

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**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I (Special Paper II)**

**Group – B (Commercial Laws & Practices)**

**Subject Name - Commercial Laws & Practices Paper - II**

**Subject Title: - Intellectual Property Laws: Patents, Trade Marks & Biodiversity**

**Course Code - 106**

**1. Objectives of the Course:**

- a. To equip the students to deal with the challenges of Contemporary Business World with recent knowledge.
- b. To develop independent logical thinking and problem solving skills.
- c. To sensitise the students regarding suitable careers in management and regulation of IPRs.
- d. To acquaint the students with the methods of Data collection and their interpretations.
- e. To develop among students Analytical and interpretation skills.

**Depth of the program:** Fundamental Knowledge, Principles and provisions of relevant Statutes and understanding of its applicability

**Objectives of the Program:**

1. To equip and train the students to accept the challenges of existing business environment.
2. To develop independent logical thinking and facilitate students to enhance their personality.
3. To equip the students for seeking suitable careers in management and entrepreneurship in the field of IPRs.
4. To study methods of Data collection and its interpretations.
5. To develop among students Communication and critical thinking skills.

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Intellectual Property</b>	<p>Intellectual Property Rights (IPR): Origin and Concept, Commercial and cultural dimensions, types of IPR,</p> <p>International Conventions and Organizations;</p> <p>WTO, WIPO, GATT, TRIPS Paris Convention, PCT, Budapest Treaty</p>	<ul style="list-style-type: none"> <li>• Acquainting students with historical aspects of IPR and International Conventions and organizations regarding IPRs.</li> </ul>
2	<b>Patents</b>	<p><b>Patents:</b> Definition, concept, types, patentable &amp; non- patentable inventions, Applications for patents, complete procedure for obtaining patents. (Chapters 1 to 8 of Patents Act, 1970 as amended), Patents of Additions, surrender &amp; revocation of patents. Working of Patents, Compulsory licenses and revocation, use of patents for government purposes and acquisition of patents, Infringement of patents - acts of Infringement and defenses, remedies for Infringement - suits, appeals.</p> <p>Offenses and penalties [Chapters 16 to 20 of Patents Act, 1970 as amended]</p> <p>Patents Offices, establishment, Controller of Patents: functions and powers, Patent Agents, International arrangement [Chapters 14 &amp; 21, 22 of the Act ], Issues and concerns in patent regime</p> <p>Important Judgments To Be Studied:</p> <p><b>1) <i>Bajaj Auto Limited v. TVS Motor Company Limited</i> JT 2009 (12) SC 103</b></p> <p><b>2) <i>Novartis v. Union of India</i> (2013) 6 SCC 1</b></p> <p><b>3) <i>Dr Snehlata C. Gupte v. Union of India &amp; Ors</i> [W.P. (C) No 3516 and 3517 of 2007] Delhi HC</b></p> <p><b>4) <i>Bayer Corporation v. Union of India</i> 162(2009) DLT 371</b></p>	<ul style="list-style-type: none"> <li>• Acquiring conceptual and procedural know-how of Patents, Patents office and Remedial measures in case of infringements of patents.</li> </ul>

3	<b>Trade Marks</b>	<p><b>Trade Marks:</b> Definition, concept, types, Registration of Trade Marks - Procedure, duration, effect.</p> <p>Appellate Board - Establishment, Composition, qualifications, procedure and powers, disposal of appeals.</p> <p>Assignments and Transmission of Trade Marks, Provisions relating to collective &amp; certification Trade Marks, textile goods, Infringement of Trade Marks and remedies, Offenses and Penalties.</p> <p>Important Judgments To Be Studied :</p> <p>1) <i>The Coca-Cola Company v. Bisleri International Pvt. Ltd</i> Manu/DE/2698/2009</p> <p>2) <i>Clinique Laboratories LLC and Anr. v. Gufic Limited and Anr.</i> MANU/DE/0797/2009</p> <p>3) <i>Yahoo!, Inc. v. Akash Arora &amp; Anr</i> [1999 (19) PTC 201 (Del)]</p> <p>4) <i>Cadila Health Care v. Cadila Pharmaceutica Ltd.</i> [2001 PTC (SC) 561]</p>	<ul style="list-style-type: none"> <li>• Acquiring conceptual and procedural knowledge of Trade mark and its registration. Appellate Board, Remedial measures in case of infringements of Trade mark.</li> </ul>
4	<b>Biodiversity Act, 2002</b>	<p>Important relevant definitions of the terms like Biodiversity, Biological Resources, Benefit Claims, Commercial Utilization, Fair &amp; Equitable Benefit Sharing, Sustainable Use—Regulation of Access to Biodiversity [ Ss 3 to 7], Functions &amp; Powers of National Biodiversity Authority &amp; State Biodiversity Board [ Ss 18 to 25]</p>	<ul style="list-style-type: none"> <li>• Identifying need and Significance Biodiversity along with its regulatory framework .</li> </ul>

**\*All Acts are to be studied with recent amendments**

**Method of Evaluation:**

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit – I	Continuous Evaluation (Written Test etc.)	Written Examination	Diploma in IPR
Unit – II	Continuous Evaluation [Class Presentation (PPT)etc.]	Written Examination	Diploma in Patents
Unit – III	Continuous Evaluation (Seminar/Workshops etc)	Written Examination	Diploma in Trade Marks
Unit – IV	Continuous Evaluation (Viva-Voce etc.)	Written Examination	Online Courses of WIPO,Moocs etc

**References:**

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1.	Intellectual Property Law	P. Narayan	Eastern Law House.	New Delhi
2.	Text book on Intellectual Property Rights	N.K. Acharya	Asia Law House	Hyderabad
3.	Law Relating to Intellectual Property	Dr. B.L. Waderha	Universal Law Publishing Co.	New Delhi
4.	Intellectual Property Rights, (2011)	Dr. Sreenivasulu N. S.	Regal Publications	New Delhi

5.	Intellectual Property Law in India (2006)	Justice P. S. Narayana	Goigia Law Agency	Hyderabad
6.	Law of Intellectual Property	Dr. S. R. Mynei	Asia Law House	Hyderabad
7.	Intellectual Property Rights – Heritage, Science & Society Under International Treaties	A.Subbian	Deep & Deep Publications Pvt. Ltd	New Delhi
8.	Intellectual Property Laws	Bextly & Sherman,	Asia Law House	Hyderabad

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**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**  
**Semester: - I**  
**Group – C (Advanced Cost Accounting and Cost Systems)**  
**Subject Name - Advanced Cost Accounting and Cost Systems Special Paper I**  
**Subject Title: - Advanced Cost Accounting**  
**Course Code: 107**

**Objectives:**

1. To prepare learners to understand the Scope of Cost Accounting in any business activity.
2. To learn the Cost Accounting treatment in relation to Material Cost Accounting, employee cost and overheads.
3. To develop the learners to establish the interface between Cost Accounting Standards and the various elements of Cost.
4. To enable students to learn application of different methods of costing in Manufacturing and Service industries.

Unit No.	Unit Title	Contents	Skills to be developed
1.	Nature and Scope of Cost Accounting	a) Introduction, Meaning, Definitions and Objectives of Cost Accounting, Cost Centres and Cost unit. b) Elements of Cost: Material, Labour and Overheads. <b>Material:</b> Concept, Procurement of Material, Concept of Landed cost of Material in major currencies with special reference to Dollar, Euro, and Pound only c) Preparation of Cost Sheet d.) Storage and Inventory Control Techniques - Perpetual Inventory system, ABC Analysis, Inventory Turnover ratios, Just In Time, Economic Order Quantity. Fixation of inventory Levels. e) Study of CAS 1 (Classification of Cost ) and CAS 6 (Material Cost)	<ol style="list-style-type: none"> <li>1. Ability to understand the classification of costs.</li> <li>2. Trace the cost to cost centers</li> <li>3. To be able to prepare cost sheet in various situations</li> <li>4. To understand the inventory related treatments in Cost Accounting</li> </ol>
2.	Employee	a. Meaning, Definitions and Significance of Labour Cost	1. To understand the concept of Employee Cost and its relevance in the total cost of

	Cost	<p>b. Classification of Labour Cost</p> <p>c. Methods of Remuneration-Performance Based Remuneration</p> <p>d. Labour Cost –</p> <ul style="list-style-type: none"> <li>• Idle time-causes and Accounting treatment</li> <li>• Overtime premium-Accounting Treatment &amp; its Control</li> <li>• Treatment of special Labour Cost –Fringe benefits, Bonus, Employees Welfare Costs</li> </ul> <p>e. Labour Turnover – concept, causes, Measurement &amp; Cost of Labour Turnover.</p> <p>f.Study of CAS – 7 relating to Employees Cost</p>	<p>product or services.</p> <p>2. To develop Performance Linked Employee Remuneration Systems.</p> <p>3. To relate the CAS 7 to Employee Cost Concepts</p>
3.	Overheads Accounting	<p>a. Meaning &amp; Classification of Overheads, b.Allocation, Apportionment &amp; reapportionment ( Repeated distribution Methods &amp; Simultaneous Equations Method) of Overheads</p> <p>c.Absorption of Overheads-Methods, Over and under absorption of overheads</p> <p>d.CAS – 3 ( Overheads)</p>	<p>1. To understand the stages in the process of Accounting of Overheads.</p> <p>2. To study CAS 3 in relation to Overheads.</p>
4	Methods of Costing	<p>a. Job Costing and Contract Costing.</p> <p>b. Process Costing</p> <p>c. Operating Costing in Transport, Hospitals &amp; Hotel undertakings.</p>	<p>To develop ability to ascertain cost in different industries.</p>

## Teaching Methodology

Unit No.	Total Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1	12	Use of Published Annual Reports of listed companies to classify various cost elements.	You Tube clippings of cost elements of various industries.	Visit to small industries to develop understanding about various cost inputs	Development of overall outlook of Cost Accounting
2	12	Find out the ratio to employee cost to turnover as evidenced from the published data.	View TV Channels- Sony BBC Earth where the process of manufacturing in various industries is shot.	Visit to such industries where employee cost is prominent in the total cost of product/service	Understanding the related weightage of employee cost in the total cost of product/service
3	12	Ascertain various items of Overheads from Annual Reports	Classroom Discussion	Visit small units and make a list of overheads of the respective units.	Understand the significance of overheads in the total cost of product/service
4	12	Invite the tour operators, Accountant of Hotels & Hospitals in the class room to provide the practical exposure to ascertain the cost thereof.  Study of process costing by visiting Bakeries, Papad Rolling Units, Chapati Making on mass scale for supplying to industrial canteens	You Tube clippings of various industries	Visit to Transport, Hospital & Hotel undertakings to find out the methodology applied in cost ascertainment	Understand formats of cost sheets as per Industry Specifications



## References

Sr. No	Title of the Book	Author	Publisher	Place
01	Cost Accounting-Principles & Practices	Jawahar Lal & Seema Shrivastawa	Tata Mcgraw Hill	New Delhi
02	Advanced Cost Accounting And Cost Systems	Ravi M Kishor:	Taxmann	New Delhi
03	Cost Accounting Theory And Problems	S. N. Maheshwari	Mittal Shree Mahavir Book Depot.	New Delhi
04	Advanced Cost Accounting	Jain and Narang	Kalyani Publication	New Delhi
05.	Horngren's Cost Accounting-A Managerial Emphasis	Srikant M Datar & Madhav V Rajan	Pearson	Noida Up
06	Cost Accounting-Principles & Practices	Dr.M.N. Arora	Vikas Publishing House	New Delhi
07	Cost Accounting	Dr. Eknath Khedkar	Success Publications	Pune
08	Principles and Practices of Cost Accounting	Dr. Sunita Pokharna	Success Publications	Pune

## Web References

Sr. No	Lectures	Films	PPTs	Articles	Others
For all the units.	Guest Lectures by Field Persons such as working executives from industries and of Practicing Cost and Management Accountants. .	You Tube films showing working of different industries.  Discovery Turbo Channel	Cost & Its Classification  vmouonline  •Classification & Types of cost,method of costing part 1  Commerce Guru	Articles from the Professional Journals such as , The Management Accountant, The Chartered Accountant, The Chartered Secretary, The Institute of Chartered Financial Analyst of India	<a href="https://icmai.in">https://icmai.in</a>

**Notes: The breakup of marks in the Examination will be as follows:**

- 30 % of marks for Theory & 70 % of marks for Practical.Problems
  - Areas of practical problems:
    1. Preparation of Cost Sheet
    2. Inventory turnover ratios
    3. EOQ
    4. Labour Turnover
    5. Primary and Secondary Distribution of Overheads – Repeated Distribution and Simultaneous Equation Method
    6. Methods of Absorption.
    7. Contract Costing, Process Costing and Operating Costing.
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**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – C (Advanced Cost Accounting and Cost Systems)**

**Subject Name – Advanced Cost Accounting and Cost Systems Special Paper II**

**Subject Title: - Costing Techniques and Responsibility Accounting**

**Course Code: 108**

**Objectives:**

- 1 To enhance the abilities of learners to develop the concept of Cost and Management Accounting and its significance in the business
- 2 To enable the learners to understand, develop and apply the techniques of costing in the decision making in the corporate world.
- 3 To equip the students with knowledge and skill to design and implement Cost Control through Costing Techniques.

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Skills to be developed</b>
1.	Budgetary Control	a. Concept of Budget and pre-requisites of preparing budget. b. Types of Budgets c. Process of preparing Budgets – Flexible Budget, Cash Budget Production Cost ,Quantity Budget & Sales Budget d. Limiting Factors in preparing Budgets e. ZBB (Zero Based Budget)	Students are expected to understand the role of Budget in the process of Cost Control and Decision Making.
2.	Standard Costing	a. Concept of Standard Cost b. Setting of Standards c. Variance Analysis – Material, Labour, Overhead, Sales and Profit Variances.	Skills in computation and analysis of various variances
3.	Uniform Costing and Inter-firm Comparison	a) Reasons for differences in Cost and Costing Practices. b)The application , Advantages and Limitations of Uniform Costing. c)Inter- firm comparison –Meaning, Advantages and Disadvantages	Understand the concepts of Uniform Costing and Inter

			firm Comparison
4	Responsibility Accounting and Reporting	<p>a)Definition, Meaning, Principles, controllable and Non-controllable Costs.</p> <p>b)Centers of control, Cost Centers, Revenue Center, Investment Center, Profit Center</p> <p>c)Performance Measurement of Business Centers.</p> <p>d)Reporting to different levels of Management</p>	Understand the relevance of Cost Accounting Data as a part of monitoring various segments of business.

### Teaching Methodology

Unit No.	Total Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1	15	Start with discussion on Family Budget and extend the principles to Business Budgets	Browse You Tubes on these topics	Preparation of Cash Budget	Understand Budget Preparation Process
2	15	Invite experts from industries and discuss the process of setting the standards.		Analysis of variances	Understand the impact of adverse and favourable variances on cost of a product/service.
3	06	Classroom Discussion		Compare Cost Ratios of different companies in the same sector( e.g Tyre – SEAT, MRF)	Understand the industry specific cost ratios.
4	12	Responsibility Accounting and Reporting		Performance measurement of Business Centres	To understand the importance of various tools to evaluate the business centers.

## Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested AD-On Course
Unit I	Multiple Choice Questions, Written Test, Internal Examination, PPT based presentation etc.	SPPU	Visit to industries and make a report on the visit.
Unit II			
Unit III			
Unit IV			

## References

Sr. No	Title of the Book	Author	Publisher	Place
01	Cost Accounting- Principles & Practices	Jawahar Lal & Seema Shrivastawa	Tata Mcgraw Hill	New Delhi
02	Advanced Cost Accounting And Cost Systems	Ravi M Kishor:	Taxmann	New Delhi
03	Cost Accounting Theory And Problems	S. N. Maheshwari	Mittal Shree Mahavir Book Depot.	New Delhi
04	Advanced Cost Accounting	Jain and Narang	Kalyani Publication	New Delhi
05.	Horngren's Cost Accounting-A	Srikant M Datar & Madhav V Rajan	Pearson	Noida Up

	Managerial Emphasis			
06	Cost Accounting-Principles & Practices	Dr.M.N. Arora	Vikas Publishing House ,	New Delhi
07	Cost Accounting	Dr. Eknath Khedkar	Success Publications	Pune
08	Principles and Practices of Cost Accounting	Dr. Sunita Pokharna	Success Publications	Pune

**Web References:**

Sr. No	Lectures	Films	PPTs	Articles	Others
For all the units.	Guest Lectures by Field Persons such as working executives from industries and of Practicing Cost and Management Accountants. .	You Tube films showing working of different industries.  Discovery Turbo Channel	Responsibility Accounting  Dr. Shuchi Singhal  vmouonline,  Standard Costing Revision  CA Praveen Khatod  Budgetary Control and Responsibility Accounting,  Cori Crews	Articles from the Professional Journal like The Management Accountant, The Chartered Accountant, The Chartered Secretary, The Institute of Chartered Financial Analyst of India	<a href="https://icmai.in">https://icmai.in</a>

Notes: The breakup of marks in the Examination will be as follows:

- 30 % of marks for Theory & 70 % of marks for Practical Problems .
- Area of practical problems:
  1. Cash Budget
  2. Flexible Budget
  3. Material, Labour , Overhead and Sales Variances
  4. Performance Measurement of Business Centers
  5. Responsibility Accounting

**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – D (Co-operation & Rural Development)**

**Subject Name - Co-operation & Rural Development Special Paper I**

**Subject Title: - Co-operative Movement in Indian**

**Course Code: 109**

**Objectives of the course:**

1. To acquaint the students with the Co-operative Movement of India
2. To aware the role of State and Central Govt. in development of co-operative sector.
3. To give basic knowledge about formation of Co-operative society and its administration.

**Depth of Programme: - Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Co-operative Movement in India:</b>	Evolution of Co-operative Movement in India- Pre and Post Independence, Recent scenario in Co-operative Movement in India , Problems and Challenges of Co-operative movement in India	<ul style="list-style-type: none"><li>• To understand the Evolution of Co-operative Movement in India</li><li>• To understand the Recent scenario in Co-operative Movement in India</li><li>• To understand the Problems and Challenges of Co-operative movement in India</li></ul>
<b>2</b>	<b>Study of Co-operative legislations in India</b>	Study of Maharashtra State Co-operative Societies Act 1960 and rules 1961 with updated amendments regarding :- a. Registration b. Members and their Rights. c. Properties and Funds Management. e. Audit Enquiry Inspection & Supervision.	<ul style="list-style-type: none"><li>• To understand the Maharashtra State Co-operative Societies Act 1960</li><li>• To understand the registration process of Co-operative Society</li><li>• To understand the Members and their Rights of Co-operative Society</li></ul>

		f. Settlement of Disputes. E.g. Liquidation h. Appeal Revision & Reviews I. 97 <sup>th</sup> Amendment in co-operative act.	<ul style="list-style-type: none"> <li>To understand the Management of Co-operative Society</li> <li>To understand 97<sup>th</sup> Amendment in co-operative act.</li> </ul>
3	<b>Structure of Co-operatives Department</b>	(a) State Level (b) Divisional Level (c) District Level (d) Rights, Duties and Responsibilities of Registrar of Co-operative Societies	<ul style="list-style-type: none"> <li>To understand structure of co-operative department.</li> <li>To understand the Rights, Duties and Responsibilities of Registrar of Co-operative Societies</li> </ul>
4	<b>Support of Various Committees and Institutional to Cooperative Movement</b>	(a) All India Rural Credit Survey Committee (AIRCS), Rural Credit Review , Report Committee on Inauguration of Co-operative Credit CRAFTICAD , Report of Vaidyanthan Committee, Report of Narsimham Committee (b)NABARD & NCDC support to Co-operatives, Co-operative courses	<ul style="list-style-type: none"> <li>To understand the Support of various committees and institutional to co-operative movement</li> <li>To study the Role of NABARD &amp; NCDC support to Co-operatives</li> </ul>

### Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and AV Application	Project	Expected Outcome
1	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources. Case studies of Co-operative Societies for understand Recent scenario in Co-operative Movement, Debate on Challenges of Co-operative movement in India	Short Film Show on Co-operative Movement, A.V. Application (Audio and Visual Application)	Project on Co-operative Movement in India- Pre and Post Independence	Understanding of basic knowledge of Co-operative Movement in India Understanding the Problems and Challenges of Co-operative movement in India
2	12	Guest Lectures of eminent personalities in co-operative sector, experience sharing, Pre reading, Class discussion, examples from real life	You Tube Video on Indian Co-operative Movement	Project Report on Amendment of Co-operative Societies Act. Project Report on 97 <sup>th</sup> Amendment in co-operative act.	Understanding of Study of Co-operative legislations in Maharashtra. Learning functioning of



		through newspapers and internet resources, case studies, PPT			Co-operative Society.
3	12	Organise workshop for students, Pre reading, Class discussion, examples from real life through newspapers and internet resources. case studies, Field visit to Co-operative Societies, PPT	Presentation on structure of co-operative department and Rights, Duties and Responsibilities of Registrar of Co-operative Societies	Project on Rights, Duties and Responsibilities of Registrar of Co-operative Societies	Understanding the structure of co-operative department.
4	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources, Guest Lectures of eminent personalities	Presentation on Support of various committees and institutional to co-operative movement	Project on Role of NABARD & NCDC support to Co-operatives	Understanding the role of various committees and institutional for support to co-operative movement

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Seminar on Co-operative Movement in India:
Unit-II	Seminar, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Study visit to Co-operative Society
Unit-III	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	To Organize guest lecture of Co-operative department officer
Unit-IV	Class participation, Case Studies, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Workshop on Support of various committees and institutional to co-operative movement

## References

<b>Sr. No</b>	<b>Title of Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Co-operation and Rural Development	Principal Dr.Nitin Ghorpade	Success	Pune
2	New Dimensions of Co-operative Management	G.S. Kamat	Himalaya Publication	New Delhi
3	Cases in Co-operative Management	G.S. Kamat	Himalaya Publication	New Delhi
6	Consumer Co-operation in India	G.S. Kamat		
7	Co-operation	Prof L.P. Wakale and Dr. G.H.Barhate	Sheth Publishing	Mumbai
8	Journal of Commerce and Management Thought(JCMT)			
9	Journal Co-operative Organization and Management , Journal of Co-operative studies			

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**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – D (Co-operation & Rural Development)**

**Subject Name - Co-operation & Rural Development Special Paper II**

**Subject Title: - Rural Development**

**Course Code: 110**

**Objectives of the course:**

1. To acquaint the students with the Rural Development
2. To study the problems of rural development
3. To study the solution for rural development

**Depth of Programme: - Fundamental and deep Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Introduction - Rural development</b>	concept of rural development, Importance of Rural development in Maharashtra, Need of Rural development in Maharashtra, The problems and challenges of rural development in India	<ul style="list-style-type: none"><li>• To understand the Importance of Rural development</li><li>• To understand the Need of Rural development in Maharashtra</li><li>• To understand the Problems and Challenges of rural development in India</li></ul>
<b>2</b>	<b>Rural development in Maharashtra</b>	Introduction ,Current scenario of Rural development of Maharashtra, Government schemes and programme for Rural development in Maharashtra The problems of rural development in Maharashtra, The Role of government for Rural development in Maharashtra	<ul style="list-style-type: none"><li>• To understand the Current scenario of Rural development of Maharashtra</li><li>• To understand the Government schemes and programme for Rural development in Maharashtra</li><li>• To understand the Role of government for Rural development in Maharashtra</li></ul>

<b>3</b>	<b>Rural development in India</b>	Introduction ,Current scenario of Rural development of India, Central Government schemes and programme for Rural development in India, The problems and Challenges for rural development in India ,The Role of government for Rural development	<ol style="list-style-type: none"> <li>i. To understand the Current scenario of Rural development of India</li> <li>ii. To understand the Government schemes and programme for Rural development in India</li> <li>iii. To understand the Role of government for Rural development in India</li> </ol>
<b>4</b>	<b>Rural Development Planning and Management</b>	Concepts, Principles and Approaches: Concept of development: Indicators of development; Conceptual framework, Strategies; Rural development in India: A retrospective; Policies, Programs: Techniques of planning: Detail steps in district and block level planning: Area Development Planning: Definition, purpose, Area development plans, The Role of Management function for Rural development	<ul style="list-style-type: none"> <li>• To understand the Principles and Approaches of rural development</li> <li>• To study the Rural development in India</li> <li>• To understand the Role of Management function for Rural development</li> </ul>

### Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative Methods to be used</b>	<b>Film Shows and AV Application</b>	<b>Project</b>	<b>Expected Outcome</b>
<b>1</b>	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources. Debate on The problems and challenges of rural development in Maharashtra, Poster presentation	Short Film Show on Rural Development e.g. Hivre Bazar Village video	Project on Importance of Rural development in Maharashtra	Understanding of basic knowledge of Rural development in Maharashtra Understanding The problems and challenges of rural development in Maharashtra

2	12	Guest Lectures of eminent personalities in Rural Development , experience sharing, Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies, PPT, Survey report	You Tube Video on rural development in Maharashtra and India	Project Report on Government schemes and programme for Rural development in Maharashtra	Understanding rural development in Maharashtra and India. Understanding the problems of rural development in Maharashtra
3	12	Organise workshop for students, Pre reading, Class discussion, examples of Various developed Villages, Internet resources. case studies, Field visit ,street play	Presentation on Central Government schemes and programme for Rural development in India	Project on Current scenario of Rural development of India, The Role of government for Rural development	Understanding the problems and Challenges for rural development in India and the Role of government for Rural development
4	12	Pre reading, Class discussion, examples of Villages through Newspapers and internet resources, Guest Lectures of eminent personalities ,PPT	Group discussion on Rural Development Planning and Management	Project on Conceptual framework and Strategies for Rural development	Understanding Rural Development Planning and Management

## Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination ,G.D	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Seminar/Workshop on Rural development
Unit-II	Seminar, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Awareness Programme on the problems of rural development in Maharashtra
Unit-III	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination, Presentation	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Group discussion on Central Government schemes and programme for Rural development in India ,Field visit
Unit-IV	Class participation, Case Studies, Assignment, field visit , Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Visit to Panchat Committee/ Z.P office for understanding the scheme of Rural Development

## References

Sr. No	Title of Book	Author/s	Publication	Place
1	Co-operation and Rural Development	Principal Dr.Nitin Ghorpade	Success	Pune
2	Human Resource Management Practices in Co-operative sector	Principal Dr. Shaikh Aftab Anwar	Idea Publication	New Delhi
3	Rural development –Principles –Policies and Management	Katar Singh	Sage Publication	New Delhi
4	Rural Society and development	Sambhaji Desai	Prashant Publication	
5	Rural Development in India-Policies and Programme	Abdul Azees NP and S.M. Javed Aktar	Kalpaz Publication	
6	Journal of Rural Development			
7	Journal of commerce and Management			

**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – E (Business Practices & Environment)**

**Subject Name - Business Practices & Environment Special Paper I**

**Subject Title: - Organized Trades and Markets**

**Course Code: 111**

**Objectives of the course:**

- 1) To understand the concepts of organized trade and markets, community markets, regulated markets and business.
- 2) To understand service sector and its role.
- 3) To know about FDI
- 4) To understand cooperative marketing.

**Depth of Programme: - Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Organized Trade &amp; Markets :</b>	Introduction , Meaning and importance - Features of Organized Commodity Markets and Regulated Markets Business-concept - Objectives - Nature and scope of Business in the modern context – Study of various policies with illustrations – Product Buying, Selling Price and Credit Policies.	<ul style="list-style-type: none"><li>• To understand the nature and scope of modern business</li><li>• To understand the relevance and working of different types of organised markets, reasons for regulating them and challenges associated with the same.</li><li>• To understand various types of business policies in modern context</li></ul>
<b>2</b>	<b>Service Sector:</b>	Meaning, Characteristics, Types of services, Role, Importance and development of Service Sector in India - Business Practices with reference to E-Commerce.	<ul style="list-style-type: none"><li>• To understand the nature, role and importance, progress and contribution of service sector in India</li><li>• To understand the concept of E-Commerce and its need in today's business world</li></ul>
<b>3</b>	<b>State in Trade</b>	FDI – Meaning, importance & objectives, Role of FDI in retail trade with illustrations. Arguments for and against FDI. Concept of State Trading -	<ul style="list-style-type: none"><li>• To gain the fundamental knowledge about FDI and its role in retail trade</li><li>• To evaluate the performance of FDI in</li></ul>

		Arguments for and against State Trading - Role of State, Trading Corporation (STC) - State and privatization of trading Activities. Mall administration & organization – Super Markets.	development of business sector in India <ul style="list-style-type: none"> <li>To understand the role of State and Trading Corporations in modern trading activities</li> </ul>
4	<b>Co-operative Marketing</b>	Objectives:, Need - Features – Structure - Functions – Advantages and Role of co-operative marketing with illustrations in rural areas - Direct Marketing for farmers, Self Help Group ,Rural Development Policy, Central Mall, D Mart, Reliance Mart, Innovative Marketing practices	<ul style="list-style-type: none"> <li>To understand the fundamental knowledge regarding nature and role of cooperative marketing in rural areas</li> <li>To study the need of direct marketing, Self Help Group in context of rural areas</li> <li>To gain fundamental knowledge about Innovative marketing practice and Mall Culture</li> </ul>

### Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Project	Expected Outcome
1	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources. Case studies of prominent Businessmen in India and World	Film Show on Types of Markets Film on Nature of Business and Business Policies	Project on Business Polices Project on Organised Commodity market and Regulated markets	Understanding of basic knowledge of Modern Business and how to start a new business Understanding various markets and its relation in framing business policies
2	12	Guest Lectures of eminent personalities in service sector, experience sharing, Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies	You Tube Video on Service Sector and E-Commerce	Project Report on Role and Development of Service Sector in India Project Report on Advantages of E-Commerce in modern business context.	Learning the concept of E-Commerce and its practical application in business world Learning functioning of Service Sector and its growth in India
3	12	Debate on Burning and real life economical issues such as FDI, Role of State etc., Pre reading, Class discussion, examples from real life	Presentation on FDI and its positive and negative aspects	Project on FDI with illustration and case studies	Evaluate the performance of FDI in development of business sector in India Understanding the role of



		through newspapers and internet resources.			trading corporations in India
4	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies, Field visit to Malls	Presentation on Cooperative Marketing, Direct Marketing Mall Culture	Project on Self Help Groups Project report on Mall Culture, Case studies	Understanding the procedure of Co-operative Marketing, Direct Marketing and functioning of Malls

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Functioning of Commodity Market and Stock Market
Unit-II	Seminar, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	E-Commerce
Unit-III	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Mall Administration and Organisation
Unit-IV	Class participation, Case Studies, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	i. Co-operative Marketing ii. Agro Tourism

## References

<b>Sr. No</b>	<b>Title of Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Principles of Practice of Marketing	C.B.Mamoria	KitabMahal	New Delhi
2	Commodity Marketing	P.L.Gadgil	Shubhada Sarswat,DistributiveTrade	Pune
3	Business Environment Text & Cases	Francis Cherunilam	Himalaya Publishing House Pvt.Ltd.	Mumbai
4	Regulated Markets	W.R.Natu	Asia Publishing House	Mumbai
5	Financial Derivatives & Risk Management	O. P.Agarwal	Himalaya Publishing House Pvt.Ltd.	Mumbai
6	Principles of business organization	Acharya, Govekar, A.R.Sheth & Co	Bombay A.R. Sheth and Co.	Mumbai

**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – E (Business Practices & Environment)**

**Subject Name - Business Practices & Environment Special Paper II**

**Subject Title: -Business Environment and Policy**

**Course Code: 112**

**Objectives of the course:**

- 1) To understand the term business environment and its aspects
- 2) To study the problems of growth of economy and remedies to solve problems
- 3) To know the term pollution and its problems and types
- 4) To understand the term globalization and its effects and challenges

**Depth of Programme: - Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Business Environment</b>	Meaning, Nature, Importance Aspects of Environment -Business Environment with reference to India.	<ul style="list-style-type: none"><li>• To understand the nature and Importance, Aspects of Business Environment</li><li>• To understand the Business Environment with reference to India</li></ul>
<b>2</b>	<b>Problems of growth of Economy</b>	Unemployment, Poverty, Regional Imbalance. Social Injustice, Inflation, Parallel economy, Lack of technical knowledge and information. - Remedies to solve these problems, Opportunities in Environment.	<ul style="list-style-type: none"><li>• To understand the Unemployment, Poverty, Regional Imbalance</li><li>• To understand the Lack of technical Knowledge and information</li></ul>
<b>3</b>	<b>Pollution</b>	Meaning, Problems of pollution - Types of pollution- Water, Air and Noise- Regulatory mechanism & laws, sources and effects, various policies of Government, Go Green Movement	<ul style="list-style-type: none"><li>• To Understand the Problems of various types of Pollution</li><li>• To understand the Regulatory Mechanism and Laws</li><li>• To understand the various policies of Government to go Green Movement.</li></ul>

4	<b>Globalization &amp; its impact</b>	Meaning, objectives, importance & scope of Globalization Effect & challenges of Globalization, Review, Impact and implication Globalization	<ul style="list-style-type: none"> <li>• To understand the fundamental knowledge regarding objectives, importance and scope of Globalisation.</li> <li>• To study the Effects and Challenges of Globalisation.</li> <li>• To gain fundamental knowledge about Impact and implication of Globalisation.</li> </ul>
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### Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and T.V. Application	Project	Expected Outcome
1	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources. Case studies of Business Environment.	Film Show on Aspects of Environment.	Project on Business Environment with reference to India	Understanding of basic knowledge of nature, Importance and Aspects of Environment
2	12	Guest Lectures of eminent personalities in Business Economy, experience sharing, Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies	You Tube Video on Unemployment, Poverty, and Regional Imbalance	Project Report on problems and Remedies of Unemployment, Poverty, and Regional Imbalance.	Learning the concept of Unemployment, Poverty, and Regional Imbalance and to find out Remedies of these problems.
3	12	Debate on Burning and real life issues of Pollution such as Water, Air, and Noise pollutions, Pre reading, Class discussion, examples from real life through newspapers and internet resources	Presentation on problems, Regulatory mechanism and laws of Pollution.	Project on various policies of Government for Go Green Movement.	Evaluate the performance of application of Govt.Policies
4	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies, Field visit	Presentation on Effects and challenges of Globalisation	Project on Review of Impact and implication of Globalisation.	Understanding the importance, scope, effects and challenges of Globalisation.

### Method of Evaluation

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit-I	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Business Environment in India
Unit-II	Seminar, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Remedies to solve the problems of Growth of Economy
Unit-III	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Policies of Government for Pollution and GO Green Movement
Unit-IV	Class participation, Case Studies, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Review Impact and implication of Globalisation.

### References

<b>Sr. No</b>	<b>Title of Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Global Economy and Business Environment	Francis Cheranilan	Himalaya publishing house	Mumbai
2	Commodity Marketing	P.L.Gadgil	Shubhada Sarswat, Distributive Trade	Pune
3	Business Environment Text & Cases	Francis Cherunilam	Himalaya Publishing House Pvt.Ltd.	Mumbai
4	Business Environment Chllaaghan	, Elliaon Edward Arnold	Asia Publishing House	Mumbai

**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – F (Business Administration)**

**Subject Name - Business Administration Special Paper I**

**Subject Title: - Production & Operation Management**

**Course Code - 113**

**Objectives of the course**

- To understand and develop deep insight of Production & Operation Management.
- To understand & identify business problems involving operational function, planning and control, design development and quality management.
- Demonstrate awareness and importance of application, operation and supply chain management.
- To develop skills necessary to effectively analyze and synthesize the many inter relationship inherent in complex socio-economic productive systems.
- To increase the knowledge and perspective to gain from emerging trends in production and operation management.

**Depth of the program – Fundamental Knowledge**

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Production and Operation Management : An Overview</b>	a. <u>Production and Operation Management</u> : Meaning ,importance , Functions , Types of Production Systems – Mass Production /Flow Line , Continuous, Intermittent , Batch Production , Job Lots etc. b. Service Systems – Recent trends in production and service systems c. Plant Layout – Objectives , basic principles and types d. Safety Considerations and environmental aspects	<ul style="list-style-type: none"> <li>• Acquaint the students knowledge about Production and Operation Management.</li> <li>• Recognize the inherent conflict of interest in many business decisions relating to safety consideration and environmental aspects.</li> </ul>
2	<b>Supply Chain Management</b>	a. Supply chain Management : Introduction , Scope, Components, Process of Supply Chain Management. b. Tools and Techniques of Supply Chain Management , Performance Measurement and implementation. c. Career opportunities in Supply Chain Management	<ul style="list-style-type: none"> <li>• Understanding the scope and Process of Supply Chain Management</li> <li>• Knowledge on various career opportunities in</li> </ul>
3	<b>Production Planning and Control</b>	a. Production Planning : Meaning , Objectives , Importance and its components b. Production Control : Meaning , Objectives, Significance and factors affecting Production Control. c. Product Design and Development – Concept , Process and factors affecting product development	<ul style="list-style-type: none"> <li>• Acquaint the students with knowledge of Production Planning and Control.</li> <li>• Motivate the students to develop and innovate ideas for Product Design and Development</li> </ul>

<b>4</b>	<b>Total Quality Management and Emerging Issues</b>	<ol style="list-style-type: none"><li>a. Total Quality Management – Meaning , Dimensions , Objectives and importance</li><li>b. Emerging Issues in Production and Operations Management –<ol style="list-style-type: none"><li>i. Mobile Accessibility</li><li>ii. Atomization of Operational Processes</li><li>iii. Employee empowerment</li><li>iv. Outsourcing</li><li>v. Waste Management</li></ol></li></ol>	<ul style="list-style-type: none"><li>• Recognize the importance of Total Quality Management</li><li>• Identification of emerging issues in Production and operation Management</li></ul>
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## Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative methods to be used</b>	<b>Film shows and AV Applications</b>	<b>Project</b>	<b>Expected Outcome</b>
1	12	Article Review , Group Discussion , Quiz	Documentary	Report on the Review of Article	Conceptual Clarity
2	12	Survey Report , Poster Presentation , Guest Lecture	Documentary	Survey Report / Poster Presentation	Awareness on Career opportunities in Supply Chain Management  Introduction to Alternative Career opportunities
3	12	Interview , Game , PPT , Narrating	Documentary	Report Writing	Development of Innovative abilities and Application oriented skills
4	12	Project making , street Play , Jingles making	Documentary	Project	Awareness on the recent and emerging areas  Change in overall perception towards quality enhancement

## Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Evaluation	Written exam	Related Short Term Course/ Seminar/ Workshop
Unit – II	Continuous Evaluation	Written exam	Related Short Term Course/ Seminar/ Workshop
Unit – III	Continuous Evaluation	Written exam	Related Short Term Course/ Seminar/ Workshop
Unit – IV	Continuous Evaluation	Written exam	Related Short Term Course/ Seminar/ Workshop

## References :

### List of Books Recommended :-

1. Production and Operation Management – By B.S.Goel (Pragati Prakashan)
2. Production and Operation Management – By S.N. Chary (Tata Mcgraw Hill)
3. Modern Production and Operation Management – By Elword Buffa
4. Production Planning and Inventory Control – By Magee Budman (Tata Mcgraw Hill)
5. Essentials of Business Administration – By K.A. Shantappa
6. A Key of Production Management – By Kalyani Publication

**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – F (Business Administration)**

**Subject Name - Business Administration Special Paper II**

**Subject Title: - Financial Management**

**Course Code - 114**

**Objectives of the course**

- To acquaint the student with knowledge of various Financial Management terminologies ( Investment ,Credit Planning , Working Capital Management
- To understand the concepts relating to Financing & Financial Statement Analysis
- To utilize the information gathered to reach an optimum conclusion by a process of reasoning
- To enable the students to use their learning to evaluate , make decisions and provide recommendations

Depth of the program – Fundamental Knowledge

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Introduction</b>	Meaning and objectives of Financial Management , Financial systems in India – RBI , SEBI. New trends in Financial Management	<ul style="list-style-type: none"><li>• Understanding Financial Management</li><li>• Recognizing the Financial System of India.</li></ul>
<b>2</b>	<b>Financial Statements &amp; Financial Analysis</b>	Concept of Financial Statements – Income and Balance Statements Financial Analysis – Types and Techniques	<ul style="list-style-type: none"><li>• Understanding Financial Statements</li><li>• Analyzing the Financial Statements</li></ul>
<b>3</b>	<b>Investment Decisions</b>	Capital Expenditure, Capital Budgeting, techniques of Capital Budgeting. Investment	<ul style="list-style-type: none"><li>• To enable the students to make Investment Decisions</li></ul>

		Decision Methods – Payback , Net Present Value , A.R.R and I.R.R	<ul style="list-style-type: none"> <li>To study the Capital Budgeting Techniques</li> </ul>
<b>4</b>	<b>Working Capital &amp; Credit Management</b>	<p>Meaning and Nature of Working Capital and Factors affecting Working Capital</p> <p>Formulation of Credit Policy , Collection Policy , Accounts Receivable Management, Factoring and Lease Financing</p>	<ul style="list-style-type: none"> <li>To understand the meaning and nature of Working Capital</li> <li>To enable the students to formulate Credit and Collection policy</li> </ul>

### Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative methods to be used</b>	<b>Project</b>	<b>Expected Outcome</b>
1	08	Lecture Methods	Individual assignment report	Developing understanding on Financial Management
2	14	Lectures Method Guest Lectures by subject Experts	Case analysis and Discussions	Developing Financial Statement analysis skills
3	14	Case analysis Internet Research	Article Review Survey analysis	Developing Decision making Skills
4	12	Survey analysis , Assignments , Field Visits	Field Visit Article Review	Developing skills for effective Credit and Working Capital Management

<b>Suggested Add on Course</b>
Add on course on share market
Basic Statistical Analysis Certificate Course
Short term course on Capital Budgeting Techniques
Certificate course on Working Capital Management

**References :**

List of Books Recommended :-

7. Financial Management – By M.Y.Khan and P.K. Jain (Tata Mcgraw Hill)
8. Financial Management – By I.M.Pandey ( Vikas Publishing House)
9. Financial Management – By Prasanna Chnadra (Tata Mcgraw Hill)
10. Financial Management – By P.V. Kulkarni (Himalaya Publishing House)
11. Financial Management – By Prasanna Chnadra (Tata Mcgraw Hill)
12. The Indian Financial System – By Bharati Pathak (Dorling Kindersley Pvt. Ltd.)
13. Financial Policy and Management Accountant – By Bhabatosh Banerjee(PHI Learning Pvt. Ltd.)
14. Introduction to Lease Financing – By Rajas Parchure , N. Ashok(Time Research Foundation)
15. Credit Management – By Herbert Edwards (Coles Publishing Co. Ltd.)
16. Financial Management – Dr. Parag Kalkar, Success Publications.

**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – G (Advanced Banking & Finance)**

**Subject Name - Advanced Banking & Finance Paper I**

**Subject Title:- Legal Framework of Banking**

**Course Code – 115**

**Objectives:**

1. To acquaint the students with legal framework in which the Indian banking is working today.
2. To make the students aware about the latest developments in the field of banking law.
3. To enable the students to understand modern banking practices.
4. To enable the students to establish a link between the legal provisions and the practical aspects of banking.

<b>Unit No.</b>	<b>Topic</b>	<b>No. of Periods</b>	<b>Teaching Method</b>
01	<b>Banking Regulation Act 1949</b> Provisions relating to- Definition of bank (Sec. 5B and 5C), Business of Banking Companies (Sec.6), Restrictions on business of banking companies (Sec.8, 19 and 20), Capital Structure(Sec.12), Powers of the RBI (Sec.21, 22and 36 to 36AD), Applicability of the Act to Cooperative Banks (Sec.56), amendments of BRA1949 up to 2012, Banking Regulation (Amendment) Bill 2017	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet
02	<b>The Negotiable Instrument Act 1881</b> Provisions relating to: Definition of negotiable Instrument (Sec- 13), Promissory note (Sec -4), Bill of exchange (Sec -5), and Cheque (Sec -6), Comparative Study of Negotiable Instruments Parties to negotiable instrument (Section -7), Holder (Sec -8), Holder in due course (Sec -9), Payment in due course (Sec -10), Negotiation (Sec -14), Endorsement (Sec -15), Dishonour of Negotiable Instruments (Sec -91-92),	12	Lecture, PPT, Group Discussion, Library Work,

	<p>Noting and Protest (Sec -99-104-A), Penalties in case of dishonour of certain cheques for insufficiency of funds in the account (Sec. 138 to 147), Negotiable Instruments (Amendment and Miscellaneous Provisions) Act, 2002: Electronic Cheques/Truncated Cheques</p> <p>Negotiable Instruments (Amendment) Act, 2018- Empowers the Appellate Court to order payment pending the appeal against conviction (Sec.148)</p>		<p>Assignment, Use of internet</p>
03	<p><b>A. The Reserve Bank of India Act, 1934</b></p> <p>Provisions relating to: Incorporation, Capital management and Business (Sec 3 to 19), Central Banking functions ((Sec -20 to 45),Regulatory and Supervisory Collection and furnishing of credit information (45 A to 45 G) ,Penalties (Sec 58 B to 58 -G), RBI Act ( As Amended By Finance Act 2018)- Monetary Policy Committee (Sec.45 ZA to 45 ZO)</p> <p><b>B. RBI and Regulation of Digital Financial Services in India, 2012 to 2016.</b></p>	12	<p>Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet</p>
04	<p><b>Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002</b></p> <p>Provisions relating to: Preliminary (Section 1 and 2) Regulation of securitisation and reconstruction of financial assets and financial institutions (Section 3 to 12 A) Enforcement of security interest (Section 13 to 19) Central registry (Section 20 to 26) Offences and penalties (Section 27 to 30) Miscellaneous (Section 31 to 41) Relevant amendments between 2004 and 2008 and Amendments in SARFAESI Act in 2016: (Taking possession over collateral: Audit and inspection)</p>	12	<p>Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet</p>
		Total- 48	

## References,

1. Gordon & Natarajan: Banking Theory Law and Practice, Himalya Publishing House
2. Srivastava S. P.; Banking Theory & Practice, Anmol Publications
3. PrakhasM., Bhargabhi R: Banking law & Operation, Vision Book House.
4. Tannan : Banking Law and Practice in India, Indian Law House
5. Sheldon H.P: Practice and Law of Banking.
6. VenkataramanaK., Banking Operations, SHBP.
7. Kothari N. M: Law and Practice of Banking.
8. GulatiNeelam C: Principles of Banking Management.
9. Maheshwari. S.N.: Banking Law and Practice, Vikas Publication
10. Varshaney P.N.:- Banking Law & Practice
11. Justine Paul and Pamalata Suresh; Management of Banking & Financial Services; Second Edition- Published by Dorling Kindersley (Pearson)
12. Compendium on the Insolvency and Bankruptcy Code- 2016
13. Principles and Practices of Banking- By Indian Institute of Banking & Finance- Macmillan Publication
14. [www.rbi.org.in](http://www.rbi.org.in)
15. Legal and Regulatory Aspects of Banking– Published by Indian Institute of Banking & Finance.
16. All relevant & recent Bare Acts.
17. Banking Law and Practices- Mr. Prakash Misal, Success Publications.

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**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – G (Advanced Banking & Finance)**

**Subject Name - Advanced Banking & Finance Special Paper II**

**Subject Title:- Central Banking**

**Course Code – 116**

**Objectives:**

1. To acquaint the students with RBI's various functions.
2. To make the students aware about the latest developments in the field of Para banking and NBFCs in India.
3. To enable the students to understand the role of central banking especially in India.
4. To enable the students to acquire sound knowledge of working and techniques of central bank.

<b>Unit No.</b>	<b>Topic</b>	<b>No. of Periods</b>	<b>Teaching Method</b>
<b>01</b>	<b>Changing Role and Need of Central Banking</b> Origin and evolution of Central banking  Role of Central Bank in emerging Economies  Need and Rationale of Central Bank.  Autonomy of Central Banks Evolution of Reserve Bank of India (R.B.I.)	08	Lecture, PPT,  Group Discussion, Library Work,  Assignment, Use of Internet
02	<b>Functions and Regulations of Reserve Bank of India</b>  <b>2 I. Functions of RBI-</b>  <b>A. The Reserve Bank as currency authority:</b>	14	Lecture, PPT,  Group

	<p>Issue of currency notes, Asset banking for note- issue, Distribution of currency, Currency chests,</p> <p>Recent developments in currency management.</p> <p><b>B. The Reserve Bank as banker to Government:</b> Maintenance of Government accounts,</p> <p>Banker to the Central Government and the State governments, Management of public debt</p> <p><b>C. RBI as a Banker's Bank:</b> Controller of Credit, Lender of Last Resort</p> <p><b>D. RBI as a Custodian/Manager of Foreign Reserves</b></p> <p><b>E. Promotional Functions of RBI</b></p> <p><b>2 II. Regulation and Supervision of Reserve Bank over Commercial banks.</b></p> <p>Regulation and supervision over commercial banks:</p> <p>Licensing of banks, Opening of new banks, Branch Licensing, Foreign banks, Cash reserves and liquid assets, Prudential norms, Capital and reserves, Control over methods of operation, New Banking Licensing Policy</p>		<p>Discussion, Library Work,  Assignment, Use of internet</p>
03	<p><b>Para banking activities</b> Control over management, Annual accounts and audit, Subsidiaries of commercial banks, Credit Information Bureau of India Ltd. (CIBIL) Bank Assurance, Portfolio Management Services, Pension Fund Managers,</p> <p>Mutual Fund Business, Underwriting of Bonds of PSUs,</p> <p>Investment in Venture Capital Funds etc.</p>	14	<p>Lecture,  PPT,  Group Discussion, Library Work  Book Assignment, Use of internet</p>
04	<p><b>Non Banking Financial Companies (NBFCs)</b> Meaning and types of NBFCs</p>	12	<p>Lecture,  PPT,</p>

Role of NBFCs Problems of NBFC Measures for supervision over NBFCs. Revised Regulatory framework for NBFCs		Group Discussion, Library Work, Assignment, use of Internet
	<b>Total- 48</b>	

### References,

1. Venugopal Reddy Y.; Monetary & Financial Sector Reforms in India
2. Jhingan M.L., Vrinda; Money, Banking, International Trade And Public Finance- Publications Ltd.
3. Fabozzi Frank J.; Foundation of Financial Markets and Institutions- Dorling Kindersley Pvt. Ltd.
4. Sharma Hemant; Encyclopaedia of Banking and Finance – Cyber Tech Publication, New Delhi
5. Financial Markets and Institutions in India- Dr. Sunil Shete, Success Publications.
6. Indian and Global Economy - Dr. M. U. Mulani, Success Publications
6. rsaaLrajaoMd` 32016´ : BaartIya Aqa-vyavasqaa , sa@saosa piblakoSana , puNao.
7. Govt. of India- Economic Survey
8. R.B.I.: Functions and Working – R.B.I. Publication.
9. R.B.I. Bulletins.
10. R.B.I. Annual Reports.
11. Reports on Trend & Progress of Banking in India- R.B.I. Publication
12. www.rbi.org.in

**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – H (Advanced Marketing)**

**Subject Name - Advanced Marketing Special Paper I**

**Subject Title:- Marketing Techniques**

**Course Code -: 117**

**Objectives of the course**

1. To expose the students to various approaches to the study of marketing
2. To create awareness about environmental factors which are affecting marketing environment
3. To provide in-depth knowledge about marketing mix
4. To acquaint students with the importance of public relation in the field marketing
5. To help students understand stake-holders role in marketing mix

Depth of the program – Detailed Knowledge

Objective of the Program

- a. To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing techniques.
- b. To develop students' independent logical thinking and facilitate personality development.
- c. To prepare the students for seeking suitable careers in the field of marketing.
- d. To impart the knowledge about how to collect the data and interpret it.
- e. To develop among students Communication and Analytical skills

Unit No	Unit Title	Contents	Purpose Skills to be developed
01	Marketing Introduction & Marketing Environment	<p><b>Marketing</b> : Meaning ,Definition,Elements, Objectives, Importance, Advantages and limitations, Evolution and Scope Approaches to the study of Marketing</p> <p><b>Marketing Environment:</b> Meaning and Definition, Internal and external Environmental factors influencing the marketing environment</p>	To impart the students about Marketing & marketing environment
02	Product Mix and Price Mix	<p><b>Marketing Mix</b> : Meaning, Definition,Elements,</p> <p><b>Product Mix:</b> Concept of Product, Product Lines, Product line length, depth, width. Product Mix Width. Product Simplification diversification and elimination</p> <p><b>Product Management:</b> New product development and Product Life Cycle</p> <p><b>Brand Management:</b> concept definition and history ofbrand/branding Brand Creation, Rebranding, Brand Positioning, Brand Equity Brand Contract, Brand Factory</p> <p><b>Labelling: Meaning and importance</b></p> <p><b>Price Mix:</b> Price—Meaning, Definition and Elements of price mix. Need, importance and objectives of pricing. Factors influencing pricing. Various Pricing Strategies.</p>	To impart to the students about Product mix and place mix techniques.
03	<b>Place Mix and Promotion Mix</b>	<p><b>Place</b> – Types of Distribution Channels , Advantages &amp; Limitations, factors affecting selection of channel.</p> <p><b>Promotion Mix</b> : Meaning, Elements of Promotion Mix,</p>	To impart to the students about place mix and promotion mix technique

		<p><b>Advertising</b> – Concept, Classification, functions, benefits of advertising, Economic, Social &amp; ethical issues, evaluating advertising effectiveness, Recent trends in advertising,</p> <p><b>Personal Selling</b> – concept and importance, theories of selling, process of personal selling. Selling Methods, Limitations of personal selling.</p> <p><b>Publicity:</b> Meaning, difference between advertising and publicity</p> <p><b>Sales Promotion:</b> Meaning, Objectives and importance. Tools or techniques, Evaluation of sales promotion.</p>	
04	<b>Public Relations, People Process and Physical Evidence</b>	<p><b>Public Relations—</b> Concept, History, Tools of public relations, Role of Public Relation Officer</p> <p><b>E- Marketing Promotion</b> – E mails, different types of Web advertising, blog spots, Online Sponsorships. Social Media Marketing,</p> <p><b>People, Process and Physical Evidence --</b> People as a part of Marketing Mix, customer interaction, customer service Process as part of the Marketing Mix, Physical evidence/ Packaging</p>	To impart the students to develop public relation skill in marketing

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
01	12	Guest Lecture, Presentation of the students and Lectures available on Youtube	Videos on Youtube	N.A	Students will understand various approaches to study marketing and also get sufficient knowledge about the factors which influencing marketing environment.

02	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will get in-depth knowledge about Product Mix and Price Mix
03	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will understand about Place Mix and Promotion Mix
04	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will aware about various tools of Public Relation and also e-marketing promotion

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination

## References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1.	Marketing Management	Arun Kumar, Rachana Sharma.	Atlantic Publishers & Distributors	New Delhi
2.	Marketing Management	Amar Jyoti	Gennext Publishers	New Delhi
3.	Marketing Management	Ranjan Saxena	Tata Mc-Graw Hill Publishers	New Delhi
4.	International Marketing Mix Management	Tobias Richter	Noyos	Berlin
5.	Marketing Management	Russell Winer	Pearson Education	Delhi
6.	Public Relation in Marketing Mix	Jordan Goldman,	NTC Business Books	New York
7.	Public Relation for Marketing Management	Frank Jefkins	The MACMILLAN Press Ltd	London
8.	Marketing Management	Prin. Dr. Babasaheb Sangale	Success Publications	Pune

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**Revised syllabus (2019 Pattern) for M. Com. Course (CBCS)**

**Semester: - I**

**Group – H (Advanced Marketing)**

**Subject Name - Advanced Marketing Special Paper II**

**Subject Title:- Consumer Behaviour**

**Course Code -: 118**

**Objectives of the course**

1. To help students understand the various models of Consumer Behaviour
2. To facilitate students 'awareness about consumer motivation & how to overcome motivational problem
3. To provide in-depth knowledge about consumer personality
4. To acquaint the students with the culture and Social Influences on Consumer Behaviour

Depth of the program – Detailed Knowledge

Objective of the Program

- d. To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing techniques.
- e. To develop students' independent logical thinking and facilitate personality development.
- f. To prepare the students for seeking suitable careers in the field of marketing.
  - d. To impart the knowledge about how to collect the data and interpret it.
  - e. To develop among students Communication and Analytical skills

<b>Unit No</b>	<b>Unit Title</b>	<b>Content</b>	<b>Skills to be developed</b>
01	Consumer Behavior	Meaning and Definition of Consumer Behaviour. Need and Advantages to Study Consumer Behaviour. Models of Consumer Behaviour—Economic, Learning, Sociological and Psychological Models and other relevant Models.	To identify various consumer behavioural traits and patterns.
02	Consumer Motivation.	Introduction , needs , objectives and Scope of Consumer Motivation. Overcoming Problems of Motivational Conflict. Defense Mechanism. Motive arousal, Motivational theories	To discern the motivational gaps among consumers and to use the right type of motivational techniques to fill / reduce the gap.
03	Consumer Personality: Learning Memory and Involvement	Consumer attitudes, beliefs, feelings and Behaviour Consumer Learning attitudes and components of learning Memory system , memory process, concept of involvement , dimensions of involvement	To identify the consumer personality, with regard to attitude, learning , memory and involvement
04	Cultural and Social Influences on Consumer Behaviour	Characteristics of Culture, values, sub cultures, cross cultural and multi-cultural influences on Consumer Behaviour. Social Class and Group influences on Consumer Behaviour with regard to money and other status symbols, conformity to group norms behavior and Influence, family life influences, standard of life and living Influences.	To specifically Identify differences in Consumer Behaviour based on Cultural and Social Influences.

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
01	12	Guest Lecture, Presentation of the students and Lectures available on Youtube	Videos on Youtube	N.A	Students will understand various approaches to study marketing and also get sufficient knowledge about the factors which influencing marketing environment.
02	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will get in-depth knowledge about Product Mix and Price Mix
03	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will understand about Place Mix and Promotion Mix
04	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will aware about various tools of Public Relation and also e-marketing promotion

## Method of Evaluation

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination

## References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Consumer Behaviour	Leon G Schiffman, Joseph Wisenblit and S. Ramesh Kumar	Pearson	USA
2	Consumer Behaviour – Insights from Indian Market	RamanujMajumdar	PHI Learning Pvt Ltd	New Delhi
3	Consumer Behaviour—The Indian	S. Ramesh Kumar	Pearson	USA

	<b>Context ( Concept and Cases)</b>			
<b>4</b>	<b>Consumer Behaviour</b>	<b>Rodger D Blackwell, Paul W Miniard, James F Engel and Zillur Rahman</b>	<b>Cengage Learning India Pvt Ltd</b>	<b>Delhi</b>
<b>5</b>	<b>International Marketing Mix Management</b>	<b>Tobias Richter</b>	<b>Noyos</b>	<b>Berlin</b>
<b>6</b>	<b>Marketing Management</b>	<b>Russell Winer</b>	<b>Pearson Education</b>	<b>Delhi</b>
<b>7</b>	<b>Public Relation in Marketing Mix</b>	<b>Jordan Goldman,</b>	<b>NTC Business Books</b>	<b>New York</b>
<b>8</b>	<b>Public Relation for Marketing Management</b>	<b>Frank Jefkins</b>	<b>The MACMILLAN Press Ltd</b>	<b>London</b>

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# SAVITRIBAI PHULE PUNE UNIVERSITY

Faculty of Commerce & Management

Master of Commerce (Semester III)

(Choice Based Credit System)

Revised Syllabus (2019 Pattern)

(w.e.f. Academic Year-2020-2021)

CORE COMPULSARY SUBJECT

Subject: BUSINESS FINANCE

Course Code: 301

Total Credits: 04

## Objectives:

1. To acquaint the students with corporate finance required for Indian Industries.
2. To make the students aware about the latest developments in the field of corporate finance.
3. To enable the students to understand the traditional theories of capitalization and dividend distribution practices.
4. To give detail exposure of working capital management practice of finance to students Skills to be developed:

## Skills to be developed:

1. To make aware about role of corporate finance and time value of money.
2. To expose them financial planning of firms and steps involved in it.
3. Students shall learn and acquire knowledge of long term and short term sources of finance available in India.
4. Students will acquire skills about how to go for working capital management of firm.

Unit No	Topic	No. of Lectures	Teaching Method	Course Outcome
1	<b>Business Finance</b> 1.1 Meaning, objectives, scope and importance 1.2 Time Value of Money: Need, Importance, Future value, Present value through discounted cash flow technique	10	Lecture, PPT, Group Discussion, Library Work, Assignment	Students will be able to understand the role and importance of corporate finance, and learn the calculation value of money.
2	<b>Strategic Financial Planning:</b> 2.1 Meaning - objectives, assumptions, 2.2 Steps in financial planning 2.3 Estimating financial requirements of firm - limitations of financial planning 2.4 Capitalization - over capitalization, undercapitalization, 2.5 Theories of capitalization, 2.6 Estimating financial needs and Sources of finance.	12	Lecture, PPT, Group Discussion, Library Work, Assignment,	Students will be able to understand the financial planning, theories of capitalization and estimation of finance need of firm.
3	<b>Corporate Securities and Sources of Long term Finance:</b> 3.1 Ownership securities - equity shares: characteristics, advantage and disadvantages, preference shares: characteristics, advantage and disadvantages, Companies Act (Amendment) 2013 3.2 Creditor's securities- debentures: characteristics, classification, procedure of issuing debentures and Bonds. 3.3 Company Deposit 3.4 The dividend decision: Background of dividend policy, Theories of dividend, Trend in dividend distribution in India, Measures of dividend policy, dividend yield and dividend Payout	14	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will be able to learn the sources of finance to be tapped for running business successfully.

4	<b>Short Term Finance and Working Capital Management</b> 4.1 Characteristics of short term finance – short term needs, 4.2 sources of short term finance, role of working capital, best management practices of working capital 4.3 Financing of working capital – trade creditors, bank credit, bank financing of account receivables, working capital - advantages and disadvantages.	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will be able to apply best practice in working capital management.
	<b>Total</b>	<b>48</b>		

### Recommended Books:

1. Aswath Damodaram: Corporate Finance: Theory and Practice, Wiley International
2. Bhole L.M. and Mahakud Jitendra, 'Financial Institutions and Markets', Tata McGraw-Hill Education, Delhi.
3. Kuchal S.C., 'Corporate Finance', Chaitanya Publishing House, Allahabad
4. Kulkarni P.V., 'Business Finance', Himalaya Publishing House
5. Prasana Chandra, 'Financial Management: Theory and Practice'
6. William L. Maggiuson, Scott B. Smart, Lawrence J. Gitman, 'Principles of corporate finance', Cengage Learning Private Limited, Delhi.

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## CORE COMPULSARY SUBJECT

**Subject: RESEARCH METHODOLOGY FOR BUSINESS**

**Course Code: 302**

**Total Credits: 04**

### 1. Objectives:

- a. To acquaint the students with the areas of Business Research Activities
- b. To enhance capabilities of students to conduct the research in the field of business and social sciences
- c. To enable students in developing the most appropriate methodology for their research studies
- d. To make them familiar with the art of using different research methods and techniques

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Introduction to Business Research</b>	Introduction. Definition, Objectives, Significance & Types of Research, Criteria of research, Features of a Good Research, Steps in Scientific Research Process, Research Methods versus Methodology <b>Ethics and Modern practices in Research:</b> Ethical Issues in Research – Plagiarism, Role of Computer in Research, Application of Statistical software-. Introduction to SPSS	<ol style="list-style-type: none"><li>i. To understand the nature, scope and Types of Research</li><li>ii. To understand the basics of good research and research process</li><li>iii. To understand various ethical issues and modern practices in research</li></ol>
2	<b>Formulation of the Research Problem, Development of the Research Hypotheses, Research Design &amp; Sampling</b>	<b>Research Problem:</b> Defining the Research Problem, Techniques involved in Defining Research Problem <b>Review of Literature</b> <b>Hypotheses:</b> Meaning, Definition & Types of Hypothesis, Formulation of the Hypotheses, Methods of testing Hypothesis <b>Research Design:</b> Meaning, Nature & Classification of Research Design, Need for Research Design, Phases/Steps in Research Design <b>Sampling:</b> Meaning & definition of Sampling, Key terms in Sampling, Types of Sampling: Probability &	<ol style="list-style-type: none"><li>i. To understand the concept and techniques of Research Problem</li><li>ii. To understand various aspects and methods of testing of Hypotheses</li><li>iii. To study the nature of Research design and Sampling</li></ol>

		Non-probability, Sampling Errors	
3	<b>Data Collection, Measurement &amp; Scaling, Processing of Data: Sources of Data Collection:</b>	<p><b>Primary Data:</b> Methods of Data Collection, Merits &amp; Demerits</p> <p><b>Secondary Data:</b> Internal &amp; External Sources of Data Collection</p> <p>Factors influencing choice of method of data collection</p> <p>Designing of a questionnaire – Meaning, types of questionnaire, Stages in questionnaire designing, Essentials of a good questionnaire ,Schedule</p> <p><b>Measurement &amp; Scaling:</b> Meaning &amp; Types of Measurement Scale, Classification of Scales</p> <p><b>Processing of Data:</b> Editing, Coding, Classification &amp; Tabulation.</p> <p><b>Analysis &amp; Interpretation of Data:</b> Types of Analysis- Univariate, Bivariate and Multivariate Analysis of Data</p>	<p>i. To gain the fundamental knowledge about Methods of Data Collection and formulating questionnaire</p> <p>ii. To understand the concept, type and classification of Measurement and Scaling</p> <p>iii. To understand the process of Analysis and Interpretation of data</p>
4	<b>Research Report and Mode of Citation &amp; Bibliography:</b>	<p><b>Research Report:</b> Importance of Report Writing, Types of Research Reports, Structure or Layout of Research Report</p> <p><b>Mode of Citation &amp; Bibliography:</b> Author, Date, System, Footnote or Endnote System, Use of Notes. Position of Notes, Citing for the first time, Subsequent Citing, List of Abbreviation used in Citation, Mode of preparing a Bibliography, Classification of Entries, Bibliography Entries compared with Footnotes, Examples of Bibliography Entries</p>	<p>i. To understand types and structure of Research Report</p> <p>ii. To study various aspects of mode of citation and bibliography</p>

### Teaching Methodology:

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Expected Outcome
1	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources ,students Seminar/Workshop , case study	Relevant You Tub Videos.PPT ,online Video, AV Application	Understanding of basic knowledge of Business Research, Research Process, ethical issues and modern practices in research.

2	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources ,students Seminar/Workshop , case study	Relevant You Tub Videos.PPT ,online Video, AV Application ,Short film show	Learning the formulation of Research Problem, Hypotheses, Research Design and Sampling
3	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources ,students Seminar/Workshop , case study	Relevant You Tub Videos.PPT ,online Video, AV Application	Gaining knowledge of Sources of Data Collection Measurement & Scaling, Processing of Data
4	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources ,students Seminar/Workshop , case study	Relevant You Tub Videos.PPT ,online Video, AV Application	Understanding the procedure of Research Report and mode of citation and bibliography

### References:

Sr. No	Title of Book	Author/s	Publication	Place
1	Research Methodology-Methods & Techniques	C. R. Kothari	New Age International Publishers	New Delhi
2	Research Methodology	Dipak Kumar Bhattacharyya	Excel Books	New Delhi
3	Research Methodology-Methods & Techniques	Anil Kumar Gupta	Value Education of India	New Delhi
4	Research Methodology-Concepts and Cases	Deepak Chawla & Neena Sondhi	Vikas Publishing House Pvt. Ltd	New Delhi
5	Research Methods	Ram Ahuja	Rawat Publications,	Jaipur
6	Methodology & Techniques of Social Research,	P. L. Bhandarkar, T. S. Wilkison & D. K. Laldas	Himalaya Publishing House	Mumbai
7	Legal Research and Writing Methods	Anwarul Yaqin	LexisNexis Butterworths	Nagpur
8	Business Research Methods,	Donald R. Cooper & Pamela S. Schindler	Tata McGraw- Hill Edition	New Delhi
9	Investigating the Social World-The Process and Practice of Research	Russell K. Schutt	Sage Publication	New Delhi
10	Business Research Methods	Alan Bryman & Emma Bell	Oxford University Press	New York

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## SPECIAL ELECTIVE SUBJECT - GROUP A (ADVANCED ACCOUNTING & TAXATION)

**Subject: ADVANCED AUDITING**

**Course Code: 303**

**Total Credits: 04**

### Objectives of the course

1. To enable the students to acquire knowledge of Auditing.
2. To Make appropriate application and uses of Auditing.

Depth of the program – Fundamental Knowledge

Unit No	Unit Title	Contents	Purpose Skills to be developed
1	<b>Introduction and Standard on Auditing</b>	Auditing concepts. Basic principles governing an audit - Audit Programme - Vouching - Verification and Valuation. Overview of Standard setting process - Role of Auditing and Assurance Standard and Auditing and Assurance Standard Board in India. Brief study of Standards on Auditing issued by the ICAI.	<ul style="list-style-type: none"><li>• Conceptual Understanding</li><li>• To provide basic knowledge of auditing</li><li>• Create awareness of Auditing and assurance standard</li></ul>
2	<b>Audit of Limited Companies</b>	Preliminaries to the audit of limited company - Audit of share capital transactions - Debentures and other transactions - Audit report with special reference to CARO 2003 - Profit and divisible profit - Dividends - Investigation.	<ul style="list-style-type: none"><li>• To provide basics of audit of limited company</li><li>• Conceptual Understanding</li></ul>
3.	<b>Audit Committee and Corporate Governance</b>	Corporate Governance: Introduction-Verification of Compliance of Corporate Governance. Audit Committee: Constitution - Powers of Audit Committee - CEO/CFO Certification to Board - Report on Corporate Governance.	<ul style="list-style-type: none"><li>• Conceptual Understanding of Corporate Governance</li><li>• Conceptual Understanding of Audit Committee</li></ul>
4.	<b>Audit under Computerized Information</b>	Special aspects of CIS Audit Environment - Need for review of internal control - Use of Computers for Audit purposes -	<ul style="list-style-type: none"><li>• Conceptual Understanding CIS</li><li>• Use of computer in audit program</li></ul>

<b>System (CIS) Environment</b>	Audit tools - Test packs - Computerized audit programme.	
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#### Teaching methodology

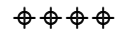
Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	PPT, Seminars, Presentations, test, practical approach of auditing	PPT /Online Video	Project can be given on Auditing Standard	To develop the knowledge about auditing standard.
2	12	PPT, Seminars, Presentations, test, practical approach of auditing	PPT /Online Video	Make a Power point presentation Printout of the same, paste in Journal.	To know about the practice of Company Auditor
3	12	Case study, PPT	PPT /Online Video	Project can be given on corporate governance audit	Develop knowledge about Corporate Governance and audit committee
4	12	PPT, Seminars, Presentations,	PPT /Online Video	Collection of information about audit under CIS	Use of computer in audit

#### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Written Tests, Case Study , Home Assignment 40%	Written Exam 60%	Application of GST and Personal Tax planning
Unit – II	Written Tests, Group Discussion, Visit Report, Home Assignment 40%	Written Exam 60%	Online auditing course
Unit – III	Written Tests, PPT , Visit report,Assignment40%	Written Exam 60%	NA
Unit – IV	Written Tests, Online Quiz, Home Assignment40%	Written Exam 60%	NA

**References:**

<b>Sr.No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Practical Auditing.	Spicer and Peglar	S. Chand Publication	Delhi
2	Contemporary Auditing	Kamal Gupta	S. Chand Publication	Delhi
3	Auditing	R.C. Saxena	S. Chand Publication	Delhi
4	Auditing	Basu	Pearson Publications	Delhi
5	Auditing: Principles	Jagadish Prasad	S. Chand Publication	Delhi
6	Fundamentals of Auditing	S.K.Basu	Pearson Publications	New Delhi
7	Modern Internal Auditing	Anil Roy Chaudhary	Kamal Law House	Kolkatta
8	A Handbook of Practical Auditing	B.N. Tondon, S.sudharaman, S.Sudhaprabhu	S.Chand publications	New Delhi



## SPECIAL ELECTIVE SUBJECT - GROUP A (ADVANCED ACCOUNTING & TAXATION)

**Subject: SPECIALIZED AUDITING**

**Course Code: 304**

**Total Credits: 04**

### Objectives of the Course

1. To understand the concept, need, importance, utility of Auditing in special field.
2. To develop the skills of students to face the modern world of Auditing.
3. To create awareness among the students to face the modern world of Auditing.

### Depth of Knowledge: Advanced Knowledge

Sr.No.	Title of the Unit	Content	Purpose skills to be developed
1	Audit Under Tax Laws	Tax Audit U/s 44 AB of Income Tax Act, 1961- Form 3 CA, 3 CB and 3 CD - Audit under GST Law - Steps to be taken by Auditor - Audit under GST Law – GST Audit Procedure	To understand need and importance of audit . To understand various concepts of Audit under GST
2	Internal Audit	Nature, Scope and Purpose of Internal Audit - Review of Internal Control - Areas of Internal Audit - Purchase, sale, cash, bank transactions - Internal Audit Report.	To understand need and importance of internal audit in an organisation
3	Audit of Banks	Salient features of enactments affecting Banks - Bank Audit, its approach Steps in Bank Audit - Checking of Assets and Liabilities - Scrutiny of Profit & Loss items - Audit Report of Banks - Long Form Audit Report	To know the need and importance of the audit in banks. To understand Process of audit in banks.
4	Audit of Co-operative Societies	Provisions of Maharashtra State Co-operative Societies Act 2013 and Multistate Co-operative Societies Act 2002. Special features of Audit of Cooperative Societies. Audit of) Co-operative Consumers Stores, 2) Salary earners Co-operative Society 3) Co-operative Housing Societies, 4) Urban Cooperative Credit Society. Audit Report of Co-operative Societies	To understand need and Importance of Auditing in co-operative sector.

### Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film shows and AV applications	Project	Expected Outcome
1	12	Guest lecture by eminent person from actual field work to get firsthand experience	PPT /Online Video	Project can be given on process of audit	Student must able to understand new concept of auditing
2	12	PPT Presentation on internal audit	PPT /Online Video	Make a Power point presentation Printout of the same, paste in Journal.	Student must able to understand process of internal audit
3	12	Visit to any bank for understanding concept of auditing in banks	PPT /Online Video	Project can be given on process of bank audit	Student must able to understand auditing in banks
4	12	Guest Lecture / visit to cooperative society	PPT /Online Video	Collection of information from internet/ actual field visit	Students should know the application of auditing in cooperative sector in country like India

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Written Tests, Case Study , Home Assignment 40%	Written Exam 60%	Application of GST and Personal Tax planning
Unit – II	Written Tests, Group Discussion, Visit Report, Home Assignment 40%	Written Exam 60%	Online auditing course
Unit – III	Written Tests, PPT , Visit report, Assignment 40%	Written Exam 60%	NA
Unit – IV	Written Tests, Online Quiz, Home Assignment 40%	Written Exam 60%	NA

### References:

Sr.No.	Title of the Book	Author/s	Publication	Place
1	Contemporary Auditing (Sixth Edition)	Kamal Gupta	Tata McGraw-Hill Publishing Co.	New Delhi
2	Auditing	R.C.Saxena Mrs. N. Padmalata	Himalaya publication	New Delhi
3	Fundamentals of Auditing	S.K.Basu	Pearson Publications	New Delhi
4	Modern Internal Auditing	Anil Roy Chaudhary	Kamal Law House	Kolkatta



5	A Handbook of Practical Auditing	B.N. Tondon, S.sudharaman, S.Sudhaprabhu	S.Chand publications	New Delhi
6	Guidance note on Tax Audit U/s 44 AB of the Income Tax Act.	The Institute of Chartered Accountants of India		New Delhi
7	GST Audit & Annual returns	Aditya Singhaniya	Taxman	New Delhi
8	GST Audit	CA Ashok Batra	Wolters Kluwer India pvt.Ltd	Pune

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## **SPECIAL ELECTIVE SUBJECT - GROUP B (Commercial Laws & Practices)**

**Subject: Laws Relating to International Business**

**Course Code: 305**

**Total Credits: 04**

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### **1. Preamble**

Since liberalization the global business is changing its nature. Globalized world has been witnessing enhancement in the business transactions with increasing interdependence and interactions among the states. Trans-border businesses are expected to be carried out with the objective of mutual benefits to the transacting nations. Manufacturing as well as service sector is expected to see sea change in its functioning. In such situation, the international business environment is supposed to be just and judicious. It should be encouraging as well as sound legal framework will be the need of the day. System should be capable of regulating the business transactions effectively and efficient dispute resolution mechanism should be in place. The present subject is aimed to sensitize the learners on all such legal aspects regulating international business and dispute resolution mechanism and make them equipped when they venture into international business.

### **2. Objectives of the Program:**

1. To equip the students with the knowledge of Contemporary Business World across the globe.
2. To acquaint the students with basic principles of International Trade, Business and Dispute resolution mechanism.
3. To make students aware about International Business Environment and about transnational corporations.
4. To study the impact of international business environment on foreign market operations and India's response to these developments.
5. To develop independent problem solving skills and sensitize the students regarding suitable careers in international business.

**Depth of the program:** Fundamental Knowledge, Principles and provisions of relevant policy, conventions and understanding of its applicability

**Lectures:** Each unit shall have equal weightage (i.e.12 Lectures)

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>International Law:</b>	<p><b>International Law:</b>  Meaning, Scope, Objectives, Nature and Development of International Law,  Sources and Evidences of International Law,  Codification of International Law,  India and International Law,  Distinction between Public International Law and Private International Law</p> <p><b>International Business:</b> Meaning, Objectives and Nature and Scope,  Drivers of International Business, Benefits of International Business,  Difference between Domestic and International Business, Globalisation in India and International Trade, Modes of entering into International markets.</p>	<ul style="list-style-type: none"> <li>• Acquainting students with the Concept of International Law, international business.</li> <li>• To understand the process of Globalisation in India and nature of international markets.</li> </ul>
2	<b>International Trade:</b>	<p><b>International Trade:</b>  Origin and nature of International Trade,  International Business Environment: Concept, Nature, Internal and external environment.  Economic Environment, Technological Environment, Political and legal Environment, Global Environment, Physical Environment.</p> <p><b>Trans-National Corporations:</b> Their rights, duties and Responsibilities under International Law</p> <p>Advantages and Disadvantages or Problems of International Trade,  Free Trade (<i>Laissez – faire</i> policy), Protectionism, Tariff barriers, Impact of tariff, Non-Tariff barriers (NTB), Balance of Payments in International Trade (Provisions of the GATT, 1994), Role of National and International</p>	<ul style="list-style-type: none"> <li>• Acquiring conceptual and practical aspect of International trade, nature of Transnational Corporations and role of National and International law in International Trade and relevant International conventions.</li> </ul>

		<p>Law in International Trade, Role of the United Nations in International Trade Law through the United Nations Commission for International Trade Law (UNCITRAL):</p> <ol style="list-style-type: none"> <li>(i) International Sale of Goods and related transactions</li> <li>(ii) International Transport of Goods</li> <li>(iii) Construction Contracts</li> <li>(iv) International Payments</li> </ol> <p>Brussels convention, 1968</p>	
3.	<b>International Business Law: Environmental issues and India's Foreign Trade</b>	<p><b>International Business Law: Environmental issues and India's Foreign Trade -</b></p> <ol style="list-style-type: none"> <li>(i) Environment Protection - Norms of International Environment Law – United Nations Conference – Stockholm, Nairobi Conference 1980 - Kyoto Protocol - Carbon Credit - Clean Development Mechanism - India's Response: Environment Impact Assessment Under Indian Environment Protection Act.</li> <li>(ii) India's Foreign Trade Policy: Objectives, Strategies and its Legal Dimensions, Provisions regarding Imports-Exports, Foreign Direct Investment (FDI) Policy in India, Export Promotion measures.</li> </ol>	<p>Acquiring conceptual and procedural knowledge of International Environmental law, Environment Impact Assessment, F.D.I. and Export Promotion measures, India's Foreign Trade Policy ,</p>
4	<b>International Commercial Dispute Resolution Mechanism:</b>	<p><b>International Commercial Dispute Resolution Mechanism:</b></p> <ul style="list-style-type: none"> <li>• International Commercial Arbitration &amp; Conciliation under UNCITRAL - Model Law</li> <li>• International Court of Justice and its Jurisdiction</li> <li>• Enforcement of Foreign Awards in India under UNCITRAL - Model Law</li> </ul>	<p>Identifying the Concept and Significance of International Commercial Dispute Resolution Mechanism:</p>

	<ul style="list-style-type: none"> <li>• International Court of Justice and its Jurisdiction</li> <li>• Enforcement of Foreign Awards in India.</li> </ul>	
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**\*All Acts / Rules / Conventions are to be studied with recent amendments**

**Method of Evaluation:**

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Evaluation (Written Test etc.)	Written Examination	Diploma in International Law
Unit – II	Continuous Evaluation [Class Presentation (PPT) etc.]	Written Examination	Diploma in International Business
Unit – III	Continuous Evaluation (Seminar/Workshops etc)	Written Examination	Diploma in Import and Export
Unit – IV	Continuous Evaluation (Viva-Voce etc.)	Written Examination	Online Courses of International Commercial Dispute Resolution, MOOCS etc

**References:**

- 1) Arun kumar Jain, “International Business - Competing in the Global Market”, Place-Charles Hill, Tata McGraw Hill, New Delhi.
- 2) M.L.Jhingan, “International Economics”, Vrinda Publications, Delhi.
- 3) Malcolm N. Shaw, “International Law”, Cambridge University Press, New Delhi, (2007).
- 4) V. K. Bhalla, S. Shiva Ramu, “International Business, Environment and Management”, Anmol Publication Pvt. Ltd., New Delhi. (2010).
- 5) Dr. Ram Singh, “International trade operations”, Excel Books, New Delhi, (2009).
- 6) Francis Cherunilam, “International Trade and Export Management”, Himalaya Publishing House, Mumbai, (2000).
- 7) Dr. S. P. Gupta, “International Law and Human Rights”, Allahabad Law Agency, Haryana, (2009).
- 8) Dr. S. R. Myneni, “International Trade Law”, Allahabad Law Agency, Haryana (2008).
- 9) Indira Carr, “International Trade Law”, Routledge, Abingdon, Oxon, (2014).
- 10) Macmillan, “International Banking Legal & Regulatory Aspects”, Macmillan India Ltd., Daryaganj, New Delhi, (2007).
- 11) Judith Evans, “Law of International Trade”, Old Baile Press, London, (2001).

- 12) Rajendra P. Maheshwari, “International Business”, International Book House Pvt. Ltd., New Delhi, (2011).
- 13) Dr. S. K. Kapoor, “International Law and Human Rights”, Central Law Agency, Allhabad, (2004).
- 14) K. C. Johsi, “International Law & Human Rights”, Eastern Book Company, Lucknow, (2006).
- 15) Study Material, Professional Programme on International Business-Laws and Practices (Module-3)- Website:www.icsi.edu

**Suggested Web references:**

1. Larry Dimatteo,”International Business Laws and Legal Environment”, Tailer and Francis,Routledge,(2016) (<https://www.ebooks.com/en-ag/95642011/international-business-law-and-the-legal-environment/larry-a-dimatteo/>)

Sr. no	PPTs
1	Ref.: <a href="https://www.icsi.edu/media/webmodules/publications/9.5%20International%20Business.pdf">https://www.icsi.edu/media/webmodules/publications/9.5%20International%20Business.pdf</a>
2	<a href="https://www.slideshare.net/anuj4535/international-bussiness-law">h bDimatteo,”International Business Law and Legal Envtps://www.slideshare.net/anuj4535/international-bussiness-law</a>
3	<a href="https://www.slideshare.net/bearister2746/basics-of-international-business-law">https://www.slideshare.net/bearister2746/basics-of-international-business-law</a>
4	<a href="https://www.slideserve.com/rocio/international-business-law">https://www.slideserve.com/rocio/international-business-law</a>

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**SPECIAL ELECTIVE SUBJECT - GROUP B (Commercial Laws & Practices)**

**Subject: WTO – Norms & Practices**

**Course Code: 306**

**Total Credits: 04**

**Preamble:**

Globalisation has made remarkable change in the Global business Scenario. The legal system regulating international business transactions are also expanding. World Trade organization and General Agreement Tariffs and Trade (GATT) are instrumental in regulating the global business transactions. Effective Disputes settlement mechanism ensures the parties adequate legal protection required in such transactions. Hence understanding the structure and functioning of WTO and GATT becomes imperative for the rising generations of the global business world.

**Objectives of the Program:** To understand purpose and scope of GATT & WTO and to study their legal framework and disputes settlement mechanism with basic insight into substantive law of these institutions.

**Depth of the program:** Fundamental Knowledge, Principles and provisions of relevant policy, conventions and understanding of its applicability

**Lectures:** Each unit shall have equal weightage (i.e.12 Lectures)

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
1	<b>Introduction to WTO: Historical Background</b>	<b>Introduction to WTO: Historical Background</b> International Economic Relations before and after Second World War, Havana charter for International Trade Organizations (ITO), GATT to WTO – A Historical Overview: Protectionism, Formation of GATT, Objectives and Relevance of GATT at present, GATT Tariff Negotiations (from Geneva to Doha and beyond)	<ul style="list-style-type: none"><li>• Acquainting students with the Concept of International Law, international business.</li><li>• To understand the process of Globalisation in India and nature of international markets.</li></ul>
2	<b>World Trade</b>	<b>World Trade Organization (WTO):</b>	Acquiring conceptual and practical

	<b>Organization (WTO):</b>	Basic Principles of the WTO Trading System, the Objectives, Functions and structure of WTO – Decision making - The WTO Agreement – Membership, Accession and withdrawals, current status of individual accession, WTO and Global Economic Policy making, Achievements of WTO.	aspect of International trade, nature of Transnational Corporations and role of National and International law in International Trade and relevant International convention.
3.	<b>Legal Framework of General Agreement on Tariffs and Trade (GATT) 1994:</b>	<b>Legal Framework of General Agreement on Tariffs and Trade (GATT) 1994:</b> Preamble – General - Most favored Nation Treatment – (Art. – I) Schedules of concessions (Art. – II) National Treatment on International Taxation and Regulations (Art. – III), Special provisions relating to cinematograph films (Art.-IV), Freedom of Transit (Art.-V) Anti-dumping Agreement (Art. – VI) WTO Agreement on Agriculture – WTO Agreement on Textile and Clothing – WTO General Agreement on Trade in Service (GATS) – (i) WTO – International Trade and Human Rights – Trade and Environmental issues in the WTO – Developing Countries and WTO - India’s Responses to WTO	Acquiring conceptual and procedural knowledge of International Environmental law, Environment Impact Assessment, F.D.I. and Export Promotion measures, India’s Foreign Trade Policy ,
4	<b>The WTO Disputes Settlement Mechanism:</b>	<b>The WTO Disputes Settlement Mechanism:</b> Elements of disputes settlement - Dispute Settlement Body - Procedure of disputes settlement - Appeals - Good offices, conciliation and mediation - The establishment of panels - Terms of reference of Panels, composition, functions and responsibility of panels – Adoption of Panel Reports – Implementation of Rulings.	To understand the Concept of Dispute Settlement Body along with its Procedure for disputes settlement and Implementation of Rulings.



**\*All Acts / Rules / Conventions are to be studied with recent amendments**

**Method of Evaluation:**

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit – I	Continuous Evaluation (Written Test etc.)	Written Examination	Diploma in International institutions in International Trade
Unit – II	Continuous Evaluation [Class Presentation (PPT)etc.]	Written Examination	Diploma in Regulatory Framework of World Trade Organisation.
Unit – III	Continuous Evaluation (Seminar/Workshops etc)	Written Examination	Diploma in International Trade and Human Rights
Unit – IV	Continuous Evaluation (Viva-Voce etc.)	Written Examination	Online Course on General Agreements on Trade and Services,MOOCS etc

**References:**

- 1) R. K. Rangachari, WTO, Its Benefits, Misunderstandings, Agreements, Policies for the developing countries, Palak Publication, Mumbai.
- 2) Francis Cherunilam, International Trade and export Management, Himalaya Publishing House.
- 3) Autar Krishen Kaul, “Guide to the WTO & GATT”, Satyam Law International, New Delhi, 4<sup>th</sup> edition (2013).
- 4) Hema Garg, “WTO and Regionalism in World Trade”, New Century Publications, New Delhi, (2004)
- 5) Arun Goyal, Noor Mohd, “WTO in the New Millennium”, Academy of Business Studies, New Delhi.
- 6) K. D. Raja, “WTO Agreement on Anti-Dumping A GATT / WTO and Indian Jurisprudence”, Kluwer Law International, New Delhi. (2008).
- 7) Jayanta Bagchi, “World Trade Organisation – An Indian Perspective” Eastern Law House, New Delhi (2008).
- 8) Vibha Mathur, “WTO and India” New Century Publications, New Delhi, (2005).
- 9) Amrita Shahabadi, “World Trade Organisation”, APH Publishing Corporation, New Delhi, (2007)
- 10) Anne O. Krueger, “The WTO – as an International Organisation”, Oxford University Press, New Delhi (1998).

- 11) T. K. Bhaumik, “The WTO – A Discordant Orchestra” Sage Publications, New Delhi, (2006)
- 12) Bernard Hoekman, Aaditya Mattoo & Philip English, “Development, Trade, and the WTO” The World Bank, Washington, D.C., Atlantic Publishers & Distributors, New Delhi (2005)
- 13) Dr. S. R. Myneni, “World Trade Organisation”, Asia Law House, Hyderabad (2012).
- 14) Palle Krishna Rao, “WTO Text & Cases”, Excel Books, New Delhi (2005).
- 15) Peter Van Den Bossche, “The Law and Policy of the WTO: Text, Cases and Materials”, Cambridge University Press, 4th Edn. (2018)
- 16) Michael Trebilcock, Robert Howse, etc., “The Regulation of International Trade” Routledge, (2003)
- 17) Daniel Bethlehem, Donald McRae etc. (Editors), “The Oxford Handbook of International Law”, Oxford University Press, U.K., (2009)

**Suggested web references:**

**Articles/Books:**

1. Overview of the WTO Agreements, (www.meti.go.jp > report > downloadfiles > 2010WTO)
2. The World Trade Organization 20 Years On: Global Governance by Judiciary, (Article by [Robert Howse](#) ),  
*European Journal of International Law*, Volume 27, Issue 1, February 2016, Pages 9–77, <https://doi.org/10.1093/ejil/chw011>
3. <https://fas.org/sgp/crs/row/R45417.pdf> (Book: World Trade Organization: Overview and Future Direction Updated December 6, 2019)
4. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=86068](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=86068) (“The Future of the WTO” by [Kym Anderson](#) )

Sr. no	PPTs
1	Ref.: <a href="https://www.icsi.edu/media/webmodules/publications/9.5%20International%20Business.pdf">https://www.icsi.edu/media/webmodules/publications/9.5%20International%20Business.pdf</a>
2	<a href="https://www.slideshare.net/amnindersekhon/world-trade-organisation-63725377">https://www.slideshare.net/amnindersekhon/world-trade-organisation-63725377</a>
3	<a href="https://www.slideshare.net/jyothiish/world-trade-organisation-55507960">https://www.slideshare.net/jyothiish/world-trade-organisation-55507960</a>
4	<a href="https://slideplayer.com/slide/4486931/">https://slideplayer.com/slide/4486931/</a> (GATT Law and WTO: Basic Principles)

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## SPECIAL ELECTIVE SUBJECT - GROUP C (Advanced Cost Accounting & Cost system)

**Subject: Cost Audit**

**Course Code: 307**

**Total Credits: 04**

**Level of Knowledge – Advanced**

### Objectives:

1. To provide adequate knowledge to the students on Cost Audit Practices.
2. To acquaint students to understand the role and responsibilities of Cost Auditor
3. To familiarise the students how Cost Audit Report is prepared.

Unit No	Unit Title	Contents	Skill to be developed
1	<b>Introduction To Cost Audit</b>	<b>Cost Audit</b> <ul style="list-style-type: none"><li>• Meaning, Definitions, Objectives, Scope, applicability, Advantages &amp; Limitations of Cost Audit</li><li>• Differences between Financial Audit and Cost Audit.</li><li>• Concepts of Efficiency Audit, Proprietary Audit, Social Audit &amp; System Audit.</li><li>• Study Of Companies (Cost Records And Audit) Audit Rules As Per The Latest Amendments</li></ul>	In depth Understanding of basic concepts of cost audit and its applicability in various areas
2.	<b>Cost Auditor</b>	<b>Cost Auditor</b> <ul style="list-style-type: none"><li>• Qualifications, Disqualifications, Appointment, Remuneration ,Removal, Rights, Duties, Responsibilities &amp; Liabilities of Cost Auditor under Company Act 2013, Cost &amp; Works Accountants Act. 1959 &amp; other Statues as amended from time to time.</li><li>• Status and Relationship of Cost Auditor with financial Auditor</li></ul>	In Depth Knowledge On Rights ,Duties, Responsibilities And Liabilities Of Cost Auditor
3.	<b>Cost Audit – Planning &amp; Execution</b>	<b>Cost Audit – Planning &amp; Execution</b> <ol style="list-style-type: none"><li>a. <b>Planning of Cost audit:</b> Familiarization with the Industry, The production process, system &amp; procedure, List of Records Preparation of the Cost Audit Programme,</li><li>b. <b>Execution of Cost audit</b> Verification of Cost Records, Evaluation of Internal Control</li></ol>	Knowledge to Conduct The Cost Audit Traditionally And Electronically

		System, Audit Notes, Working Papers, Cost Audit in (EDP) Electronic Data Processing Environment & Challenges before Cost Auditor in EDP Environment.	
4.	<b>Cost Audit Report</b>	<b>Cost Audit Report</b> <ul style="list-style-type: none"> <li>Detailed Contents of the Report, Distinction between 'Notes' &amp; 'Qualification' in the Cost Audit Report, Auditor's Observation &amp; Conclusions.</li> <li>Preparation &amp; Submission of Cost Audit Report</li> <li>Extensible Reporting Language (XBRL) &amp; its Salient features.</li> </ul>	Knowledge On Preparation Of Cost Audit Report.

### Teaching Methodology

Sr No	No Of Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1.	12	PPT	You tube lectures.	Group discussion	Understand importance of cost audit
2.	12	Guest Lecture by professionals.		PPT	Understand the role and responsibility of cost auditor
3.	12	Group discussion		Visit to Costing Department or visit to Cost Auditor.	Able to prepare plan for cost audit
4.	12	Study Published cost audit reports of various companies. Available on Google.			Able to understand how to draft Cost Audit Report.

### Methods of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested AD-On Course
<b>For all Units</b>	Multiple Choice	SPPU	Visit to industries and make a report on

	Questions, Written Test, Internal Examination, PPT based presentation group discussion assignment. Open book test poster presentations.		the visit. Chapter 4
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### References

Sr. No	Title of the Book	Author	Publisher	Place
1	Cost and Management audit hand Book	Study Material ICAI Kolkatta	Institute Of Cost Accountant Of India Kolkata	Kolkata
2	Cost and management Audit	Abhishek Gautamchand Jain	Himalaya Publishing House	New Delhi
3	Cost Audit Practice manual	CA Shrinivas Anand G.	Taxman's	New Delhi
4	Cost Audit and Management audit	Suxena And Vashist	Sultan Chand	New Delhi
5	Cost Audit and Management audit	A.R.Ramanathan	Tata McGraw-Hill	Noida
6	Cost audit	J.P. Berry	The Institute of Chartered Accountant of India	New Delhi
9.	Efficiency auditing	Walley	Springer Nature Palgrave Macmillan	UK United Kingdom

### Web References

Sr. No	Lectures	Films	PPTs	Articles	Others
			You Tube lecture videos are available on all these		<a href="https://icmai.in">https://icmai.in</a> <a href="http://www.globalcma.in">www.globalcma.in</a>

	<p>Guest Lectures by Field Persons such as working executives from industries and of Practicing Cost and Management Accountants.</p>	<p>You Tube films showing working of different industries. Discovery Turbo Channel</p>	<p>topics.</p>	<p>Articles from the Professional Journal like The Management Accountant, The Chartered Accountant, The Chartered Secretary</p>	
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**Note:** 100 % of marks are allotted to Theory only.

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## SPECIAL ELECTIVE SUBJECT - GROUP C (Advanced Cost Accounting & Cost system)

**Subject: Management Audit**

**Course Code: 308**

**Total Credits: 04**

### Objectives:

1. To acquaint the students with the knowledge of the techniques and methods of planning and execution of Management Audit.
2. To familiarise the students with the knowledge of corporate image.
3. To provide knowledge to students on operational audit.

Unit No	Unit Title	Contents	Skill to developed
1	<b>Management Audit</b>	<ul style="list-style-type: none"><li>• Introduction – Definitions - Concept &amp; Essentials of Management Audit</li><li>• Difference between Financial Audit &amp; Management Audit.</li><li>• Objectives, Importance &amp; Scope of Management Audit.</li><li>• Benefits of Management Audit</li><li>• Relationship with different types of Audits</li><li>• Conflicts between Profit versus Value Maximisation Principle</li><li>• Role of Management Accountant in Decision Making</li></ul>	In depth Understanding of fundamentals of Management audit.
2.	<b>Procedure of Management Audit</b>	<ul style="list-style-type: none"><li>• Preparation of conducting Management Audit ,Management Audit programme,</li><li>• Reporting under Management Audit</li></ul>	Knowledge on Management Audit procedures
3	<b>Areas of Management Audit</b>	<ul style="list-style-type: none"><li>• Corporate Service Audit,</li><li>• Corporate Development Audit</li><li>• Social Cost-Benefit analysis</li><li>• Evaluation of.....<ol style="list-style-type: none"><li>1. Consumer Services.</li><li>2. Research and Development.</li><li>3. Corporate culture.</li><li>4. Human Resource Development.</li></ol></li></ul>	Knowledge on different areas of Management audit
4	<b>Operational Audit</b>	<ul style="list-style-type: none"><li>• Meaning &amp; Concept of Operational Audit. Objectives, plan for Operational Audit.</li><li>• Program for Operational Audit. Differences between Operational Audit and</li></ul>	Detailed Understanding of operational Audit

		Management Audit <ul style="list-style-type: none"> <li>• Approaches, Methods, Evaluation, Recommendations and Reporting under Operational Audit.</li> </ul>	
5	<b>Evaluation of Corporate Image.</b>	<ul style="list-style-type: none"> <li>• Meaning &amp; Concept of Corporate Image.</li> <li>• Sources of Corporate Image</li> <li>• Evaluation of Corporate image.</li> <li>• Impact of Corporate image on Business</li> </ul>	In depth Understanding of corporate Image.

### Teaching Methodology

Unit	No Of Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1.	12	PPT	You tube lectures	PPT	Understanding importance of management Audit
2.	08	Guest Lecture By Professionals.		Group Discussion	Understanding The Procedure Of Management Audit
3.	10	Group Discussion		Case Studies	Understanding Corporate Image In Management Audit
4.	10	Study Published Management Audit Reports Of Various Companies. Available On Google.		Assignment	Able To Understand Different Areas Of Management Audit
5.	08	Study Of Operational Audit In Depth From CMA Cost And Management Audit.		Poster Presentation	Help To Understand Operational Audit.

### Methods of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested AD-On Course
<b>For all units</b>	Multiple Choice Questions, Written Test, Internal Examination, PPT based presentation etc.	SPPU	Visit to industries and make a report on the visit.



## References

Sr. No	Title of the Book	Author	Publisher	Place
1	Cost And Management Audit	Abhishek Gautamchand Jain	Himalaya Publishing House	New Delhi
2	Cost Audit Practice Manual	CA Shrinivas Anand G.	Taxman's	New Delhi
3	Cost Audit And Management Audit	Suxena And Vashist	Sultan Chand & Company	New Delhi
4	Cost Audit And Management Audit	A.R.Ramanathan	Tata McGraw-Hill	Noida
5	Operational Auditing: Principles And Techniques For A Changing World (Internal Audit And IT Audit Book)	Herman Merdoc	Kindle Publication	Amazon
6	Cost and Management audit hand Book	Study material ICAI Kolkatta	Institute of Cost Accountant of India Kolkatta	Kolkatta
7.	The Corporate Image: Strategies of Effective Identity Programmes	Nicholas	Kogan Page; 2nd edition	Amazon

**Note: 100% Marks are assigned to theory only**

Web References Lectures	Films	PPTs	Articles	Others
Lectures by field persons such as working executives from industries and practicing Cost & Management Accountants	You Tube films showing working of different industries. Discovery Turbo Channel	You tube lectures on all topics	Articles from the professional Journal like The Management Accountant, The Chartered Accountant, The Chartered Secretary	<a href="https://icmai.in">https://icmai.in</a> www.globalcma.in

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**SPECIAL ELECTIVE SUBJECT - Group D (Co-operation & Rural Development)****Subject: Co-operative Credit System****Course Code: 309****Total Credits: 04****Objectives of the course**

- a. To acquaint and create awareness among the student with the concept of co-operative credit system
- b. To study the organizational set-up of co-operatives system
- c. To create awareness about the problems of rural credit system

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Skills to be developed</b>
1	<b>Introduction to Rural Credit System</b>	1.1 Definition of Credit 1.2 Importance of Agricultural credit 1.3 Features of credit 1.4 Types of Credit 1.4.1 Short Term credit 1.4.2 Medium Term Credit 1.4.3 Long Term Credit 1.5 Need of Institutional Credit & limitations of Credit System.	1. To understand the meaning and importance of agriculture credit 2. To know the types of credit 3. To understand the need for credit institutions 4. To know the limitations of institutional credit system
2	<b>Structure of Credit Co-operatives</b>	2.1 Federal Credit Co-operatives 2.2 Integration of Short Term, Medium Term and Long Term Credit, its advantages and disadvantages	1. To understand the structure of co-op. credit system. 2. To understand the advantages & disadvantages of integration of short term, medium term & long term credit

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Skills to be developed</b>
3.	<b>Agricultural &amp; non- Agricultural Co-operatives</b>	1.1 Functioning of Agricultural Credit Co-operatives- PACS 1.2 District Central Co-operative Bank-DCC Banks	1. To create awareness among the students about agricultural & non agricultural co-operative societies functioning in India

		1.3 State Co-operative Banks 1.4 Working of Urban Co-operative societies 1.5 Salary Earners Co-operative Credit Societies 1.6 Other Non Agricultural Credit Societies	
4.	<b>Rural Co-operative Banking System</b>	4.1 Need and objectives of rural co-operative banks 4.2 Formations 4.3 Functions of rural co-operative banks 4.4 Sources of finance 4.5 Performance of rural co-operative banks 4.6 Problems and prospects of rural co-operative banks	1. To understand the need & objectives of rural banking system. 2. To know the procedure of formation of co-op. banks 3. To understand the functions of co-op. banking sector

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Class room discussion	----	-----	Conceptual clearance about agricultural credit and its need
2	12	Class room discution and group discussion	-----	Report on the group discussion	Better understanding about short term, medium term and long term agricultural credit
3	12	Visit to Agricultural and non-agricultural credit societies.	-----	Report on the visit made	Enhanced understanding about conditions of agricultural and non-agricultural credit societies
4	12	Class room lecture, discussion and visit rural co-operative bank	-----	Report on the visit made	Better understanding about rural co-operative bank

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## SPECIAL ELECTIVE SUBJECT - Group D (Co-operation & Rural Development)

**Subject: Co-operative Banking System**

**Course Code: 310**

**Total Credits: 04**

### Objectives:

1. To understand the operational process of disbursement of loans and advances
2. To understand the supervisory role of Maharashtra State Co-operative Bank
3. To make student familiar with the role of NABARD and RBI
4. To make them aware of the cooperative movement and inculcate co-operational attitude among them

Unit No.	Unit Title	Content	Purpose/Skills to be developed
1	<b>Advancing of Credit</b>	<b>Need of advances:</b> 1.1 Criteria for advances 1.2 Procedures, Types and Disbursement of Crop Loan system, Kisan Card, etc. 1.3 Advances to priority sector schemes 1.4 Overdues follow up 1.5 NPA Concept and norms	<ol style="list-style-type: none"><li>1. To understand the need of advances in co-operative sector.</li><li>2. To understand the criteria for advancing the loans</li><li>3. Disbursement of crop loan, kisan card etc.</li><li>4. To understand the process of advancing credit to priority sector.</li><li>5. To understand the concept of NPA in relation to agriculture sector.</li><li>6. To study the system of recovery of NPA</li></ol>
2	<b>Maharashtra State Co-operative Bank (Apex Bank)</b>	<b>Maharashtra State Cooperative Bank:</b> 2.1 Objectives of M.S. Cooperative Bank 2.2 Functions and Working 2.3 Role of M.S. Cooperative Bank in the development of State Co-operative movement 2.4 Progress, Problems and Prospects of M.S. Cooperative Bank	<ol style="list-style-type: none"><li>1. To understand objectives &amp; functions of M.S. Co-operative bank.</li><li>2. To study the role of M.S. Co-operative bank in development of state co-operative movement.</li><li>3. To understand the problems in functioning of M.S. Co-op. Bank</li><li>4. To study future prospectus &amp; reinforcement of MS Co-op. Bank</li></ol>

<b>3</b>	<b>National Bank for Agricultural and Rural Development (NABARD)</b>	<b>National Bank for Agricultural and Rural Development (NABARD)</b> 3.1 Historical background, Organization and Functions 3.2 Role of NABARD in Agricultural finance and rural Development in India. 3.3 Procedure and norms of finance and refinance 3.4 Performance and evaluation of NABARD 3.5 Need to enhance the scope of NABARD	<ol style="list-style-type: none"> <li>To study objectives, functions of NABARD</li> <li>To understand organizational set up of NABARD</li> <li>To evaluate the role of NABARD in agricultural finance &amp; rural development in India</li> <li>To understand the finance &amp; refinance activities of NABARD</li> </ol>
<b>4</b>	<b>Institutional Support to Co-operative Credit</b>	Institutional Support to Co-operative Credit 4.1 Role of RBI in Co-operative credit 4.2 RBI funding to Co-operative credit 4.3 National Federation of State Co-operative Banks 4.4 National Co-operative Agriculture & Rural Development Banks Federation Ltd.	<ol style="list-style-type: none"> <li>To understand the role of RBI in co-op.credit</li> <li>To understand the role of national federation of state co-op. Banks</li> <li>To understand the role of National federation of agricultural &amp; rural development banks</li> </ol>

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Group discussion	--	Report on group discussion	Awareness & understanding about advances
2	12	Class room discussion	---	-----	Awareness & understanding about M.S.Co-operative banks functioning, role, and its problems
3	12	Class room presentations & group discussion	AV available on Internet	Report on group discussion, presentations and visuals	Clear concept of <b>NABARD</b>
4	12	Group discussion and class room presentations	-----	Report on group discussion, presentations	Awareness about RBI role for support of state co-operative banks

### Recommended Books:-

1. Krishnaswami O.R.- Co-operative audit, National Council for Co-operative training, New Delhi.
2. N.L.Ghorpade- Co-operation and Rural Development
3. Dutt and Somsundaram- Indian Economy
4. Samiuddin- Co-operative farming & its impact on Rural Industrialization, Aligarh
5. Samiuddin- Scope & Problems of Co-operative in India, Alighr
6. Kamat G.S- New Dimension pf Co-operative Management, Himalaya Publishing
7. Khandelwal M.C. – Co-operative Audit, Patiyala Pustak Bhandar, Jaipur
8. S.L.Goyal- Principles, Problems, and Prospects of co-operative administration, Sterling publishing pvt.Ltd,Jalandhar
9. K.K.Taimani- Co-operative organizations and Management
10. G.S.Kamat- New dimentions of Co-operative Management
11. G.S.Kamat- Cases in co-operative Management

### **Journals:**

1. Journal of Rural Development, Hyderabad (Rajendranagar)
2. Journal of Co-operative Perspective, Pune.
3. The Indian Journal of Commerce, New Delhi.
4. Journal of Sahakari Maharashtra, Pune



## SPECIAL ELECTIVE SUBJECT - GROUP E (BUSINESS PRACTICES & ENVIRONMENT)

Subject: Entrepreneurial Behavior

Course Code: 311

Total Credits: 04

### Objectives of the Course:

- a) To develop understanding of entrepreneurial environment amongst the students.
- b) To motivate students to be in the modern values of entrepreneurship.
- c) To motivate students to enhance their entrepreneurship competencies.

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Entrepreneurship and Entrepreneurship Training</b>	<b>Entrepreneurship and Entrepreneurship Training:</b> Meaning and features of Entrepreneurship, Entrepreneurial Qualities, Assessing Potential Entrepreneurship- Tools and Techniques Used For Behavioral Tests. <b>Entrepreneurship Training:</b> Objectives, Needs and Significance, Training Components, Training Methodologies.	<ol style="list-style-type: none"><li>i. To understand what is entrepreneurship and what are its features, qualities.</li><li>ii. To know the tools and techniques in behavioural test.</li><li>iii. To study the objectives, requirements to become entrepreneur and the types of training methodologies to become successful entrepreneur.</li></ol>
2	<b>Development of Achievement Motivation</b>	<b>Development of Achievement Motivation:</b> Sources of Development of Achievement- Skills required for effective Entrepreneurship Development- Entrepreneurship Problems- Beliefs and Attitude- Limitations.	<ol style="list-style-type: none"><li>i. To understand the sources of development of achievement and what are the skills required to become effective entrepreneur.</li><li>ii. To study the problems faces by the entrepreneur with its beliefs and attitudes along with its limitations.</li></ol>
3	<b>Promoting Entrepreneurship</b>	<b>Promoting Entrepreneurship:</b> Need and Importance of Trainer- Motivator, Skills and Qualifications of Trainer. Motivator- Need and Significance to Boost Training Support.	<ol style="list-style-type: none"><li>i. To understand the meaning of promoting entrepreneurship.</li><li>ii. To study the need and importance of trainer, his qualifications.</li><li>iii. To understand the concept of boost training support with its components to enhance the effectiveness in entrepreneurship.</li></ol>

4	<b>Business Opportunity Guidance</b>	<b>Business Opportunity Guidance:</b> Importance and Relevance of Business Opportunity- Process of identifying and assessing business opportunity- Selection of business opportunity- new trends in the service sector- scope for entrepreneurship in the service sector- market survey tools and techniques.	i. To understand what is opportunity in business, how to identify the opportunity and how to achieve the goals and objectives. ii. To understand the importance of business opportunity process from its origin like from identification of business opportunity, its assessment, execution. iii. To study the scope and opportunities of entrepreneurship in specifically service sector with the help of market survey and the requirement of the society in availing various types of services.
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#### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Pre reading, Class discussion, examples from real life through newspapers that how to become successful entrepreneur.	You Tube Video and PPTs on the explanation of requirements to become entrepreneur and entrepreneurship and its training.	Small projects to be assigned to students in individual or group to practically understand to study entrepreneur and entrepreneurship and its training.	Understanding of basic knowledge of entrepreneur and entrepreneurship with entrepreneurship training with the help of real life examples.
2	12	Study on the literature, newspapers, case studies of development of motivation, to study the required skills with problems and limitations of entrepreneurship with examples.	You Tube Video on development of motivation of entrepreneurship with case studies.	Project Report on the motivation in entrepreneurship, skills required, problems faced by the entrepreneurship, shortcomings, environmental factors etc.	Understanding of knowledge on development in entrepreneurship, problems faced by them and to develop a roadmap that how to overcome on these problems to become successful entrepreneur.
3	12	Guest Lectures on Promoting entrepreneurship to motivate the students.	You Tube Videos and PPTs on promoting entrepreneurship, skills of trainer etc.	Detailed Project Report on needs, importance of trainer and boost training support to enhance entrepreneurship.	Developing understanding in students about the need and importance of trainer in entrepreneurship to develop



					qualities and capacities to face contingencies in upcoming entrepreneurs.
4	12	Study on various Government schemes on the creation and development of new entrepreneurs in the country.	PPT Presentations and You Tube videos on workings various Government Schemes, facilities, training to the entrepreneurs.	Projects assigned to the students to study of various Government entrepreneurship schemes by visiting District Industrial Center (DIC), MITCON.	Practical understanding to students to get knowledge on the various schemes run by the Government to the new, young entrepreneurs in various sectors by providing various facilities like training, funding, subsidy, plant visit, project finance their procedure of execution, importance or viability of the project.

#### References:-

1. S.S. Nadkarni- Developing New Entrepreneurs –EDII Ahmedabad.
2. N. P. Singh- Entrepreneurs V/s Entrepreneurship- Asian Society for ED.
3. Desi Vasant- Dynamics of Entrepreneurial Development and Management- HPH.
4. Khairka S.S. - Entrepreneurial Development- S. Chand & Co. New Delhi.
5. Moharana Drant Desai- Entrepreneurship Development- RBSA Publishers, Jaipur.
6. Paul Jose, Kumar N. Paul T.M. - Entrepreneurship Development. HPH, New Delhi.
7. Saini J. S., Rathore B. S. - Entrepreneurship Theory and Practice.



## SPECIAL ELECTIVE SUBJECT - Group E (Business Practices & Environment)

**Subject: Entrepreneurship**

**Course Code: 312**

**Total Credits: 04**

### Objectives of the Course:

- a) To expose the students in the various aspects of entrepreneurship.
- b) To enable the students to do SWOC analysis of entrepreneurship as careers options.

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Challenges in Entrepreneurship Development</b>	<b>Challenges in Entrepreneurship Development:</b> Dot com entrepreneurship, Role of Government in entrepreneurship development- Research and Development Technology for commercialization- Science technology and entrepreneurship development.	<ul style="list-style-type: none"><li>i. To understand the challenges in entrepreneurship.</li><li>ii. To know the role of Government in entrepreneurship development.</li><li>iii. To study the R&amp;D technology for development of entrepreneurship.</li></ul>
2	<b>Specialized Institutions Involved in Entrepreneurship Development</b>	<b>Specialized Institutions Involved in Entrepreneurship Development:</b> District Industrial Centre (DIC), Maharashtra State Financial Corporation (MSFC), Small Industries Development Bank of India (SIDBI), Industrial Finance Corporation of India (IFCI), Small Industries Service Institute (SISIs), Industrial Development Bank of India (IDBI), Maharashtra Industrial Development Corporation (MIDC), Maharashtra Centre for Entrepreneurship Development (MCED), Maharashtra Industrial Technical Consultancy Organization (MITCON).	<ul style="list-style-type: none"><li>i. To understand thoroughly the role of specialized institutions in the entrepreneurship development.</li><li>ii. After study of each specialized institutions the students will be able to understand the functions or guidelines of Government w.r.t. specialized institutions.</li></ul>
3	<b>Creativity and Innovation</b>	<b>Creativity and Innovation:</b> Meaning and Importance- Role of developing new business markets, Creativity in problem solving.	<ul style="list-style-type: none"><li>i. To understand the concept of creativity and innovation.</li><li>ii. To know the role creativity and innovation of developing new business.</li><li>iii. To understand how the creativity and innovation help to grow or develop entrepreneurship in various sectors according to availability of</li></ul>

			resources, market etc. iv. To study the problems solving skills through creativity and innovation.
4	<b>Business Plan</b>	<b>Business Plan-</b> Meaning, Importance, Contents of business plan, Preparation of business plan.	i. To understand what is business plan in detail with its importance in entrepreneurship. ii. To understand the contents of business plan in preparation considering its SWOT analysis.

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Guest Lectures should be arranged to discuss on the various challenges in entrepreneurship development. Role of Government.	You Tube Video and PPTs on the explanation of various challenges to be faced in entrepreneurship development. Role of Government.	Detailed report / project assigned to students to find the challenges of entrepreneurship development in various sectors or industries. Role of Government in entrepreneurship development.	Understanding of entrepreneurship development. Challenges faced by the entrepreneurs in the Globalization era. The role of Government in entrepreneurship development. How the information and technology helps in entrepreneurship development.
2	12	Guest Lectures, Study on the Government Reports, newspapers, to study the role of specialized institutions in entrepreneurship development.	You Tube Video on PPTs on the explanation of specialized institutions role involved in entrepreneurship development.	Project Report on the study of each specialized institution to study the role or functions of each institution in the entrepreneurship development.	Understanding the knowledge on each specialized institutions formed by the Government. And how these institutions help the new entrepreneurs or startups and existing entrepreneurs to develop their business.
3	12	Creative thinking, Imagination, preparation of new business model, marketing strategies, research and development, exhibitions to be arranged under the guidance of experts in the respective field/ area.	You Tube Videos and PPTs on promoting business, creativity and innovation, idea generation, identification of market, etc.	Projects or demonstrations assigned to the students to study on creative thinking and innovation.	By arranging and developing creative thinking and innovation, imagination, new business models, R & D , strategy development skill, exhibitions will help the students to think out of the box and it will helps to the birth of new entrepreneur/ start up or development of entrepreneurship.

4	12	Guest lectures should be arranged to discuss with the students, how to prepare business plan, priority in business plan, requirement of resources, allocation of resources etc.	You Tube Videos and PPTs on new business plan includes contents and preparation of business plan.	Projects assigned to the students to prepare hypothetical business plan with the limited resources, ask them to show how to utilize resources at optimum level.	Practical understanding to students on preparation of business plan with hypothetical situation to create interest and think 360 degree level of business.
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#### References:-

1. S.S. Nadkarni- Developing New Entrepreneurs –EDII Ahmedabad.
2. N. P. Singh- Entrepreneurs V/s Entrepreneurship- Asian Society for ED.
3. Desi Vasant- Dynamics of Entrepreneurial Development and Management- HPH.
4. Khairka S.S. - Entrepreneurial Development- S. Chand & Co. New Delhi.
5. Moharana Drant Desai- Entrepreneurship Development- RBSA Publishers, Jaipur.
6. Paul Jose, Kumar N. Paul T.M. - Entrepreneurship Development. HPH, New Delhi.
7. Saini J. S., Rathore B. S. - Entrepreneurship Theory and Practice.



## SPECIAL ELECTIVE SUBJECT - Group F (Business Administration)

**Subject: Human Resource Management**

**Course Code: 313**

**Total Credits: 04**

### Objectives:

1. To understand the basic concepts of Human Resource Management and changing role of HRM in business.
2. To impart adequate knowledge and analytical skills in the field of HRM, HRP and development, Recruitment and Selection Process.
3. To understand the concepts of Training and Development, Performance Appraisal and Merit Rating.
4. To expose the students to the concept, significance and uses of the concepts like Retirement/ Retrenchment Strategies and Recent Trends in HRM
5. To know the concept of Competency mapping
6. To understand the E-HR and recent trends in Human Resource management.

### Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose skills to be developed	Lectures Allotted
1	<b>Human Resource Management- An Overview</b>	1.1 Introduction to Human Resource Management: Meaning & Definition, Concept, Approaches, Functions.  1.2 Challenges of Human Resource Management in changing business scenario.  1.3 Human Resource Environment: Technology and Structure, Network Organization's, Workforce Diversity,  1.4 HRM- Dual Career Employees, Employee Contract/ Leasing Global Competition,WTO and Labour Standards	<ul style="list-style-type: none"><li>▪ To understand the meaning, definition and concepts of HRM and get the knowledge about the approaches, functions and challenges of HRM in changing scenario of the business.</li><li>▪ Get well acquainted with human resource environment -technology and structure, network organisations, workforce diversity</li><li>▪ To understand the, dual career employees, employee Contract/ leasing,Global Competition, , WTO and Labour Standards.</li></ul>	12
2	<b>Human Resource Planning and Development</b>	2.1 <b>Objectives, Need and Estimation</b>  2.2 Recruitment: Definition, Sources and Policy  2.3 Selection: Definition, Process and assessment, Interview and Inductio.	<ul style="list-style-type: none"><li>▪ To understand the objectives of HRP and development.</li><li>▪ To make students able to find the need and estimation of HRP and development.</li><li>▪ Get well acquainted with the concept of</li></ul>	12

		<p>2.4 Retention of Manpower, Succession Planning.</p> <p>2.5.Kinds of Retirement: Resignation, Discharge, Dismissal, Suspension, Lay off.</p>	<p>recruitment and selection process with the retention of manpower and succession planning</p>	
<b>3</b>	<b>Training and Development, Performance Appraisal and Merit Rating</b>	<p>3.1 Training : Meaning Purpose, Importance, Benefits Training Process and Methodology</p> <p>3.2 Methods of Training, Evaluation and Feedback</p> <p>3.3. Competency mapping,: meaning, benefits of competency mapping, 9 box tool of HR, Model,</p> <p>3.4 Performance Appraisal : Definition, Methods, Result Based Performance,Appraisal Errors, Ethics in Performance Appraisal, 360 Degree Feedback.</p> <p>3.5 Merit Rating – Promotions, Transfers, Job Description, Job Evaluation, Job Enlargement, Job Enrichment, Job Rotation</p>	<ul style="list-style-type: none"> <li>● To understand the meaning and Purpose of Training, Importance, Benefits, Training process and methodology and Develop ability to compare training and aids, evaluation of training programmes</li> <li>● To understand the meaning and benefits of Competency mapping and also know the model. <ul style="list-style-type: none"> <li>▪ To make the students know about the concept of and methods of performance appraisal and result based performance.</li> <li>▪ To be understand the difference between errors and ethics in performance appraisal and 360 degree feedback.</li> <li>▪ To be well acquainted with Merit Rating, promotions, transfers, job description, job evaluation, job enlargement, job enrichment, job rotation.</li> </ul> </li> </ul>	<b>12</b>

4	<b>Recent Trends in HRM</b>	<p>4. 1E- HR- meaning, organization, Benefits and cost of E-HR and Future of E-HR, Digitized rewards and recognition, Online skill assessments, Biometric time tracking and security</p> <p>4.3 Recent Trends in HRM after covid 19 : Workplace Diversity, Flexi time, Work from Home, Virtual Work, Artificial Intelligence, Productivity of HR process,</p>	<ul style="list-style-type: none"> <li>▪ To understand the meaning and concept of retirement, resignation, discharge, dismissals, suspension of an employee and Layoff.</li> <li>▪ To know the concept of E-HR, there benefits, Cost effect and what is future of E-HR</li> <li>▪ Get knowledge about the new trends in HRM development of technology HRM also change work culture, workplace, talent management, motivational approaches, learning Management System, d, Flexitime, Work from Home, Virtual Work, Artificial Intelligence (Workforce), Productivity of HR process, digitized rewards and reconition, online skill assessment, Bio metric time tracking and security etc.</li> </ul>	12
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**Teaching Methodology:**

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment,	Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels. <a href="https://youtu.be/6VTZb4Hn5vA">https://youtu.be/6VTZb4Hn5vA</a>	<ul style="list-style-type: none"> <li>▪ Evaluate the place of Human Resource Management in the Indian context.</li> <li>▪ Project on analysis of one company and its policy regarding female employees in the workforce.</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ The Definition and meaning of Human Resource Management, its Concept, Approaches, Functions</li> <li>▪ Can identify that the HRM is profession or not.</li> <li>▪ Able to cope with the concept Human Resource Environment.</li> </ul>

		Case study, Jigsaw reading, Practical based learning			<ul style="list-style-type: none"> <li>▪ Place of female employee in the organisation.</li> <li>▪ Identify the changing Role of Human Resource Management.</li> </ul>
2	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels	<ul style="list-style-type: none"> <li>▪ Project on recruitment and selection process of one company.</li> <li>▪ Fieldwork on retention of manpower and succession planning.</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ The Objectives of Human Resource Planning and Development.</li> <li>▪ Need and Estimation for Human Resource Planning and Development.</li> <li>▪ Can understand the recruitment and selection process.</li> <li>▪ Understand the concept of Retention of Manpower, Succession Planning.</li> </ul>
3	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels	<ul style="list-style-type: none"> <li>▪ Evaluate the roll of Training and Development and performance appraisal.</li> <li>▪ Project work on training methods adopted by companies.</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ Understand the Basic Concept and Purpose of Training, Importance, Benefits, Training process and methodology.</li> <li>▪ Able to differentiate the various methods of Training and Aids, Evaluation of Training Programmes.</li> <li>▪ Identify the changing Role of performance appraisal and result-based performance with the new concepts like errors, 360 Degree Feedback.</li> <li>▪ Able to identify the concept of merit rating, job Evaluation, Job Enlargement, Job Enrichment, Job</li> </ul>



4	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels	<ul style="list-style-type: none"> <li>▪ Case study of one company, which follows the policy of Retirement, Resignation, Discharge, Dismissal, Suspension and Lay off.</li> <li>▪ Project on the new trends in HRM e.g. Work from Home, Artificial Intelligence (Workforce).</li> </ul>	<p>Rotation.</p> <p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ Kinds of Retirement, Resignation, Discharge, Dismissal, Suspension, Lay off.</li> <li>▪ Identify he recent trends in HRM</li> <li>▪</li> </ul>
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**Methods of Evaluation:**

Unit	Internal Evaluation	External Evaluation	Suggested Add on Courses
I	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
II	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
III	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
IV	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop

**RECOMMENDED BOOKS**

- 1) Human Resource Management - Garry Dessler
- 2) Human Resource Management - R S Dwiwedi
- 3) Human Resource Management - V P Michael
- 4) Human Resource Management - Mirza and Saiyadin
- 5) Managing Human Resource - Arun Monappa
- 6) Strategic Human Resource Management - Charles R. Green

- 7) Strategic Human Resource Management – Kandula
- 8) Strategic Human Resource Management - Jeffery B. Mello
- 9) Personnel & Human Resource Management - Robert Mat & Jhon Jackson
- 10) Dynamics of Personnel Administration - Dr. Rudrabasavraj
- 11) Personnel & Human Resource Management- A. M. Saxena
- 12) Manushyabal Vyavasthapan Va Audyogik Sambandha- Dr. Madhavi Mitra.
- 13) Human resource Management in Modern India (Concept and Cases)= Dr. Sorab Sadri and Jayashi Sadri, Himalaya Publication

**14) Web reference**

<https://www.youtube.com/user/cecedusat>

<https://www.swayamprabha.gov.in>

<http://cec.nic.in/cec>

<https://mhrd.gov.in/e-contents>

## SPECIAL ELECTIVE SUBJECT - Group F (Business Administration)

**Subject: Organizational Behaviour**

**Course Code: 314**

**Total Credits: 04**

### Objectives:

1. To make the students understand various concepts of organization behaviour
2. To provide in depth knowledge about process of formation of group behaviour in an organization set up
3. To know the motivational process and emotional intelligence.
4. To understand the concept of stress and conflict and effects of work culture

### Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose skills to be developed	Lectures Allotted
1	<b>Introduction to Organizational Behaviour</b>	1.1 Definition and Objectives of Organizational Behaviour. 1.2 Conceptual Study of Organizational Behaviour. 1.3 Role of Information Technology in Organization. 1.4 Impact of Globalization on Organizational Behavior 1.5 Five Model of Organizational Behavior	<ul style="list-style-type: none"><li>▪ To understand the meaning, definition and concepts of OB and get the knowledge about the study and dimensions of OB</li><li>▪ To understand the well acquainted organizational environment - technology and structure, network organizations, and global impact on OB.</li></ul>	<b>12</b>
2	<b>Organizational Designs , Culture  Personality &amp; Attitudes</b>	2.1 Horizontal Network and Virtual Designs. 2.2 Definition and Characteristics of Organizational Culture. 2.3 Creating and Maintaining Culture. 2.4 Meaning of Personality,,Attributes of Personality	<ul style="list-style-type: none"><li>▪ To understand Networks and designs followed in OB</li><li>▪ To know the detail knowledge about Organizational Culture</li><li>▪ To understand the well acquainted</li></ul>	<b>12</b>

		2.5 Dimensions of Attitude, Attitude Change 2.6 Job Satisfaction, Outcomes of Job Satisfaction	with the concept Personality and its dimensions.  <ul style="list-style-type: none"> <li>▪ To understand Concept, Changes and Outcomes from Job Satisfaction</li> </ul>	
3	<b>Motivational processes &amp; Emotional Intelligence</b>	3.1 Meaning of Motivation, Types of Motives motivational Process, 3.2 Vroom's Expectancy Theory of motivation 3.3 Emotional Intelligence- meaning, Characteristics 3.4 Importance of Emotional Intelligence in the Workplace	<ul style="list-style-type: none"> <li>▪ To understand the meaning and Types of Motives</li> <li>▪ To make the students know about the theory of Vroom's Expectancy</li> <li>▪ To be understand the Concept and characteristics of Emotional Intelligence</li> <li>▪ To be well acquainted with Emotional intelligence in the Workplace</li> </ul>	12
4	<b>Stress And Conflict, Groups &amp; Teams</b>	4.1 Meaning & Causes of Stress, The Effects of Stress 4.2 Managing Stress 4.3 Concept of Conflict, Types of conflict, Work-life Balance. Extra Organizational, Organizational Group and Individual 4.4 <b>Concept of Groups, Types of Groups</b> 4.5 Concept of Team, Types of Teams and Team Building 4.6 Aspects of cross functional team	<ul style="list-style-type: none"> <li>▪ To understand the meaning and Causes of Stress</li> <li>▪ Get detail knowledge about the Conflict</li> <li>▪ To be understand Concept and Types of Group and Team building</li> </ul>	12

**Teaching Methodology:**

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels.E-content developed by teacher  <a href="https://www.youtube.com/watch?v=oLjddOh1jZU">https://www.youtube.com/watch?v=oLjddOh1jZU</a>	<ul style="list-style-type: none"> <li>▪ Evaluate the place of Organizational Behaviour in the Indian context.</li> <li>▪ Project on analysis the effects of covid 19 on OB</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ The Definition and meaning of organizational Behaviour</li> <li>▪ Able to cope with the role of technology in organization .</li> <li>▪ Describe the theoretical and conceptual framework of Organizational Behavior</li> <li>▪ Analyze the impact of globalization on OB</li> </ul>
2	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case		<ul style="list-style-type: none"> <li>▪ Case study of company for know the characteristics of organizational culture.</li> <li>▪ Project on various Dimensions of attitude.</li> <li>▪ Research on job satisfaction of Govt./Semi Govt./Private</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ The explain the horizontal and virtual designs</li> <li>▪ Understand the characteristics organizational culture.</li> <li>▪ Identify the process of impression management, define the concept of Personality.</li> <li>▪ Explain the attributes of</li> </ul>

		study, Jigsaw reading, Practical based learning		sector employee.	personality and various dimensions of attitude.
3	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	<a href="https://www.youtube.com/watch?v=I66gRKVdSRg&amp;t=28s">https://www.youtube.com/watch?v=I66gRKVdSRg&amp;t=28s</a> <a href="https://www.youtube.com/watch?v=7uQs1NxluKE">https://www.youtube.com/watch?v=7uQs1NxluKE</a>	<p>3.5 Survey on employees Motivation factors</p> <p>3.6 Case study of one company for motivational theory</p> <p>3.7 Current trends in Emotional Intelligence</p>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ .The defines the concept of motivation.</li> <li>▪ Capacity to describe the types of motives.</li> <li>▪ Capacity to analyse motivational process.</li> <li>▪ Describe the theory of motivation.</li> <li>▪ The definition of Emotional Intelligence, and explain the characteristics and Importance</li> </ul>
4	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case	<p>Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels</p> <p><a href="https://www.youtube.com/watch?v=xEHQcxaLr2s">https://www.youtube.com/watch?v=xEHQcxaLr2s</a>  <a href="https://www.youtube.com/watch?v= 4ChIwT_Euo">https://www.youtube.com/watch?v= 4ChIwT_Euo</a></p>	<ul style="list-style-type: none"> <li>▪ Case study of corporate sector in about conflict and conflict management</li> <li>▪ Project on the effects of stress and conflict.</li> <li>▪ Prepare PPT on Team Building concept</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ The definition of stress, describe the causes of stress.</li> <li>▪ Describe the effects of stress.</li> <li>▪ The definition of Conflict and describe the types of conflict.</li> <li>▪ The definition of Group and team.</li> <li>▪ Explain the types of Teams and Team building.</li> </ul>

		study, Jigsaw reading, Practical based learning			
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**Methods of Evaluation:**

Unit	Internal Evaluation	External Evaluation	Suggested Add on Courses
I	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
II	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
III	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
IV	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop

**RECOMMENDED BOOKS**

1. Organizational Behaviour -Freud Luthans
2. Human Behaviour at Work -J W Newstorm
3. Organisation Behaviour : Text and Cases -Games K, Aswathappa
4. Organisational Behaviour -Dr Mrs Oka & Mrs Kulkarni
5. Introducing Organisational Behaviour- J.Mike Smith (View at google .co.in)

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**SPECIAL ELECTIVE SUBJECT - Group G (Advanced Banking & Finance)**

**Subject: Foreign Exchange**

**Course Code: 315**

**Total Credits: 04**

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**Objectives:**

1. To provide an understanding of various aspects of foreign exchange market.
2. To acquaint the students with financing of foreign trade.
3. To give an understanding about exchange rate mechanism and factors affecting exchange rates.
4. To make students aware of recent development in foreign exchange market.

**Skills to be developed:**

1. To make aware about role of foreign exchange market.
2. To expose them to various ways of financing of foreign trade.
3. Students shall learn and acquire knowledge about working of foreign exchange market in India.
4. Students will acquire skills about role of EXIM bank in financing foreign trade



Unit No.	Topic	No. of Lectures	Teaching Method	Course Outcome
1	<b>Foreign Exchange Market:</b> 1.1 Meaning of foreign exchange 1.2 Features of foreign exchange market. 1.3 Participants of foreign exchange market. 1.4 Spot market: features 1.5 Forward market: features 1.6 Forward market Hedging 1.7 Swap rates 1.8 Currency futures 1.9 Currency Options 1.10 Risk in Foreign Exchange Market	10	Lecture, PPT, Group Discussion, Library Work, Assignment,	Students will be able to understand the role of foreign exchange market and types of trade performed in it.
2	<b>Foreign Exchange Market in India:</b> 2.1 Structure and Growth of Indian foreign Exchange Market 2.2 Foreign Exchange Management Act, 2000: Origin & Scope 2.3 Authorized money changers and Authorized Dealers in Foreign Exchange. 2.4 Dealing Rooms – Concept & Importance 2.5 Types of Accounts: of Non-Resident Indians 2.6 Meaning of Non-Resident 2.7 Non-Resident (External) Account (NRE) 2.8 Non-Resident (Ordinary) Account (NRO) 2.9 Foreign currency (Non-Resident) Account (FC NR) 2.10 Resident Foreign Currency Account	16	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will be able to know the role of intermediaries in foreign exchange market, types of accounts of NRI in banks.

	<p>(RFC)</p> <p>2.11 Non-Resident Non-Repatriable Account (NRNR)</p> <p>2.12 Role of Reserve Bank of India in Foreign Exchange Market.</p> <p>2.13 Factors Influencing foreign exchange rate</p> <p>2.14 Trade in major world currencies</p>			
3	<p><b>Financing of Foreign Trade:</b></p> <p>3.1 Objectives of Foreign Trade Documentation.</p> <p>3.2 Documents:</p> <ul style="list-style-type: none"> <li>• Letter to Credit (L/C)</li> <li>• Parties to L/C; operation of L/C</li> <li>• Types of L/C: Revocable &amp; Irrevocable</li> <li>• Transferable, Back to back credits</li> <li>• Revolving L/C</li> <li>• Anticipatory L/C</li> <li>• Draft, Types of draft.</li> <li>• Mate's Receipt. Bill of lading, Invoice. Insurance policy,</li> <li>• Certificate of origin, consular's invoice, bill of exchange</li> </ul>	12	<p>Lecture,</p> <p>PPT,</p> <p>Group Discussion, Library Work,</p> <p>Assignment,</p> <p>Use of internet</p>	<p>Students will be able to understand finance trade and documents required while raising forex finance for business.</p>
4	<p><b>Methods of Financing Foreign Trade:</b></p> <p><b>4.1 Bank Credit –</b></p> <ul style="list-style-type: none"> <li>• Pre-shipment credit</li> <li>• Post-shipment credit</li> <li>• Medium-term credit</li> <li>• Credit under duty draw back scheme</li> <li>• Export-Import Bank of India (EXIM Bank): Objectives, Functions, Performance and Role,</li> <li>• Export Credit Guarantee Corporation</li> </ul>	10	<p>Lecture,</p> <p>PPT,</p> <p>Group Discussion, Library Work,</p> <p>Assignment,</p> <p>Use of internet</p>	<p>Students will be able to acquaint with the methods of financing of foreign trade and role of EXIM bank.</p>

	(ECGC) of India. <ul style="list-style-type: none"> <li>• Financing of Agro Export and documentations and finance and insurance required for it.</li> </ul>			
	<b>Total</b>	<b>48</b>		

**Recommended Books:**

1. International Financial Management - V. Sharan
2. Financial Institution and Markets-a Global Perspective-Hazel J. Johnson
3. Foreign Exchange; International Finance-Risk Management-A.V. Rajwade
4. Financial Markets and Institutions- L.M. Bhole
5. International Financial Management-Eun/Resnick
6. International Financial Management, Markets, Institutions-James C. Baker-
7. Reserve Bank of India Bulletin- RBI, Mumbai.
8. Annual Reports of IMF, World Bank, Asian Development Bank.
9. Reports on Trends & progress of banking in India –RBI.

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**SPECIAL ELECTIVE SUBJECT - Group G (Advanced Banking & Finance)**  
**Subject: International Finance      Course Code: 316      Total Credits: 04**

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**Objectives**

1. To offer exposure of international banking.
2. To Provide understanding of International Financial market.
2. To acquaint the students with International monetary system.
3. To give understanding of operations of international Financial Institutions.

**Skills to be developed:**

1. To make aware about structure and working of foreign banking.
2. To expose them to various instruments of foreign debt and equity market.
3. Students shall learn and acquire knowledge about new foreign exchange rate regime with latest trends.
4. Students will acquire skills about role of international financial institutions.

Unit No.	Topic	No. of Lectures	Teaching Method	Course Outcome
1	<p><b>International Banking:</b>  <b>1.1 International Banking</b>  Reasons For International Banking, Types of International Banking offices: Correspondent Bank Foreign Offices Subsidiary and Affiliate Banks Offshore banking Centers,  <b>1.2 Money Transfer Mechanism:</b> Forex division of banks, Pay pal, Swift, Western union money transfer, KYC norms.  <b>1.3 Role of RBI in controlling and supervision of foreign banking:</b> promotion of Indian banks to work in aboard.  <b>1.4 International Money Market:</b>  Euro-markets- Development of Euro-dollar Market. Instruments - Euro Notes, Euro commercial Paper, Medium-term Euro Notes.</p>	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will be able to learn the working of international banking and money market and role of RBI in this regard.
2	<p><b>International Debt and Equity Markets: 2.1 International Debt Market Instruments:</b> Procedure for Issue of Foreign Bonds, Euro Bond, Global Bonds Convertible Bonds, Floating rate Notes International Equity Market Instruments:  <b>2.2 Procedure for Issue of</b> –American Depository Receipts (ADR), Global Depository Receipts (GDR), External Commercial Borrowing (ECB).</p>	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will be able to expose to international debt and equity market.

3	<p><b>New Exchange Rate Regime:</b>  <b>3.1 Floating Rate System:</b> Independent Float and Managed Float.  <b>3.2 Currency Pegging:</b>  Pegging to single Currency; Pegging to basket of Currencies 'Pegging to SDRS (Special Drawing Rights); Crawling Peg. Convertible and Non-Convertible Currency.</p>	14	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will be able to understand the working of exchange rate regime with latest trends.
4	<p><b>International Financial Institutions</b>  <b>4.1</b> Origin, Objectives, Structure and Operations of:  <b>A)</b> Bank for International Settlements (BIS)  <b>B)</b> International Monetary Fund (IMF)  <b>C)</b> World Bank Group: International Bank for Reconstruction and Development (IBRD); International Finance Corporation (IFC);  <b>D)</b> BRICS bank: role, progress, and its future</p>	10	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will be able learn the role of international financial institutions in financing the infrastructure projects, health and education sector in developing countries.  Student may understand the importance of BRICS groups and its bank.
	<b>Total</b>	<b>48</b>		

Recommended Books:

1. International Financial Management - V. Sharan
2. Financial Institution and Markets - a Global Perspective - Hazel J. Johnson
3. Foreign Exchange; International Finance-Risk Management-A.V. Rajwade
4. Financial Markets and Institutions- L.M. Bhole
5. International Financial Management-Eun/Resnick
6. International Financial Management, Markets, Institutions-James C. Baker-
7. Reserve Bank of India Bulletin- RBI, Mumbai.
8. Annual Reports of IMF, World Bank, ADB.

## **SPECIAL ELECTIVE SUBJECT - Group H (Advanced Marketing)**

**Subject: International Marketing**

**Course Code: 317**

**Total Credits: 04**

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### Preamble

After introduction of new economic policy the intensity of competition in the market has increased substantially. Competition is becoming tougher day by day. Therefore every business house is giving more importance to the marketing side compared to the other branches of the business. The heart of business success lies in its marketing. Most aspects of business depend on successful marketing. The overall marketing umbrella covers advertising, public relations, promotions and sales. Marketing is a process by which a product or service is introduced and promoted to potential customers. Without marketing, business may offer the best products or services, but none of the potential customers would know about it. Without marketing, sales may crash and companies may have to close.

In this situation, many jobs are available in the marketing field. These jobs require detailed knowledge of marketing. The main aim of this course is creating manpower which will fulfill the demands of the industry in the field of marketing.

### Objectives of the course

- The Course participants will become more familiar with the nature and practices of international marketing. They should feel equally confident to be able to distinguish international marketing mechanics from the domestic marketing models and approaches.
- They would be far more equipped to design and participate in designing an international marketing strategy.
- The spin-off benefits to the participants should be to develop in them a right attitude, inject enthusiasm and hone their interactive ability as they address the issues and challenges of operating in the international market

Depth of the program – Detailed Knowledge

### Objective of the Program

- a. To equip and train Post Graduate students to accept the challenges in the field of international marketing by providing opportunities to study the concept and scope of international marketing.
- b. To develop students' independent logical thinking and facilitate personality development.
- c. To impart the students to understand the various concepts regarding international marketing.
- d. To impart the knowledge regarding procedural aspects of export documentation

- e. To impart the knowledge regarding World Economy and Current Environment of Global Marketing.

Unit No	Unit Title	Contents	Purpose Skills to be developed
01	Introduction	<b>International Marketing</b> :Concept, scope and Objectives Reason of entry in International Marketing. Indian Presence in the International Market Challenges and opportunities in International Marketing	To impart the students about the concept of International Marketing
02	International	-An overview of the World Economy and Current Environment of Global Marketing.	To impart to the students about International Marketing
	Marketing Environment	-Stages of International Marketing Development and Environment -Macro Factors (Economic, Political, Legal, Socio Cultural and Technological Factors) affecting international Marketing.	Environment
03	International Marketing Mix and Segmentation	-International Product Policy, Planning and Mix -International Pricing Policies, Planning and Mix -International Promotion and Advertising Policies, Planning Mix -International Distribution Systems and Logistics Management -Problems of International Market Segmentation	To impart to the students about International marketing mix and Segmentation
04	Procedural Aspect of Export Documentation and arranging finance for exports	-Recent Import and Export Policies and Procedures -Import and Export Documentation -Financial and Fiscal incentives provided by the government and	To impart the students about Procedural Aspect of Export Documentation



		-Foreign Exchange facilities by the RBI and EXIM Bank, Institutional support from government	
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### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
01	12	Guest Lecture, Presentation of the students and Lectures available on Youtube	Videos on Youtube	N.A	Students will understand various approaches to study marketing and also get sufficient knowledge about the international Marketing.
02	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will get in-depth knowledge about International Marketing Environment
03	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will understand about International Marketing Mix and Segmentation
04	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will aware about Procedural Aspect of Export Documentation

### Method of Evaluation

Subject	Internal Evaluation	External	Suggested Add on
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		Evaluation	Course
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.

### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Marketing Management	Arun Kumar, Rachana Sharma.	Atlantic Publishers & Distributors	New Delhi
2.	Marketing Management	Amar Jyoti	Gennext Publishers	New Delhi
3.	Marketing Management	Ranjan Saxena	Tata Mc-Graw Hill Publishers	New Delhi
4.	The Marketing Mix- Master of 4Ps of marketing		50munutes.com	
5.	International Marketing Mix Management	Tobias Richter	Noyos	Berlin
6.	Marketing Management	Russell Winer	Pearson Education	Delhi
7.	Public Relation in Marketing Mix	Jordan Goldman,	NTC Business Books	New York
8.	Public Relation for Marketing Management	Frank Jefkins	The MACMILLAN Press Ltd	London
9.	International Marketing	P.K. Vasudeva,	Excel Books	
10.	Marketing Management	Rajan Saxena	Mc Graw Hill Education Pvt Ltd	New Delhi

<b>11.</b>	<b>Marketing Management ( A south Asian Perspective)</b>	<b>Philip Kotler, Kevin Lane Keller, Abraham Koshy, Mithileshwar Jha,</b>	<b>Pearson.</b>	<b>New Delhi</b>
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## SPECIAL ELECTIVE SUBJECT - Group H (Advanced Marketing)

**Subject: Marketing Research**

**Course Code: 318**

**Total Credits: 04**

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### Preamble

After introduction of new economic policy the intensity of competition in the market has increased substantially. Competition is becoming tougher day by day. Therefore every business house is giving more importance to the marketing side compared to the other branches of the business. The heart of business success lies in its marketing. Most aspects of business depend on successful marketing. The overall marketing umbrella covers advertising, public relations, promotions and sales. Marketing is a process by which a product or service is introduced and promoted to potential customers. Without marketing, business may offer the best products or services, but none of the potential customers would know about it. Without marketing, sales may crash and companies may have to close.

In this situation, many jobs are available in the marketing field. These jobs require detailed knowledge of marketing. The main aim of this course is creating manpower which will fulfill the demands of the industry in the field of marketing.

### Objectives of the course

- The Course participants will become more familiar with the nature and practices of international marketing. They should feel equally confident to be able to distinguish international marketing mechanics from the domestic marketing models and approaches.
- They would be far more equipped to design and participate in designing an international marketing strategy.
- The spin-off benefits to the participants should be to develop in them a right attitude, inject enthusiasm and hone their interactive ability as they address the issues and challenges of operating in the international market

Depth of the program – Detailed Knowledge

### Objective of the Program

- f. To equip and train Post Graduate students to accept the challenges in the field of international marketing by providing opportunities to study the concept and scope of international marketing.
- g. To develop students' independent logical thinking and facilitate personality development.
- h. To impart the students to understand the various concepts regarding international marketing.
- i. To impart the knowledge regarding procedural aspects of export documentation
- j. To impart the knowledge regarding World Economy and Current Environment of Global Marketing.

Unit No	Unit Title	Contents	Purpose Skills to be developed
01	Introduction to Marketing Research	<p><b>Marketing Research-</b> Meaning, Factors involved in Marketing Research, Types of Marketing Surveys, Role of Marketing Research in Marketing, Implications of marketing research on marketing mix(7 P's), Ethics in Marketing Research, Career in Marketing Research.</p> <p><b>Research Process-</b> Formulating the Problem, finding basic research issues, Developing Hypotheses, Characteristics of a</p>	To impart the students about the concept of Marketing Research & it's process.
02	Application of Marketing Research	<p><b>- Marketing Research Department's Goals- Pragmatic, Selective, and Evaluative,</b></p> <p><b>Marketing Decision Support System (MDSS) - Scope &amp; Significance, Characteristics, Components, Role in Decision Making.</b></p> <p><b>Applications of Marketing Research : Cluster analysis for identifying market segments, Conjoint analysis for Product research, Multi-dimensional scaling, Discriminate analysis and perceptual mapping for Brand positioning research, Advertising research – copy testing, media selection, media scheduling, Industrial versus consumer marketing research.</b></p>	To impart to the students about application of Marketing Research
03	Market Information	<p><b>Market Information: Meaning and Importance, Sources of Collecting Marketing Information, Secondary Data Sources, Standardized Sources of Collecting Data- Home Audit, Mail Diary, Shop and retail audits, Readership surveys and viewer ship surveys.</b></p>	To impart to the students about how to collect market Information

04	Use of Internet in Marketing Research	<b>Web Based Marketing Research: Meaning, Advantages &amp; Disadvantages</b> <b>Primary &amp; Secondary Data Collection through Internet, Reach analysis, Marketing Research in Social Media, Online Brand Perception Research, Online Targeted Advertising</b>	To impart the students about use of internet in marketing research
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Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
01	16	Guest Lecture, Presentation of the students and Lectures available on Youtube	Videos on Youtube	N.A	Students will understand the students about the concept of Marketing Research & it's process
02	16	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will get in-depth knowledge about application of Marketing Research
03	08	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will understand how to collect market Information
04	08	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will aware about use of internet in marketing research

#### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.

Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.

### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Marketing Management	Arun Kumar, Rachana Sharma.	Atlantic Publishers & Distributors	New Delhi
2.	Marketing Management	Amar Jyoti	Gennext Publishers	New Delhi
3.	Marketing Management	Ranjan Saxena	Tata Mc-Graw Hill Publishers	New Delhi
4.	The Marketing Mix- Master of 4Ps of marketing		50minutes.com	
5.	International Marketing Mix Management	Tobias Richter	Noyos	Berlin
6.	Marketing Management	Russell Winer	Pearson Education	Delhi
7.	Public Relation in Marketing Mix	Jordan Goldman,	NTC Business Books	New York
8.	Public Relation for Marketing Management	Frank Jefkins	The MACMILLAN Press Ltd	London
9.	International Marketing	P.K. Vasudeva,	Excel Books	
10.	Marketing Management	Rajan Saxena	Mc Graw Hill Education Pvt Ltd	New Delhi

<b>11.</b>	<b>Marketing Management ( A south Asian Perspective)</b>	<b>Philip Kotler, Kevin Lane Keller, Abraham Koshy, Mithileshwar Jha,</b>	<b>Pearson.</b>	<b>New Delhi</b>
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# SAVITRIBAI PHULE PUNE UNIVERSITY

Faculty of Commerce & Management

Master of Commerce (Semester IV)

(Choice Based Credit System)

Revised Syllabus (2019 Pattern)

(w.e.f. Academic Year-2020-2021)

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## CORE COMPULSARY SUBJECT

Subject: Capital Market and Financial Services

Course Code: 401

Total Credits: 04

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### Objectives:

1. To acquaint the students with working of capital market.
2. To make the students aware about the latest developments in the field of capital market in India.
3. To enable the students to understand various transactions in stock exchanges and agencies involved in it.
4. To give exposure of financial services offered by various agencies and financial adviser to students.

### Skills to be developed:

1. To make aware about working of capital market in India.
2. To expose them to various instruments of capital market.
3. Students shall learn and acquire the knowledge of financial services offered by agencies.

Students will acquire skills about recent development in regulatory body SEBI

Unit No.	Topic	No. of Lectures	Teaching Method	Course Outcome
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1	<p><b>Capital market:</b>  1.1 Meaning, Functions, Structure, Characteristics of Capital Market  1.2 Participants of capital market - Capital market instruments, Equity share, Preferences shares, Debenture, Bonds,  1.3 Innovative debt instruments: Junk bonds, Naked bonds, Deep discount bonds,  Forward contracts, Futures contract - Options contract,  1.4 Trends in capital market in India.</p>	10	Lecture, PPT, Group Discussion, Library Work, Assignment,	Students will be able to learn the importance and working of capital market.
2	<p><b>Stock Market</b>  <b>2.1 Stock exchange:</b> organization-membership-governing body - Bombay stock exchange and National Stock Exchange: functions, trading volumes,  <b>2.2 Over the Counter Exchange of India (OTCEI):</b> Progress and Functions.  <b>2.3 Primary market –</b>  Functions of primary market - issue mechanism- Procedure of IPO, Price Band, Participants, Prospectus,  <b>2.4 Listing of Securities:</b> procedure, annual return filing to stock exchange by share listed companies    <b>2.5 Secondary market :</b> Objectives, functions of secondary markets, stock broking, e-broking, depository system-functions and benefits stock market trading, Index, SENSEX, NIFTY, Intraday Trading, Delivery Trading, -Derivatives trading</p>	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Student will be able to understand the working of BSE and NSE, and OTCEI in detail.
3	<p><b>Financial Services</b>  <b>3.1 Merchant banking and underwriting,</b> collecting bankers : meaning, functions ,and services rendered,  <b>3.2 Mutual funds:</b> Meaning, functions-Types-Open and closed ended funds-income funds balanced fund, growth fund-index fund,  Portfolio management: meaning and services  <b>3.3 Credit rating:</b> meaning and need, various credit rating</p>	14	Lecture, PPT, Group Discussion, Library Work,	Students will be able to know the role of inter-mediatories, Mutual funds. Portfolio management.

	agencies in India, Foreign institutional investment (FII), Foreign Direct Investment (FDI), Hedge funds, Offshore funds.		Assignment, Use of internet	
4	<b>Securities and Exchange Board of India (SEBI)</b> <b>4.1 Background, Establishment, functions,</b> powers, achievements and Regulatory aspects, recent changes & emerging trends. <b>4.2 Investors education and redressal</b> mechanism by SEBI <b>4.3 SEBI approved Financial adviser:</b> Role and Functions.		Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will be able to know the role of SEBI in regulating stock exchanges and investors' education, financial advisors.
	<b>Total</b>	<b>48</b>		

### Recommended Books:

1. M.Y. Khan: Indian Financial System-Tata Macgraw Hill Publishing Co. Ltd.
2. Frank J.Fabozzi & Franco Modigliani : Capital markets institutions and instruments - Prentice Hall of India, New Delhi
3. Fredric Mishkin and Stanley Eakins, Financial Markets and Institutions, Pearson Prentice Hall, Boston san Francisco, New York.
4. Preeti Singh: Investment Management, Himalaya Publishing House, New Delhi.
5. Rudder Dutta, Gaurav Dutta, and Sundram Indian Economy (Latest Edition), Himalaya Publishing House, New Delhi.

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## CORE COMPULSARY SUBJECT

Subject: Industrial Economic Environment

Course Code: 402

Total Credits: 04

### Preamble –

In the present global era, growth of industries and knowledge of it is becoming imperative. This paper aims to provide basic knowledge to students about industrial growth and policies adopted by India since its independence. It also aims to make students acquainted with the changing industrial scenario of the country with focus on the main industries contributing in the industrial development of the country.

### Scope of the programme –

Basic Knowledge of Industrial economic environment

#### ➤ Objectives of the Course:

1. To provide knowledge about basic issues in Industrial Economic Environment to students.
2. To make students aware about Industrial pattern and growth in India and Industrial policies of India since independence.
3. To study the progress and current problems of major industries in India.

Unit No.	Unit Title	Content	Purpose & Skills to be Developed
1	<b>Industrial Economic Environment</b>	1.1 Industry: Meaning and Classification	1.To understand the concept of Economic Environment & its Constituents. 2. To understand the elements of Economic & Non-Economic environment.  <b>Skills:</b> Conceptual skills, writing skills
		1.2 Economic Environment : Meaning and Definitions	
		1.3 Importance of Economic Environment	
		1.4 Factors Affecting Economic Environment	
		1.5 Role of Economic Environment in Industrial Development	
2	<b>Industrial Growth and Pattern in Indian Economy</b>	2.1 Role of Industries in Economic Development of India	1.To help students to know about changes in Industrial growth and pattern after 1991 2. To know the role & problems of public sector undertakings, small scale Enterprises & Multinational Corporations in global & competitive Environment  <b>Skills:</b> Analytical skills, Critical Analysis
		2.2 Industrial Growth Pattern Since 8 <sup>th</sup> Plan	
		2.3 Public Sector industries –Role, Problems and Present Situation	
		2.4 Small Scale and Cottage Industries – Meaning, Role and Problems	
		2.5 Multinational Corporations and Indian Economy- Progress and Problems	

		2.6 Industrial Imbalance: Causes and Measures	
3	<b>Industrial Policy and Issues</b>	3.1. Meaning of Industrial Policy	1. Acquaint students with the broad features of industrial policies of Government of India since independence. 2. Recognizing progress & performance of SEZ in India. <b>Skills:</b> Writing skill, critical thinking&Improving analytical ability.
		3.2 Brief Outline of Industrial Policies : 1948, 1956, MRTTP Act 1969, 1980	
		3.3 Industrial Policy of 1991 – Features and Impact	
		3.4 Special Economic Zone- Progress and Problems	
		3.5 Liberalization, Privatization and Globalization – Meaning, and Nature	
		3.6 Liberalization, Privatization and Globalization: Arguments for and Against	
		3.7 Impact of Globalization on Indian Industry	
4	<b>Major Industries in India</b>	4.1 Importance of Major Industries in India	To understand progress & problems of major industries in India. <b>Skill:</b> Communication & Analytical Skills
		4.2 Iron and Steel Industry: Progress and Problems	
		4.3 Cotton Textile Industry : Progress and Problems	
		4.4 Sugar Industry : Progress and Problems	
		4.5 Cement Industry : Progress and Problems	
		4.6 Service Industry: Information Technology Industry and Tourism Industry –Progress and Problems	

➤ **Teaching Methodology:**

Topic Number	Total Lectures	Innovative methods	Film shows andAV applications	Project	Expected Outcome
1	10	<ul style="list-style-type: none"> <li>• Open bookdiscussion</li> <li>• Digitallectures</li> <li>• Reading</li> <li>• Projects</li> </ul>	You tube lectures	<ul style="list-style-type: none"> <li>• Components of macroeconomic environment in India</li> <li>• Anatomy and functioning of Industries in India</li> </ul>	Will understand the impact of economic and non – economic factors affecting industrial environment
2	14	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Casestudies</li> <li>• Problem solvingbased learning</li> </ul>	<ul style="list-style-type: none"> <li>• You tube lectures,</li> <li>• Lectures on SWAYAM Portal or any other online source</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze opportunities of growth of Small scale industries in India</li> <li>• Study the growth pattern of any MNC in</li> </ul>	Will understand role of various types of industries in India like small scale industries, public sector industries, MNCs etc

				India	
3.	12	<ul style="list-style-type: none"> <li>• Pairlearning</li> <li>• Groupdiscussion</li> <li>• Open book discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher oriented PPTs.</li> <li>• You tubelectures</li> </ul>	<ul style="list-style-type: none"> <li>• Impact privatization of railways in India</li> <li>• Trend of liberalization in India since 1991</li> </ul>	<ul style="list-style-type: none"> <li>• Critically evaluate industrial polices in India</li> <li>• Analyze the impact of new industrial policy adopted by India.</li> </ul>
4	12	<ul style="list-style-type: none"> <li>• Groupdiscussion</li> <li>• Teacher driven power pointpresentation Games andsimulation</li> </ul>	<ul style="list-style-type: none"> <li>• You tubelectures</li> <li>• OnlinePPTs</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing role of service industry in India.</li> <li>• Changing composition of industries in India.</li> </ul>	Will understand role, progress and problems of manufacturing and service industries in India

### References:

1. **1 Business Environment**, Francis Cherunilam ,Himalaya Publishing House Pvt. Ltd., Mumbai
2. **Economics of Environment**, Garg M. R, RBSA Publishers, Jaipur
3. **Environmental Economics**, Singh G. N. Singh G. N. Mittal Publications,New Delhi
4. **Industrial Growth in India**, Ahluwalia J. J, Oxford University Press, New Delhi
5. **Industrial Economics in India**, Desai B., Himalaya Publishing House Pvt. Ltd., Mumbai
6. **Industrial Economics**, Birthwal R. R., Wiley Eastern Ltd., New Delhi
7. **Environmental Economics: Theory & Applications.**, Singh &Shishodia, Sage Publication, New Delhi
8. **Economics of Environment of Business (with case studies)**, Puri V. K., Mishra S. K., Himalaya Publishing House Pvt. Ltd.. Mumbai
9. **Indian Economy Its Growing Dimensions.**, Dhar P. K., Kalyani Publishers, New Delhi
10. **Datt&Sundharam's Indian Economy**, GauravDatt&AshwiniMahajan, S. Chand & Company Ltd., New Delhi
11. **Industrial Economics**, Singh A & A.N. Sadhu, Himalaya Publishing House Pvt. Ltd., Bombay
12. **Indian Economy- Its Development Experience.**, Puri V. K., Mishra S. K., Himalaya Publishing House Pvt. Ltd., Mumbai
13. **Indian Economy**, Tandon B. B., Tandon K. K., McGraw Hill Publishing Company Ltd., New Delhi
14. **Indian Economy: Problems of Development & Planning.**, Agrawal A. N., New Age International, New Delhi

15. India's Economic Policies., Jalan B., Viking, New Delhi

16. Industrial Economics – Indian Perspective, Francis Cherunilam, Himalaya Publishing House.

WEB REFERENCES:

Sr. no	Lectures	Films	Animation	PPTs	Articles
1	<a href="http://www.youtube.com/user/TheMrunalPatel">www.youtube.com/user/TheMrunalPatel</a>	<a href="http://www.pbs.org/independents/blogs/earth-day-watch...">www.pbs.org/independents/blogs/earth-day-watch...</a>	<a href="http://Eprints.manipal.edu/78288/1/search_paper_final[1].pdf">Eprints.manipal.edu/78288/1/search_paper_final[1].pdf</a>	<a href="http://www.learnpick.in/.../1691/environmental-issues-india">www.learnpick.in/.../1691/environmental-issues-india</a>	<a href="http://www.preservearticles.com/economics/problems-in...">www.preservearticles.com/economics/problems-in...</a>
2	<a href="http://www.weforum.org/agenda/2017/10/eight-key-facts...">www.weforum.org/agenda/2017/10/eight-key-facts...</a>	<a href="http://www.imdb.com/search/keyword/?keywords=industrial...">www.imdb.com/search/keyword/?keywords=industrial...</a>	<a href="http://www.bbvaopenmind.com/en/technology/innovation/7">www.bbvaopenmind.com/en/technology/innovation/7</a>	<a href="http://www.slideshare.net/luxminy/industrial...">www.slideshare.net/luxminy/industrial...</a>	<a href="http://www.yourarticlelibrary.com/industries/industrialization...">www.yourarticlelibrary.com/industries/industrialization...</a>
3	<a href="http://www.toppr.com/.../indian-industrial-policies">www.toppr.com/.../indian-industrial-policies</a>	<a href="http://www.youtube.com/watch?v=jN2j6diwCFc">www.youtube.com/watch?v=jN2j6diwCFc</a>	<a href="http://www.livemint.com/Consumer/srodhe895MOz60byz2e0DL/...">www.livemint.com/Consumer/srodhe895MOz60byz2e0DL/...</a>	<a href="http://www.learnpick.in/private/documents/ppts/details/...">www.learnpick.in/private/documents/ppts/details/...</a>	<a href="http://www.researchgate.net/publication/316284188_Major...">www.researchgate.net/publication/316284188_Major...</a>
4	<a href="http://www.youtube.com/watch?v=yqzzqbkv16c">www.youtube.com/watch?v=yqzzqbkv16c</a>	<a href="http://www.youtube.com/watch?v=W7Mfznn9OkM">www.youtube.com/watch?v=W7Mfznn9OkM</a>	---	<a href="http://www.eai.in/ref/ae/wte/typ/clas/india_industrial_wastes.html">www.eai.in/ref/ae/wte/typ/clas/india_industrial_wastes.html</a>	<a href="http://www.yourarticlelibrary.com/industries/indian-industries...">www.yourarticlelibrary.com/industries/indian-industries...</a>

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## CORE COMPULSARY SUBJECT

**Subject: Operations Research**

**Course Code: 402 A**

**Total Credits: 04**

**Preamble to the syllabus:** Operations research deals with operational planning control issues and execution. It is needed in all sectors of the society. One of the objectives of the operations manager is that how to make use of the available resources in the best way to achieve certain objectives. Quantitative approaches are indeed needed in tackling many of such problems.

Operations Research (OR) deals with problem formulation and application of analytical methods to assist in decision-making of operational problems in planning and control. The techniques of OR are useful quantitative tools to assist operations managers, and has a wide applicability in engineering, manufacturing, construction, financial and various service sectors.

### Objective of the Program

1. To understand and master the concepts of Operations Research.
2. To inculcate an attitude of enquiry, logical thinking about Quantitative techniques.
3. To develop skills of facing real life problems using operational research techniques.
4. To prepare students to understand the art of applying Operational research techniques.
5. To gain knowledge of Operations research.

Unit No.	Unit Title	Contents
1	<b>Game Theory</b>	Introduction, Characteristics of game theory, Two person zero sum game, Pay off and pay off matrix, saddle point, pure strategy, mixed strategy, value of game, Dominance Principle, Algebraic system of solving 2X2 Game, Numerical problems
2	<b>Linear Programming Problem (L.P.P.)</b>	Introduction, Advantages and Applications of L.P.P., Basic Definitions and Terminology, Formulation, Canonical and Standard forms, Slack, Surplus and Artificial variables, Solution by graphical method (for problems with two variables only), Solution by simplex method (canonical form and two iterations only), degenerate, alternate, unbounded and Infeasible solutions, Big M method, Formation of dual of a L.P.P. and relation between solution of primal and dual, Numerical problems
3.	<b>Transportation Problem (T. P.) and Assignment Problem</b>	Definition, T.P. as L.P.P., balanced and unbalanced T.P., Methods of finding Initial Basic Feasible Solution (I.B.F.S.) - North – West corner method, Matrix Minima Method, Vogel's approximation method, Optimal solution by U-V method, Maximization and degeneracy in T.P. Definition, balanced and unbalanced A.P., Hungarian method, Variations of A.P (maximization and restrictions), Numerical Problems



4.	<b>Project Management and Sequencing</b>	Activity, Event, Loop, Network (definition and drawing), Critical Path Method(CPM): critical activity, critical path, float (free, independent, total) , forward pass and backward pass calculations Programme Evolution and Review Technique PERT): optimistic, pessimistic, most likely time estimates, expected time estimate and its variance Numerical Problems
5.	<b>Sequencing Problems</b>	Assumptions in sequencing model, Basic terminology, n-jobs through two machine problems.

Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used
1	12	ICT
2	14	ICT
3	14	ICT
4	12	ICT
5	8	ICT

#### Method of Evaluation

Subject	Internal Evaluation	External Evaluation
Unit – I	40 %	60 %
Unit – II	40 %	60 %
Unit – III	40 %	60 %
Unit – IV	40 %	60 %
Unit – V	40 %	60 %

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Operations Research	H. A. Taha	Pearson	New York
2.	Operations Research	V.K. Kapoor	Sultan Chand & Sons	New Delhi
3.	Operations Research	Kanti Swarup & Gupta Manmohan & P. K. Gupta	Sultan Chand & Sons	New Delhi
4.	Operations Research	P. K. Gupta & D. S. Hira	S. Chand	New Delhi

Web reference

<http://swayam.gov.in>

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## SPECIAL ELECTIVE SUBJECT - GROUP A (ADVANCED ACCOUNTING & TAXATION)

**Subject: Recent Advances in Accounting, Taxation & Auditing.**

**Course Code: 403**

**Total Credits: 04**

### Objectives of the Course

1. To enable the students to be abreast with the latest advances in the field of Accounting.
2. To acquaint students with the latest trends of accounting adopted by large and small entities worldwide.
3. To enable students to realize the need for upgradation of technology based accounting skills.

Depth of the program – fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Technology based Accounting	Cloud Accounting Block Chain Accounting Role of Artificial Intelligence in Accounting Automated Accounting Process Role of Big Data in Accounting	To gain the knowledge of use of technology for accounting by accountants and accounting firms. To realise the importance of Remote Electronic Accounting.
2	Tax Reforms in India	Goods and Service Tax Reforms Corporate Tax Reforms Personal Tax Reforms	To impart the knowledge of the latest reforms established in the field of accounting, auditing and taxation.
3.	Advanced Accounting for Corporates	Human Resource Accounting Environmental Accounting IPR Accounting ESOP Accounting	To understand the need for adopting new branches of accounting among the corporates.
4.	Emerging Trends in Accounting	Inflation Accounting Creative Accounting Forensic Accounting Lean Accounting	To acquaint students with the future accounting concepts, those of which, may become statutory for certain industries.

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Case studies of few entities using technology based accounting	<a href="https://www.youtube.com/watch?v=Ay3v5OzW0MA">https://www.youtube.com/watch?v=Ay3v5OzW0MA</a>	Project on Companies using automation in accounting process	Students will know the professionalism in Accounting process

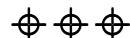
2	12	Comparative(debate) analysis of old and new reforms Group Discussions	<a href="https://www.youtube.com/watch?v=UVs_UrsU5OY">https://www.youtube.com/watch?v=UVs_UrsU5OY</a>	Project on Income Tax Liability for Assessee's with different combination of Incomes under both the optional methods	Students will understand the benefit of new reforms among different stakeholders.
3	12	Power point presentations by the students	<a href="https://www.youtube.com/results?search_query=human+resource+accounting+with+animation">https://www.youtube.com/results?search_query=human+resource+accounting+with+animation</a>	Project on the topic employee stock option policies by any two corporates	Students will understand the application of new accounting methods for better efficacy building
4	12	Quiz and competition based activity	<a href="https://www.youtube.com/watch?v=zX8Ds6O8Oos">https://www.youtube.com/watch?v=zX8Ds6O8Oos</a>	Locate companies national or international who have adopted Lean Accounting.	Students will understand the need for emerging trends in accountancy

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Written Tests, Case Study , Home Assignment 40%	Written Exam 60%	E – commerce for Accounting needs
Unit – II	Written Tests, Group Discussion, Home Assignment 40%	Written Exam 60%	Goods and Service Tax Personal Tax Planning
Unit – III	Written Tests, PPT , Home Assignment 40%	Written Exam 60%	Not Applicable
Unit – IV	Written Tests, Online Quiz, Home Assignment 40%	Written Exam 60%	Not Applicable

### References

Sr. No.	Title of the Journal	Author/s	Place
1.	Journal of Accounting & Finance	Accounting Research Foundation	Jaipur
2.	Journal of Indian Accounting Association	Indian Accounting Association	Jaipur
3.	Management Accountant	ICWA	Kolkatta
4.	The Chartered Accountant	The ICAI	New Delhi
5.	The Accounting World	The ICAI University Press	Dehradun



**SPECIAL ELECTIVE SUBJECT - GROUP A (ADVANCED ACCOUNTING & TAXATION)**  
**Subject: PROJECT WORK / CASE STUDIES      Course Code: 404      Total Credits: 04**

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**Project Work in Accounting and Taxation**

A student can select any topic relating to principles practices and procedures of accounting auditing taxation and management accounting. Any topic from the syllabus of the papers studied at M Com. Part One or Part Two under special paper Accountancy & Taxation can be of a use. Pick up any unit studied and try to connect it to commercial word around e.g. in taxation a student has studied taxation of a company, then he can select a topic Tax Planning of a particular company or a study of taxation of an educational institute. On this line following areas have been listed out for project work in Accountancy.

**Area of Project Work in Accounting:-**

**Following is the list of topics for project work in Accounting.**

1. Financial statement Analysis of –
  - a. A Limited Company for 5 years
  - b. Five Companies of five different industries
  - c. Five companies of one industry e.g. Automobile, Engineering, Textile
  - d. Five banks from Private sector/Co-op. sector
2. Study of Working Capital Management of a large Company.
3. Study of Budgetary Control System of four Companies
4. Study of Management Information System of four Companies.
5. Procedure of preparation of Consolidated Balance Sheet by Holding Company having two / three subsidiaries companies.
6. Valuation of Shares of 10 unlisted Companies.
7. A study of Amalgamation/Merger of procedure of two Companies (Accounting procedure)
8. A comparative study of Accounting System of Hotel industry – Five Star, Three stars, large Hotel and small Hotel.
9. Comparative study of Accounting of Hospitals from Private sector, Trust and Small Hospital.
10. Study of Accounting for Grants to school, college, and institute.
11. Application of Inflation Accounting to a large Company's Balance Sheet.

12. Human Resource Accounting for Software, Marketing, Consulting Company
13. Preparation of Value Added Statements of a Company and its comparison with Conventional Accounting Statement.
14. Preparation of Economic Value Added Statement of a Company and its comparison with Conventional Accounting Statement.
15. A study of Application of Accounting Standards of five Companies.
16. Audit planning of five firms of Auditors.
17. A study internal Audit system of four companies.
18. Tax planning of 10 assesses
19. Tax Planning regarding purchase of House Property.
20. Tax planning of Partnership Firm/ Limited Company.
21. Taxation of Public Trust
22. A study of Perquisites and its impact on Taxable Income Employees from 10 different companies.
23. A study of ten Export Oriented Units from Taxation point of view.
24. Financial viability of five Co-operative Sugar Factories.
25. Comparative Study of Taxable Income of Individuals and HUFF
26. Problem of units paying Service Tax
27. Accounting for Tour and Travel business.
28. Comparative Study of Housing Loan Schemes of Banks and Financial Institutions.
29. Comparative Study of Fees Structure of Non-grant and Grant in Aid Educational Institutions.
30. A survey of 20 shareholders regarding utility of Published Annual Accounts of Company.
31. Study of Investment Pattern of 20 Individuals from Taxation point of view.
32. Preparation of Project Report for Small Scale Industry, Hotel, Xeroxing business, Computer Institute, Hospital, Transport Business, Petrol Pump
33. Ascertainment of Cost of Capital from Annual Accounts of five Companies.
34. A financial viability study of Sick Industrial Companies.
35. A study of Tax Audit Report of Non-Corporate and Corporate Assesses.
36. A study of Secretarial Audit Report of five companies.

37. A study of Cost Audit Report of two companies.
38. A study of Government system Audit of Commercial Undertaking / Local bodies.
39. Commentary on Public Accounts Committee of Central Government.
40. A comparative study of different Accounts Software e.g. Tally, SAP, ERP, Local Software etc.
41. Consolidation procedure of different units of an Educational Society.
42. A study of Significant Accounting Policies of different Companies from different Industries.
43. A study of Qualified Audit Reports of different Companies.
44. Comparative study of Advances of Credit Co-op. Societies and Urban Co-op Banks.
45. Preparation of Project Report of Agro based industries, Poultry Farming, Dairy business, Nursery, Horticulture farm.
46. A study of Vehicle Loan schemes of different Banks.
47. Excise Accounting at manufacturing unit.
48. A comparative study of NPA of Urban Co-op Banks
49. A study of Corporate Responsibility Statements of Annual Accounts of 10 Companies
50. A study of Cash Flow Statement from Annual Accounts of 10 Companies.
51. Accounting of Leasing and Finance Companies.
52. A study of Accounting of Electricity Company, (Tata Power, Ahmedabad Electricity Power Co. Ltd.)
53. An exemption under Income Tax Act, availed by 10 different assesses.
54. A comparative financial analysis of running of Luxury buses by private operators and State Transport Corporation.
55. Financial Analysis of Produce Exchanges at Taluka Level.
56. Comparative study of Annual Report of 3 Co-op Banks.
57. Comparative study of Annual Report of 3 Limited companies.
58. Various Accounting Policies followed by Financial Institutions.
59. Impact of IRAC Norms of financial position of any co-operative bank over last 3 years.
60. Audit classification of a Credit Co-op. Society for last 2 years.
61. Determination of Taxable Income of a Charitable Hospital as per Section 11, 12, 12A & 35 of I.T. ACT. Act. 1961.

62. Accounting Standards, their application by the limited company to its annual accounts.
63. Comparative study of effect of Depreciation Allowance on Book Profit & taxable profits of a limited company for 3 years including carried forward and set-off.
64. Analysis of any three recent cases decided by High Court.
65. Study of fraud cases detected by application of S.A.P.
66. Comparative study of Financial Statements of Educational Institutions for 2 years.
67. A study on E filing of Tax Returns- Income Tax, GST etc.
68. A study of Computerized Accounting system in any business unit.



## SPECIAL ELECTIVE SUBJECT - GROUP B (Commercial Laws & Practices)

**Subject: Recent Advances in Commercial Laws and Practices Course Code: 405 Total Credits: 04**

**Preamble:** Commercial world is changing with new regulatory mechanism where issues as to Law on Competition, securitization, debt recover from financial institutions etc are becoming important and hence students are expected to be aware of such issues in the contemporary business scenario.

**Objectives of the Program:** To understand purpose, scope and legal framework of law relating Competition, Securitization, debt recovery and Special economic zones and disputes settlement mechanism provided under relevant substantive laws regulating such bodies or authorities.

**Depth of the program:** Fundamental Knowledge, Principles and provisions of relevant policy, statutes and its applicability along with judicial decisions on such issues.

**Lectures:** Each unit shall have equal weightage (i.e.12 Lectures)

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Competition Act, 2002	<b>Competition Act, 2002:</b> Definitions, Prohibition of certain agreements, Prohibition of abuse of dominant position, Regulation of combinations (Ss. 3 to 6), Competition Commission of India. (Ss. 7 to 13) Establishment, Composition, Selection Committee for Chairperson and Members of Committee, Term of Office, Resignation, Removal, Suspension, Restrictions on employment of Chair Person and other members, Appointment, Duties of Director General etc. (Ss. 16 to 17, 41) Duties, Powers, Functions, Meetings and Orders of Commission (Ss. 18 to 20, 22, 31),	<ul style="list-style-type: none"><li>Acquainting students with the Establishment, composition and functioning of Competition Commission of India and its relevance in the present context.</li></ul>



		Acts taking place out of India (Ss. 32) Penalties (Ss. 42 to 48) Competition Appellate Tribunal (Ss. 53A to 53U)	
2	<b>The Special Economic Zones Act, 2005</b>	<b>The Special Economic Zones Act, 2005:</b> Objectives and Definitions(Ss.1 and 2) Establishment of Special Economic Zones(SEZs) (Ss.3 to 7) Constitution of Board of Approval(Ss.8 to 10) Development Commissioner (Ss.11 and 12) Single Window Clearance (Ss.13 to 25) Special Fiscal Provisions for SEZs (Ss26 to 30) SEZ Authority (Ss.31 to 41) Reference of Disputes and Miscellaneous Provisions (Ss.42to 58 and Scheules I to III)	Acquiring conceptual and procedural aspect of SEZs along with their legal provisions as applicable in India.
3.	<b>The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002</b>	<b>The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002:</b> Definition & Importance of Act, Regulation of Securitization and Reconstruction of Financial Assets of Banks & Financial Institutions (Ss. 7 to 12), Enforcement of Security Interest (Ss. 13 to 19) Central Registry (Ss. 20 to 26) Offences and Penalties (Ss. 27 to 30)	Acquiring conceptual and procedural knowledge of The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002
4	<b>The Recovery of Debts Due to</b>	<b>The Recovery of Debts Due to Banks and Financial Institutions Act, 1993:</b>	To understand the powers and functioning of Debts Recovery

<b>Banks and Financial Institutions Act, 1993</b>	Need & Object, Establishment of Tribunal and Appellate Tribunal – Jurisdiction, Powers and Authority of Tribunals- Procedure of Tribunals, Powers of Tribunals, Recovery of Debt Determined by Tribunal.	Tribunals and relevant provisions of the Recovery of Debts Due to Banks and Financial Institutions Act, 1993
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**\*All Acts / Rules / are to be studied with recent amendments**

**Method of Evaluation:**

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit – I	Continuous Evaluation (Written Test etc.)	Written Examination	Diploma in Competition Laws in India
Unit – II	Continuous Evaluation [Class Presentation (PPT) etc.]	Written Examination	Diploma in SEZ and Foreign Investments in India
Unit – III	Continuous Evaluation (Seminar/Workshops etc)	Written Examination	Certificate Course in Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest
Unit – IV	Continuous Evaluation (Viva-Voce etc.)	Written Examination	Online Course on Recovery of Debts Due to Banks and Financial Institutions, MOOCS etc

**References:**

**Suggested web references :** 1. Research Paper: Sezs in india: concept, objectives and strategies (by Dr. R. Shashi kumar

(<https://www.gtap.agecon.purdue.edu/resources/download/4103.pdf>)

2. Booklet -Special Economic Zones,(by Nishith Desai and Associates)

[http://www.nishithdesai.com/fileadmin/user\\_upload/pdfs/Special\\_Economic\\_Zones.pdf](http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Special_Economic_Zones.pdf)

Sr. no	PPTs
1	<a href="https://www.cci.gov.in/sites/default/files/presentation_document/10_cii%2Cmar06_20080710111440.pdf?download=1">https://www.cci.gov.in/sites/default/files/presentation_document/10_cii%2Cmar06_20080710111440.pdf?download=1</a> ( Overview of Competition Law and Policy)
2	<a href="https://www.slideshare.net/AkritiSingh30/debt-recovery-tribunal">https://www.slideshare.net/AkritiSingh30/debt-recovery-tribunal</a>

**Reference Books:**

- 1) Taxman’s Corporate Law, Taxman Allied Services Pvt. Ltd., New Delhi. (Recent Edition).
  - 2) Seth’s Commentaries on Banking Regulatory Act and Allied Banking Laws, Law Publishers (India) Pvt. Ltd., Allahabad.
  - 3) Taxman’s “Banking Law and Practice in India”, India Law House, New Delhi.
  - 4) P. N. Varshney, “Banking Law and Practices”, Sultan Chand & Sons, New Delhi. (2012).
  - 5) Justice A.B.Srivastava & C.S.Lal (Advocate), “Securitisation & Debt Recovery Laws”(Alongwith Allied Acts & Rules) (in 2 Vols.) 10th edition, (2018)
  - 6) Digest on Debt Recovery Laws (1993-2012)Law Publishers(2017)
  - 7) **K B, Nidheesh , “Special Economic Zones in India: Challenges and Prospects” Jain Book Agency,(2016)**
  - 8) **T. Ramappa , “Competition Law in India: Policy, Issues, and Developments” (2013}**
- All bare Acts of respective legislations referred in the syllabus.

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## **SPECIAL ELECTIVE SUBJECT - GROUP B (Commercial Laws & Practices)**

**Subject: Project Work / Case Studies**

**Course Code: 406**

**Total Credits: 04**

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### **Objectives:**

1. To develop research attitude in the minds of students.
2. To enrich the ability of research work among students.

### **Introduction and Objective:**

As a partial fulfillment of University of Pune requirement for M.Com Programme students have to undergo in-plant training of 6 weeks in an organization of repute assigned by the institute or accessible to student. The objective of this activity is to test student's ability to apply theoretical knowledge to practical business situation. Alternatively Students can choose a topic relevant to the subject and research on its regulatory mechanism.

In the light of exposure to different functional areas and research methodology at M.Com Part-I and II Curriculum the students have to collect the data relevant to their topic or problem, analyze the same Methodologically, make intelligent observations and offer some practical suggestions. In order to Complete the task following Report Contents and Chapter Scheme is suggested which can be adopted with or without modification.

### **Report Contents:**

- A. Cover page
- B. Company Certificate
- C. Acknowledgement
- D. Declaration
- E. Executive Summary

Tentative Chapter Scheme:

Chapter 1. Introduction to Study

- Chapter 2. Company Profile
- Chapter 3. Objective of Study
- Chapter 4. Review of literature
- Chapter 5. Research Methodology
- Chapter 6. Data analysis Interpretations
- Chapter 7. Observations and Findings
- Chapter 8. Conclusions and suggestions

**Suggested Topics for the Research Project:**

1. Legal and Regulatory Issues faced by Small and Medium Scale Industries in Pune
2. A Study of the Goods and Service Tax Act, 2017 from the perception of Chartered Accountants and Tax Consultants
3. A Study of Awareness of Hotel businessmen about relevant laws and their legal problems
4. A Study on Traders and Consumers' perception towards the Goods and Service Tax (GST) in Pune
5. A Study of Perception of College Teachers about Procedure of Registration of their Patents
6. Perception of Lawyers about Consumer Protection Bill, 2018
7. A Study on Copyright Act, 1957 in respect of Cinematographic films.
8. A Study of Awareness of Hotel Owners about relevant Laws and their Legal Problems
9. A Study of the Life Insurance Corporation Act, 1956 with reference to Role and Responsibility of LIC Agents
10. Legal and Regulatory Issues faced by Small and Medium Scale Industries in Pune
11. A Study of the Goods and Service Tax Act, 2017 from the perception of Chartered Accountants and Tax Consultants
12. A Study of Awareness of Hotel businessmen about relevant laws and their legal problems
13. A Study on Traders and Consumers' perception towards the Goods and Service Tax(GST)in Pune
14. A Study of Perception of College Teachers about Procedure of Registration of their Patents
15. Perception of Lawyers about Consumer Protection Bill, 2018

16. A Study on Copyright Act, 1957 in respect of books.
17. A Study of Awareness of Hotel Owners about relevant Laws and their Legal Problems
18. A Study of the Life Insurance Corporation Act, 1956 with reference to Role and Responsibility of LIC Agents
19. A Study of Awareness of Hotel Owners about the Food Safety and Standards Act, 2006 in Pune
20. A Study of Copyright Act, 1957 with literary work, Pune
21. A Study of Trademark with reference to Selected Companies from Bajaj Group
22. A Study of Registration of Legal Documents under Registration Act, 1908 with reference to Leave and License Agreement
23. A Study of Patent Laws of few Manufacturers
24. A Study of Cybercrime investigation Cell (Pune) and General Awareness of Cyber Crime among College Students
25. An Analytical Study of Debt Recovery Tribunal, Pune
26. The Impact of WTO on Agriculture and the Role of MSAMB, Pune on Export of Agriculture Produce
27. A Study of Impact of E-Commerce on Working of Pune Stock Exchange
28. A Study of SEBI's Role in the changing Business environment
29. A Research on Cyber Crime in urban area
30. A Study on Trademark and Its Awareness among the Businessmen, Traders and Companies
31. An Analytical Study of Use of Information Technology in the administration of the Maharashtra State Electricity Board
32. A Study of Impact of Globalization on Manufacturing, Import-Export of Musical Instrument in Pune City
33. A Study of Impact of Trademark on Traders and Consumers.
34. To study General Awareness of Cyber Café Owners/ Occupiers about Cyber Law and Cyber Crime
35. A Study legal aspects of Online Trading of Few Selected Broking Companies in Pune
36. A Study of Impact of E Commerce on Banking Sector
37. Study of Impact of World Trade Organization on international Business

38. Novelty as an Essential Criteria of Patentability: Study of UK, US and Indian Position

39. The Impact of WTO on Indian Education

40. A Study of Patent Act 2005 with Special Reference to Recent Amendments

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## SPECIAL ELECTIVE SUBJECT - GROUP C (Advanced Cost Accounting & Cost system)

**Subject: Recent Advances in Cost Auditing and Cost System**

**Course Code: 407**

**Total Credits: 04**

### Objectives:

1. To aware students with the recent trends in Cost Accounting and Cost Systems.
2. To acquaint students with Standards and applications Of Cost Accounting
3. To familiarise students with GST and Productive Audit.
4. To acquaint students with recent trends in Cost Accounting.

Unit No	Unit Title	Contents	Skill to developed
1	<b>Cost Accounting Standards (CAS)</b>	2,4,5,and 8 to24 (Drafts And Amendments' Subjects to Finalization from time to time)	Knowledge of Application of Cost Accounting Standards
2	<b>Basics of GST audit And Productive Audit.</b>	<ul style="list-style-type: none"><li>• Meaning of GST Audit, Its applicability, Qualification and Disqualification of Auditor .Features, Scope and Benefits</li><li>• Procedure for conducting of and reporting under GST Audit</li><li>• Meaning, Features, scope and Benefits of Productive Audit.</li><li>• Problems of Productive Audit and Means to overcome these Problems.</li></ul>	Detail understanding of GST and Productive Audit
3	<b>Enterprise Resource Planning (ERP)</b>	<ul style="list-style-type: none"><li>• Introduction, Meaning, Features, Benefits &amp; Limitations Of ERP</li><li>• Benefits of Implementation of ERP</li><li>• E-Costing -Features</li></ul>	In -Depth knowledge of ERP
4	<b>Recent Trends In Cost Accounting</b>	<b>Introduction to Various techniques &amp; tools of Manufacturing and its impact On Costing :</b> <ul style="list-style-type: none"><li>• Six Sigma</li><li>• 5 S</li><li>• TQM</li><li>• Kaizen Technique.</li><li>• Lean Manufacturing</li><li>• Total Productive Maintenance</li><li>• Business Process Re-Engineering</li><li>• Artificial Intelligence</li><li>• Robotics Manufacturing</li></ul>	Knowledge about recent trends in Cost Accounting.



### Teaching Methodology

Sr No	Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1	14	PPT	You tube lectures	PPT	Understand Cost Accounting Standards in depth
2	12	Guest Lecture by professionals.		Group Discussion	Understand GST and Productive Audit
3	10	Group discussion		Case studies	Understanding ERP
4	12	Study from web site how various companies apply recent trends in their organization.		Assignment	Able to understand different areas of recent changes

### Methods of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested AD-On Course
For all Units	Multiple Choice Questions, Written Test, Internal Examination, PPT based presentation etc.	SPPU	Visit to industries and prepare a report on the visit.

### References

Sr. No	Title of the Book	Author	Publisher	Place
1	Cost Accounting Standard	Institute Of Cost Accountant Of India Kolkata	ICAI INDIA	KOLKATA
2	A Handbook on Goods & Services Tax - GST	CA PUSHPENDRA SISODIA	Bharat Law House Pvt. Ltd.	

3	Enterprise Resource Planning	Veena Bansal	Pearson India	New Delhi
4	Bharat's GST Laws with rate of Tax on Goods and Services (Amended Bare Act Rule)	Bharat Law House	Bharat Law House Pvt. ltd	NEW DELHI
5	Lean Six Sigma	Bass and Issa	Mcgraw Hill	Noida
7	A Birds Eye view of GST	R.K.Jha and P.N.Singh	Asia Law House	Hydrabad
6	<b>Total Productive Maintenance</b>	<u>K.S. MADHAVAN</u> (AUTHOR),	SHINGO INSTITUTE OF JAPANESE MANAGEMENT	AMAZON

**Web References:**

<https://icmai.in>

[www.globalcma.in](http://www.globalcma.in)

[www.globalcma.in](http://www.globalcma.in)

<https://www.acieta.com/why-robotic-automation/robotics-manufacturing>

**Note:** 100 % of marks are allotted to Theory only.

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**SPECIAL ELECTIVE SUBJECT - GROUP C (Advanced Cost Accounting & Cost system)**  
**Subject: PROJECT WORK / CASE STUDIES                      Course Code: 408                      Total Credits: 04**

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Project Work Will Carry 100 Marks. For Regular Students, Project Work Is Compulsory. The Option Of Case Studies Is Only For The Students Registered As An External Student. 'Students Are Expected To Prepare The Project Report Based On The Field Work And Survey And Studying The Current Trends Under The Guidance Of Their Guide Teacher'. They Will Have To Submit The Report On 31st March Every Year. Project Viva Voce Will Be Conducted At The End Of IV Semester But Before Theory Examination.

**Guidelines Areas of Project Work Marks: 100**

Students are required to Visit a Unit in Concerned Industry and submit their report on any of the following project topics.

1. Marginal Costing: Techniques Based on Annual Reports of Listed Companies. To Study the Application of Marginal Costing in Taking Managerial Decision.
2. Budgetary Control: Study of Procedure of Audit. A Study of Budgetary Control System Established therein and used for cost Control Purpose.
3. Statement of Cost of Production of the taxable goods(refer Rule 30 of the CGST Rules, 2017)
4. Environmental Audit.
5. Cost Audit: Audit Programme Understanding the Procedure of Cost Audit, Cost Accounting Record Rules of the Respective Industry and Preparation of Cost Audit Report.
6. Process Costing: process industry & Understanding the Use of Process Costing Method in the factory, Cost Analysis at Each Stage in Particular and Cost Analysis in General done inthe Sugar Factory.
7. Pricing Decisions: Visit to any Industry Understanding the different Methods and Techniques used by the Concern in pricing different Products.
8. Cost Control and Cost Reduction: Visit to any Manufacturing Concern and Understanding the different Methods used fruitfully by the Priority in Cost Control and Cost Reduction. **ISOProcedure.**
9. Contract Costing: Visit to Any Construction / Contracting firm and Understanding Ascertainment of Contract Cost, Allocation and Apportionment of different Expenses and Apportionment of profit on Incomplete Contract.

10. Costing in Service Industry: Visit to any Hotel, Airlines, Hospitals or any other Service Industry and Understanding the Costing Methods used in the Concerned Service Industry and its Utility to Ascertain the Cost of Service Rendered as well as for controlling the Cost.
11. Recent Developments in Cost Accounting.
12. Application of Activity Based Costing.
13. Study of Job Evaluation and Merit Rating in Industrial Unit:
14. Application to Agro Based Industries i.e. fishery, dairy, poultry etc.
15. Cost Reduction Program and its Implementation:
16. Study of Costing Techniques and its use in Decision Making:
17. Application of Onion – Cash Crop, Sugarcane, Cotton, Horticulture etc.
18. Study of Various Measurement Policies (Risk Management)
19. Study of minimum wages.
20. Study of fixation or fees of Professional Courses,
21. Study of Cost Associate with Finance of Any Company
22. Study of Cost Structure of Different Companies from same Industry.
23. CSR under industry.

**Note:**

- **The aforementioned titles are just for examples. Students can choose any other topic relevant to the syllabus in consultation with subject teacher.**
- **50 % Marks are allotted to Viva-Voce whereas rest 50 % for the Project Work conducted by the students.**

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## SPECIAL ELECTIVE SUBJECT - Group D (Co-operation & Rural Development)

### SUBJECT: RECENT ADVANCES IN CO-OPERATIVE AND RURAL DEVELOPMENT

Course Code: 409

Total Credits: 04

#### Objectives of the Course:

1. To create awareness regarding globalization and its effects on rural development.
2. To study and projects in the field of Co-operation and recent advances in rural development.

Unit No.	Unit Title	Content	Purpose/skills to be developed
1.	<b>Social and Economical Aspect</b>	<b>Social and Economical Aspect:</b> 1.1 Theory and Practice of co-operative principles & current scenario 1.2 Issues of economic viability of co-operative institutions 1.3 Issues of non-viability and sick co-operative units 1.4 Social responsibility of co-operative institutions	<ol style="list-style-type: none"><li>1. To understand economic viability of co-op. institutions</li><li>2. To understand the social responsibility of co-op. institutions</li></ol>
2.	<b>Globalization and Co-operatives</b>	<b>Globalization and Co-operatives:</b> 2.1 Progress of Globalization and its impact on Co-operative institutions 2.2 Challenges of global competition 2.3 Meeting the global challenges 2.4 New Management Techniques 2.5 Scope of six Sigma in Co-Operative Management 2.6 Co-operative leadership in global era	<ol style="list-style-type: none"><li>1. To understand the impact of globalization on co-op. institutions.</li><li>2. To understand the challenges posed by globalization &amp; remedies</li><li>3. To study the changing role of co-operative leadership with respect to globalization &amp; its effects</li></ol>
3.	<b>Role of Self Help Groups in Rural Development</b>	<b>Role of Self Help Groups in Rural Development:</b> 3.1 Formation & organization 3.2 Self Help groups - innovation for rural development 3.3 Types of Micro Finance- Meaning & Definition 3.4 Micro finance and SHGs 3.5 Development of banking habits among rural people 3.6 Rural artisans and SHGs	<ol style="list-style-type: none"><li>1. To understand the meaning &amp; evolution of Self Help Groups.</li><li>2. To understand the role of SHGs in the development of various co-op. movements &amp; societies</li></ol>

		3.7 Women empowerment through SHGs 3.8 Marketing of SHG products 3.9 Performance	
<b>4.</b>	<b>Rural distress and Government Measures</b>	<b>Issues in Rural Co-operative Development &amp; Government measures:</b> 1.1 Reports of various committees regarding farmer's suicides 1.2 Causes of farmer's suicides 1.3 Short and long term Governmental measures for redressing rural distress <b>1.4 Sustainable Rural development</b>	1. To study various hindrances in development of rural co-op. sector. 2. To understand the causes of farmer's suicides 3. To study various governmental measures for the development of rural co-op. sector 4. To understand the progress & future course of action for sustainable rural development.

### Teaching Methodology:

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Group discussion & presentations	----	Preparing report on group discussion & presentations	Awareness about recent trends in social & economic aspect
2	12	Guest lecture followed by group discussion	Short films available on internet	Preparing report on group discussion & presentations	Awareness about recent trends and globalization
3	12	Visit to couple of SHGs	Short films available on internet.	Preparing report on Visit made.	Enhanced awareness about functions, need & problems of SHGs
4	12	Group discussion & visit to the nearby village where Rural distress is reported	----	Report on the functioning of NGO working in this field	Greater understanding about rural distress

### Recommended Books:-

1. Bedi R.D.- Theory, History and Practice of Co-operation
2. N.L.Ghorpade- Co-operation and Rural Development
3. Dubhashi P.R.- Principles and philosophy of co-operation
4. Dubhashi P.R.- Rural Development & administration in India

5. B.K.Sinha- Indian Co-operation
6. S.K.Day- Power of People
7. Rajeshwar- Community development, Panchayat raj, Sahakarismaj
8. S.K.Goyal- Co-operative farming in India
9. Dr. Dhiraj Zalte& Others-Theory & Practice of Cooperation Prashant Publication

**Journals:**

1. Journal of Rural Development, Hyderabad (Rajendranagar)
2. Journal of Co-operative Perspective, Pune.
3. The Indian Journal of Commerce, New Delhi.
4. Journal of Sahakari Maharashtra, Pun

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## SPECIAL ELECTIVE SUBJECT - Group D (Co-operation & Rural Development)

**SUBJECT: Project Work/ Case Studies**

**Course Code: 410**

**Total Credits: 04**

### Objectives:

1. To develop research attitude of the students.
2. To enrich the ability of research work among the students

### Introduction:

As a partial fulfillment of University of Pune requirement for M.Com Programme students have to undergo in-plant training of 6 weeks in an organization of repute assigned by the institute or accessible to student. The objective of this activity is to test student's ability to apply theoretical knowledge to Co-operation and Rural Development. In the light of exposure to different functional areas and research methodology at M.Com Part- II curriculum the students have to collect the data relevant to their topic or problem, analyze the same methodologically, make intelligent observations and offer some practical suggestions. In order to complete the task following Report Contents and Chapter Scheme is suggested which can be adopted with or without modification.

### Report Contents:

- A. Cover Page
- B. Company Certificate
- C. Guide Certificate
- D. Acknowledgement
- E. Declaration
- F. Executive Summary

### Tentative Chapter Scheme:

Unit No.	Unit Title	Contents
1	<b>Introduction</b>	Selection and relevance of the problem, historical background of the problem, definition/s of related aspects, characteristics, different concepts pertaining to the problem etc can be covered by the candidate
2	<b>Research Methodology</b>	It include Objectives, Hypothesis, Scope of the study, Selection of the problem, Sample size, Data collection, Tabulation of data, Techniques and tools to be used, limitations of the study, significance of the study etc



5.	<b>Literature Review</b>	Provide information about studies done on the respective issue. This would assist students to undertake further study on same issue.
6.	<b>Data Presentation and Data Analysis</b>	The analysis pertaining to collected data will be done by the students, the application of selected tools or techniques
7.	<b>Conclusion</b>	Findings of work will be covered by the candidate and suggestion will be mentioned by the candidate to validate the objectives and hypotheses.
8.	<b>Bibliography</b>	It include a list of all of the sources you have used whether referenced or not in the process of research work
9.	<b>Appendix</b>	An appendix contains supplementary material that is not an essential part of the text itself but which may be helpful in providing a more comprehensive understanding of the research problem

### **Project Report (For Regular Students)**

There will be a project work carrying 100 marks for internal students only. The students will have to select a subject from any area of the syllabi for Business Entrepreneurship. The students will have to work under the guidance of concerned subject teacher.

The Research project work will carry total 100 marks.

### **Research project Division of Marks**

<b>Division of Marks</b>	<b>Marks</b>
Synopsis with working bibliography (Internal Assessment)	40 Marks
A full project Report (Minimum 50-80 pages)	40 Marks
Viva Voce	20 Marks
Total	100 Marks

Project Viva Voce to be conducted by internal teacher and external teacher (examiner) appointer by the University.

### Case Studies (Only for External Students)

There will be a paper of case studies for external students. The paper will be set for 80 marks to be converted in to 100 marks. Total 20 cases will be selected from standard book for study. In the question paper 3 cases out of 20 (twenty) cases will be covered, each carrying twenty (20) marks. One unseen case will also be covered and it will carry twenty (20) marks.

**Note:** The paper of case studies will be offered only by external students only.

### References:-

Sr. No	Title of Book	Author/s	Publication	Place
1	Research Methodology-Methods & Techniques	C. R. Kothari	New Age International Publishers	New Delhi
2	Research Methodology	Dipak Kumar Bhattacharyya	Excel Books	New Delhi
3	Research Methodology-Methods & Techniques	Anil Kumar Gupta	Value Education of India	New Delhi
4	Research Methodology-Concepts and Cases	Deepak Chawla & Neena Sondhi	Vikas Publishing House Pvt. Ltd	New Delhi
5	Research Methods	Ram Ahuja	Rawat Publications,	Jaipur
6	Methodology & Techniques of Social Research,	P. L. Bhandarkar, T. S. Wilkison & D. K. Laldas	Himalaya Publishing House	Mumbai
7	Legal Research and Writing Methods	Anwarul Yaqin	LexisNexis Butterworths	Nagpur
8	Business Research Methods,	Donald R. Cooper & Pamela S. Schindler	Tata McGraw- Hill Edition	New Delhi
9	Investigating the Social World-The Process and Practice of Research	Russell K. Schutt	Sage Publication	New Delhi
10	Business Research Methods	Alan Bryman & Emma Bell	Oxford University Press	New York



## SPECIAL ELECTIVE SUBJECT - GROUP E (BUSINESS PRACTICES & ENVIRONMENT)

**Subject: Recent Advances in Business Practices and Environment Course Code: 411 Total Credits: 04**

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### Objectives of the Course:

- a) To provide knowledge and understanding of Recent Advances in Business Practices and Environment.
- b) To understand the Maharashtra New Industrial Policy 2019.
- c) To study the various Schemes of MSME. (Micro, Small, & Medium Enterprises) and Pradhan Mantri Mudra Yojana 2015.
- d) To know the concept of Environment Audit and Corporate Governance.

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Maharashtra New Industrial, policy 2019.</b>	Objectives or Target of New Policy. A) Promotion of Thrust Areas. 1) Agro – Tourism 2) Agro processing Policy 3) Textile Policy. 4) Retail Policy. C) Large Scale Industry, Mega and Ultra Mega Projects. D) Incentives.	i. To understand the Objectives or Target of Maharashtra New Industrial Policy 2019. ii. To understand the Provisions for Promotion of Various Thrust Area.
2	<b>Recent Schemes of Development of Micro Small &amp; Medium Enterprises (MSME).</b>	A) SME Divisions Schemes-Descriptions, Nature of Assistance, Who and How Apply. 1. Assistance to Training Institutions (ATI) 2. Marketing Assistance. B) Fiscal Incentives for Micro, Small and Medium Enterprises and Small Industries. C) Development Commissioner Schemes 1) Credit Guarantee. 2) Micro and Small Enterprises Cluster Development Programme. 3) Micro Finance Programme D) Rajeev Gandhi Udyami Mitra Scheme (RGUMI). E) Pradhan Mantri Mudra Yojana 2015 –Eligibility- Mudra Bank-Functions of Mudra Bank-Mudra Loan- Types & Features of Mudra Loan. <b>* New Package of Central Government on 13 May 2020 for MSME for remedies to reduce Covid19 Lockdown effects.</b>	i. To understand the Description, Nature of Recent Schemes of Development of Micro, Small and Medium Enterprises. ii. To understand the Fiscal Incentives for Micro, Small and Medium Enterprises and Small Industries. iii. To understand the Rajiv Gandhi Udyam Mitra Scheme. iv. To Know about Pradhan Mantri Mudra Yojana 2015 and Functions of Mudra Bank.

3	<b>A) Marketing Assistance. B) NSIC –National Small Industries Corporation Schemes-</b>	<b>A)NSIC Schemes :</b> 1)Bank Credit Facilitation 2)Single Point Registration 3)Prime Minister`s Employment Generation Programme.(PMEGP) 4)Coir Vikas Yojana –Skill Upgradation and Mahila Coir Yojana 5) IT Incubator B) Gram Udyog Vasahats, Urban Haat. C) H.R. initiatives - Labour Market Information cell (LMIC), Service training institute (STI)	<ul style="list-style-type: none"> <li>i. To Understand the Marketing Assistance</li> <li>ii. To understand the Corporation Schemes of NSIC.</li> <li>iii. To understand the various H.R. Initiatives, about LMIC and STI.</li> </ul>
4	<b>Environment Audit&amp; Corporate Governance.</b>	Nature – Scope-Goal - Necessity & importance – Types – Limitation - Role & implication -Transparency & corporate discloser – ISO 14000 Nominee Direct role. Good Corporate Governance-Recent Development in Corporate Governance in India.	<ul style="list-style-type: none"> <li>i. To understand the Nature – Scope-Goal- Necessity &amp; importance – Types – Limitations of Environment Audit.</li> <li>ii. To study of the ISO 14000</li> <li>iii. To gain fundamental knowledge about the Corporate Governance in India.</li> </ul>

#### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Pre reading, Class discussion, examples from real life through newspapers and internet Resources. About Maharashtra New Industrial Policy 2019.	Film Show on Aspects of Maharashtra New Industrial Policy 2019	Project on Provisions of Maharashtra New Industrial Policy 2019	Understanding of basic knowledge of Maharashtra New Industrial Policy 2019.
2	12	Guest Lectures on Recent Schemes of Development of Micro Small & Medium Enterprises (MSME). Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies	You Tube Video on Recent Schemes of Development of Micro Small & Medium Enterprises (MSME).	Project Report on SME Divisions Schemes of Assistance, Who and How Apply.	Understanding of basic knowledge of Recent Schemes of Development of Micro Small & Medium Enterprises (MSME). And Pradhan Mantri Mudra Yojana 2015.
3	12	.Guest Lecture on Marketing Assistance. NSIC –National Small Industries	PPT on Marketing Assistance. NSIC –National Small Industries.	Project Report on Corporation Schemes and Gram Udyog Vasahats, Urban Haat.	Evaluate the performance of application of Govt.Policies.

4	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies.	Presentation on Scope-Goal-Necessity & importance – Types – Limitation - Role & implication Environment Audit& Corporate Governance	Project on Review Environment Audit& Corporate Governance	Understanding the importance, scope, effects and Role & implication of Environment Audit& Corporate Governance.
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**References:-**

1. Maharashtra New Industrial Policy 2019 Handbook <https://home.kpmg/content/dam/kpmg/in/pdf/2019/04/KPMG-Flash-News-Maharashtra-Industrial-Policy-2019-2.pdf>. Google Website
2. Ministry of Micro, Small &Medium Enterprises Schemes 2015. Pradhan Mantri Mudra Yojana 2015 [https://msme.gov.in/sites/default/files/MSME\\_Schemes\\_English\\_0.pdf](https://msme.gov.in/sites/default/files/MSME_Schemes_English_0.pdf)
3. Business Environment Audit Text & Cases Francis Cherunilam Himalaya Publishing House Pvt.Ltd. Mumbai <https://vikaspedia.in/social-welfare/financial-inclusion/pradhan-mantri-mudra-yojana>. Google Website
4. Business Environment Challenges, Elliaon Edward Arnold ,Asia Publishing House Mumbai.
5. Environmental auditing: effectiveness, objectivity, and transparency, Cook W, Bommel S V, Turnhout. Asia Publishing House Mumbai
6. Corporate Governance. <https://www.corpgov.net/library/corporate-governance-books-online/> Google Website
7. Auditing & Corporate Governance <http://www.himpub.com/documents/Chapter3501.pdf> Himalaya Publishing House Pvt.Ltd. Mumbai



## **SPECIAL ELECTIVE SUBJECT - GROUP E (BUSINESS PRACTICES & ENVIRONMENT)**

**Subject: Project Work/ Case Studies**

**Course Code: 412**

**Total Credits: 04**

### **Objectives of the Course:**

- 1) To provide an opportunity to investigate an issue that excited student interest to a depth.
- 2) To develop interest of to become successful entrepreneur.

### **Introduction:**

As a partial fulfillments of University of Pune requirement for M.Com Programme students have to undergo in-plant training of 6 weeks in an organization of repute assigned by the institute or accessible to student. The objective of this activity is to test student's ability to apply theoretical knowledge to practical business situation. In the light of exposure to different functional areas and research methodology at M.Com Part- II curriculum the students have to collect the data relevant to their topic or problem, analyze the same methodologically, make intelligent observations and offer some practical suggestions. In order to complete the task following Report Contents and Chapter Scheme is suggested which can be adopted with or without modification.

### **Report Contents:**

- A. Cover Page
- B. Company Certificate
- C. Guide Certificate
- D. Acknowledgement
- E. Declaration
- F. Executive Summary

### **Tentative Chapter Scheme:**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>
1	<b>Introduction</b>	Selection and relevance of the problem, historical background of the problem, definition/s of related aspects, characteristics, different concepts pertaining to the problem etc can be covered by the candidate

2	<b>Research Methodology</b>	It include Objectives, Hypothesis, Scope of the study, Selection of the problem, Sample size, Data collection, Tabulation of data, Techniques and tools to be used, limitations of the study, significance of the study etc
10.	<b>Literature Review</b>	Provide information about studies done on the respective issue. This would assist students to undertake further study on same issue.
11.	<b>Data Presentation and Data Analysis</b>	The analysis pertaining to collected data will be done by the students, the application of selected tools or techniques
12.	<b>Conclusion</b>	Findings of work will be covered by the candidate and suggestion will be mentioned by the candidate to validate the objectives and hypotheses.
13.	<b>Bibliography</b>	It include a list of all of the sources you have used whether referenced or not in the process of research work
14.	<b>Appendix</b>	An appendix contains supplementary material that is not an essential part of the text itself but which may be helpful in providing a more comprehensive understanding of the research problem

### **Project Report (For Regular Students)**

There will be a project work carrying 100 marks for internal students only. The students will have to select a subject from any area of the syllabi for Business Entrepreneurship. The students will have to work under the guidance of concerned subject teacher. The Research project work will carry total 100 marks.

### **Research project Division of Marks**

<b>Division of Marks</b>	<b>Marks</b>
Synopsis with working bibliography (Internal Assessment)	40 Marks
A full project Report (Minimum 50-80 pages)	40 Marks

Viva Voce	20 Marks
Total	100 Marks

Project Viva Voce to be conducted by internal teacher and external teacher (examiner) appointer by the University.

### Case Studies (Only for External Students)

There will be a paper of case studies for external students. The paper will be set for 80 marks to be converted in to 100 marks. Total 20 cases will be selected from standard book for study. In the question paper 3 cases out of 20 (twenty) cases will be covered, each carrying twenty (20) marks. One unseen case will also be covered and it will carry twenty (20) marks.

**Note:** The paper of case studies will be offered only by external students only.

### References:-

Sr. No	Title of Book	Author/s	Publication	Place
1	Research Methodology-Methods & Techniques	C. R. Kothari	New Age International Publishers	New Delhi
2	Research Methodology	Dipak Kumar Bhattacharyya	Excel Books	New Delhi
3	Research Methodology-Methods & Techniques	Anil Kumar Gupta	Value Education of India	New Delhi
4	Research Methodology-Concepts and Cases	Deepak Chawla & Neena Sondhi	Vikas Publishing House Pvt. Ltd	New Delhi
5	Research Methods	Ram Ahuja	Rawat Publications,	Jaipur
6	Methodology & Techniques of Social Research,	P. L. Bhandarkar, T. S. Wilkison & D. K. Laldas	Himalaya Publishing House	Mumbai
7	Legal Research and Writing Methods	Anwarul Yaqin	LexisNexis Butterworths	Nagpur
8	Business Research Methods,	Donald R. Cooper & Pamela S. Schindler	Tata McGraw- Hill Edition	New Delhi
9	Investigating the Social World-The Process and Practice of Research	Russell K. Schutt	Sage Publication	New Delhi
10	Business Research Methods	Alan Bryman & Emma Bell	Oxford University Press	New York





## SPECIAL ELECTIVE SUBJECT - Group F (Business Administration)

**Subject: Recent Advances in Business Administration**

**Course Code: 413**

**Total Credits: 04**

- Objectives:**
1. To familiarize the students with the recent advancements in business administration
  2. To develop an understanding about tools and their application in the business.
  3. To understand the basic concepts of Change Management and their approaches.
  4. To impart adequate knowledge and analytical of cross cultural Management.
  5. To impart the basic concept and strategies of customer centric Management..
  6. To expose the students to the concept, Innovation Management

Unit No.	Unit Title	Contents	Purpose skills to be developed	Lectures Allotted
1	<b>Contemporary Issues in Business Administration</b>	1.1 Change management – Concept, Significance. Managing change-Important feature 1.2 Principals change Management 1.3 Dimensions Approaches towards managing change 1.4 Futuristic and strategic approach toward changing business environment	<ul style="list-style-type: none"><li>▪ To understand the concept of change management and get the knowledge about the approaches management change and Important feature,,</li><li>▪ To know the various dimensions Approaches towards managing change.</li><li>▪ To get the futuristic and Strategic approaches due technology</li></ul>	12

2	<b>Customer Centric Approach</b>	<p>2.1 Customer centric approach – meaning definition, strategies, internal and external customers, full 360 view of the customer .</p> <p><b>2.2 The challenges of becoming a customer-centric company</b></p> <p>2.3 Best practices to becoming a customer-centric company</p> <p>2.4 Ways to measure the success of a customer-centric company</p>	<ul style="list-style-type: none"> <li>▪ Get well acquainted with the concept strategies internal and external customers in customer centric approach</li> <li>▪ To analyses the challenges before cutomer centeric organization</li> <li>▪ To know the best practices and way to measure the success of customer centric company</li> </ul>	12
3	<b>Cross- Cultural Management System</b>	<p>3.1 Global management system- Concept, &amp;Significance.</p> <p>3.2 Issues in cross cultural management.</p> <p>3.3Acquisition &amp; mergers- Role &amp; importance</p> <p>3.4 Current Trends in acquisitions &amp; mergers on national &amp; international scenario</p>	<ul style="list-style-type: none"> <li>▪ To understand the concept and significance of Global Management.</li> <li>▪ To Know the cross cultural Management issues.</li> <li>▪ To able to aquatint the role, importance and current trends in merger</li> </ul>	12
4	<b>Turn Around and Innovation Management</b>	<p>4.1Turn around Management - Concept &amp; Significance, Techniques prerequisite for success.</p> <p>4.2 Restructuring &amp; Reengineering of business - Concept of innovation, Advantages and Significances of Innovation</p> <p>4.3 Key Steps in Innovation Management</p> <p>4.4 Role of Government and Private Institutions in</p>	<ul style="list-style-type: none"> <li>▪ To know the concept significance and techniques/</li> <li>▪ To able to know the prerequisite for success.</li> <li>▪ To get knowledge about the concept and significance of Restructuring and</li> </ul>	12

		promoting innovation	<p>Reengineering of Business.</p> <ul style="list-style-type: none"> <li>▪ To know the steps on innovation management. And also the role of various institution for promoting.</li> </ul>	
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### Teaching Methodology:

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels.	<ul style="list-style-type: none"> <li>▪ Significance of change management in respect of covid 19</li> <li>▪ Project on covid 19 futuristic and strategic approach of change management.</li> <li>▪ Impact of covid 19 on futuristic and strategic approach towards business environment</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ The Definition and meaning of change management and get the knowledge about the approaches management change and Important feature.</li> <li>▪ Can identify dimensions Approaches towards managing change.</li> <li>▪ Able to cope with the futuristic and Strategic approaches due technology.</li> </ul>

2	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels	<ul style="list-style-type: none"> <li>▪ Project on customer centric par after slowdown of economy</li> <li>▪ Case study approach towards employee as internal customer</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ Define the concept, strategies internal and external customers in customer centric approach</li> <li>▪ Able to know the challenges before customer centric organization</li> <li>▪ Identify the best practices and way to measure the success of customer centric company.</li> </ul>
3	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	Relevant videos on YouTube and specific channels, Grouping for Educational Communication, E-Content, HRD Ministry TV channels	<ul style="list-style-type: none"> <li>▪ Company having cross boundary employees and its approach /its strategies of cross cultural management</li> <li>▪ Case study of acquisition and merger in context of Indian multinational of any company</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ Understand the concept and significance of Global Management.</li> <li>▪ Able to Know the cross cultural Management issues.</li> <li>▪ Able to identify to aquatint the role, importance and current trends in merger</li> </ul>
4	12	Lecture, PPT/ Group Discussion, Library, Problem solving discovery based learning, experimental	Relevant videos on YouTube and specific channels, Grouping for Educational	<ul style="list-style-type: none"> <li>▪ Case study of one company, which contributed in Indian Economy.</li> <li>▪ Project on one</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ Understand the concept significance and techniques of turn around management</li> </ul>

	learning, assessment of portfolios and formative assessment, Case study, Jigsaw reading, Practical based learning	Communication, E-Content, HRD Ministry TV channels	<p>innovative Idea which is useful for solution of business problems..</p> <ul style="list-style-type: none"> <li>▪ Significance of turnaround management after covid 19</li> </ul>	<ul style="list-style-type: none"> <li>▪ Identify the prerequisite for success.</li> <li>▪ Able to identify the concept and significance of Restructuring and Reengineering of Business.</li> <li>▪ Able to cope with the steps of innovation management. And also the role of various institution for promoting.</li> </ul>
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**Methods of Evaluation:**

Unit	Internal Evaluation	External Evaluation	Suggested Add on Courses
I	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
II	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
III	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop
IV	Continuous Evaluation	Written exam as per University Guidelines and Schedule	Related Short Term Course/ Seminar/ Workshop

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## **SPECIAL ELECTIVE SUBJECT - Group F (Business Administration)**

**Subject: Project work / Case Studies**

**Course Code: 414**

**Total Credits: 04**

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There will be a project work carrying 100 marks for internal students only. The students will have to select a subject from any area of the syllabi for Business- Administration. The students will have to work under the guidance of concerned subject teacher. The project will carry total 100 marks out of which sixty marks will be allotted for Project Report and 40 marks will be allotted for Project Viva Voce to be conducted by internal teacher and external teacher (examiner) appointed by the University. Note: The list of suggested areas for project work will be notified in due course. Case Studies: There will be a paper of case studies for external students. The paper will be set for 80 marks- to be converted to 100 marks. Total 20 cases will be selected from standard book for study. In the question paper 3 cases out of 20 (twenty) cases will be covered, each carrying twenty (20) marks. One unseen case also will be covered & it will carry twenty (20) marks. Note: The paper of case studies will be offered only by external students only.

### **BUSINESS ADMINISTRATION – SUGGESTED TOPICS FOR PROJECT REPORT**

#### **CONTENTS:**

- 1.CoverPage
- 2.CompanyCertificate
- 3.Guide Certificate
- 4.Acknowledgement
- 5.Declaration
- 6.Executive Summary

#### **TENTATIVE CHAPTER SCHEM E**

**CHAPTER 1. INTRODUCTION TO STUDY**

**CHAPTER 2. COMPANY PROFILE**

**CHAPTER 3. OBJECTIVES OF STUDY**

**CHAPTER 4. REVIEW OF LITERATURE**

**CHAPTER 5. RESEARCH METHODOLOGY**

**CHAPTER 6. DATA ANALYSIS AND INTERPRETATIONS OBSERVATIONS**

## CHAPTER 7. FINDINGS CONCLUSIONS AND SUGGESTIONS

1. An empirical study on 360 degree performance appraisal in a private sector organization.
2. A study of lower/middle/top level management banks/private/public sector employees job satisfaction
3. A study of stress management related to work of the employees from IT Sector
4. A study on cross cultural management issues in a multinational company.
5. A study of ERP System of a private/public sector organization.
6. A comparative study of the impact of team work in two departments of an organization.
7. A study on overcoming of negative emotions and boosting motivation of managers in private/public sector organization.
8. A study on emotional intelligence amongst female employees at workplace in private/public sector employees.
9. A study of work-life balance of employees in an organization.
10. A study of work culture and work ethics in an organization.
11. A study of impact of Training of employees in an bank/private/public sector organization.
12. A study of impact and role of Job Rotation for the Positive outcome.( A case study)
13. A study on the pros and cons of VRS to employer and employees in an organization- (A case study)
14. A study of the problems involved with the resignation of an employee to both employer and employee.
15. A study on the prospects of manpower planning in organization.
16. A study of the awareness and utility of HRD and HRM in an organization.
17. A study on the problems related to job transfers of employees especially with reference to female employees.
18. An overview of ethics in performance appraisal in an organization.
19. A study of the HR environment of two companies.
20. A Study of the HR challenges in Employing Generation
21. A study of the HR challenges in Indian context.
22. A study of the employee retention strategies of two companies.
23. A study of the impact of change management of an organization.
24. A study of the techniques of turnaround management in an organization.
25. A study of the role and impact of information technology in indigenous and multinational companies.

26. A study of the financial position of a Company
27. A study of the capital structure and cost of capital of a company
28. A study of the working capital management
29. A study of the customer retention techniques adopted by Banks/Insurance/Travel and tourism/Telecom Companies.
30. Analytical study of the CSR practices adopted by companies.
31. A study on nature of organization climate and impact on Job satisfaction of employees.
32. A study on organization behavior & its impact on female employees functioning.
33. A study of organizational problems of the institution and their impact on functioning of role of employee.
34. Analytical study of business ethics practices adopted by companies.
35. A study of office structure and productivity
36. A Study of import and export organization culture
37. Impact of customer satisfaction strategies on customer retention in Bank /Insurance/Travelling /Telecom companies.
38. A study of service providing institute's effectiveness in customer satisfaction
39. Impact of customer satisfaction strategies on customer retention.
40. Assessment of customer satisfaction on Traveling/Banking/Insurance/Telecom industry.
41. A study of stress management related to work of the employees from IT. /Education/Newspaper/Banking /Insurance/Hospital/Travel/any service Sector.
42. A study of Production and Marketing strategies of small /medium / big companies.
43. A case study of any service providing Industries ( Structure, Services, Productivity, Problems, Employability)
44. A study of Impact of quality control on organizational performance.
45. Appraisal of inventory control in manufacturing company.(case study of any company )
46. A study of Impact of production and control on operational cost of any company.
49. A study of the effect of material management techniques on production process.

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## SPECIAL ELECTIVE SUBJECT - Group G (Advanced Banking & Finance)

### Subject: Recent Advances in Banking and Finance

Course Code: 415

Total Credits: 04

Objectives:

1. To enable students understand new developments in banking industry.
2. To keep the students abreast with the innovative practices introduced by RBI in day to day banking in India.
3. To enable the students to understand the various modern services offered by banks.
4. To give exposure of financial services offered by various agencies and financial adviser to students.

#### Skills to be developed:

1. To make aware about recent development in banking.
2. To expose them to technological changes brought in Indian banks.
3. Students shall learn and acquire the knowledge of latest development in Indian money market.
4. Students will acquire skills about recent development in Indian capital market.

Unit No.	Topic	Periods	Teaching Method	Course Outcome
1	<b>Recent Developments in Banking:</b> <b>1.1 Financial inclusion:</b> Concept, Benefits, RBI guidelines, Economic Growth and financial inclusion, constrains. <b>1.2 Regulation with respect to management of NPAs</b> and Maintenance of Capital adequacy norms. Bad assets management (Bad banks or companies). <b>1.3 Basel Norms: III and IV.</b> <b>1.4 Micro Finance Institutions:</b> role, prospectus and containers. <b>1.5 Customer service management:</b> Customer education and Customer Relationship Management. Customers meet, Provisions of Consumer Protection Act. <b>1.6 The Banking Ombudsman Scheme, 2006</b> Concept of CAMELS rating in banks.	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students may understand the importance of Financial inclusion, progress till date of it, and also overview the role of micro financial institutions, customer management.

2	<b>Technological Developments in Banks: Delivery channels</b> <b>2.1 Core Banking,</b> <b>2.2 Tele banking,</b> <b>2.3 Mobile banking,</b> <b>2.4 ATMs,</b> <b>2.5 Internet Banking.</b> <b>2.6 Electronic Funds Transfer: (BCS credit-debit, SWIFT, RTGS, and NEFT)</b>	12	Lecture, PPT, Group Discussion, Library Work, Assignment	Students will be exposed to recent technological development in banking, and various electronic funds transfer.
3	<b>Recent Developments in Money Market:</b> <b>3.1 Role and functions:</b> Call/ Notice / Term policy, Treasury Bills, Commercial paper and Certificate of Deposits. <b>3.2 Collateralized borrowing and lending obligations. (CBLD)</b> <b>3.3 Money Market Mutual Fund.</b> (Repos) Repurchase obligations (Market Repo & Repo with RBI) <b>3.4 Money market derivative and</b> <b>3.5 Money market debt funds</b>	12	Lecture, PPT, Group Discussion, Library Work, Assignment,  Use of internet	Students shall learn recent development in money market and inclusion of modern debt instruments.
4	<b>Recent Developments in Capital Market:</b> <b>4.1 Recent reforms in the capital market</b> with reference to primary market : Book building, Reverse book building mechanism (75%-100%), Green Shoe option, Online IPOs., Grading & IPO's <b>4.2 Secondary Market</b> : organization, Regulation and functions of stock exchanges, listing and trading of securities, the BSE, the NSE, OTCEI, and the interconnected stock exchanges of India. The working of these stock exchanges using network. <b>4.3 Changing trends in foreign institutional investments (FII)</b> Introduction of Depositories and Custodian Demat service, Options and futures trading in equity derivatives market, regulation by SEBI.	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet	Students will understand the Recent developments took place in Indian Capital Market.
	<b>Total</b>	<b>48</b>		

### Recommended Books:

1. Financial Institution and Markets - a Global Perspective - Hazel J. Johnson

2. Foreign Exchange; International Finance-Risk Management-A.V. Rajwade
3. Financial Markets and Institutions- L.M. Bhole
4. International Financial Management-Eun/Resnick
5. International Financial Management, Markets, Institutions-James C. Baker-
6. Reserve Bank of India Bulletin
7. Annual Reports of IMF, World Bank, ADB.
8. Preeti Singh: Investment Management, Himalaya Publishing House, New Delhi.
9. Indian Economy (Latest Edition): Rudder Dutta, Gaurav Dutta, and Sundram, Himalaya Publishing House, New Delhi.

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## SPECIAL ELECTIVE SUBJECT - Group G (Advanced Banking & Finance)

### Subject: Project Work / Case Studies

Course Code: 416

Total Credits: 04

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#### The following are the topics suggested for Project Work:

1. A study of trends in mutual funds
2. Financial Inclusion & unskilled worker.
3. Rural Development & role of NABARD
4. A study of Bank portfolio
5. Banking Development Problems & Perspectives
6. Role of IT in Banking industry: constraints & challenges
7. A study of New Banking products
8. A study of Marketing of Banking products
9. A study of Companies (Amendment) Act 2013 with reference to Banking
10. Capital Adequacy Norms: constraints & challenges
11. Project Evaluation Tools & Techniques
12. Assessment of Financial Health through Ratio Analysis
13. Study of Bank Balance Sheet.
14. Study of Urban Co-Operative Bank.
15. Study of Non-Performing Assets.
16. Study of Capital adequacy of Public sector, Private sector and Co-Operative Banks.
17. Study of Foreign bank branch working in India.
18. Study of forex operation of Indian banks located in your city.
19. Study of National securities depository and Demat Account.
20. Study of Social banking (Prime Minister Rozgar Yojana, Suwarna Jayanti Sahara Rozgar Yojana, NAREGA, The Urban Self employment programe.)
21. Study of Self help group in Maharashtra.
22. Study of Recent Mergers and acquisition in banks.
23. Study of recent mergers of banks and its implication on bank employee.
24. Study of Foreign institutional investments.
25. Study of Recent reforms in capital market.
26. Study of R.B.I. recent monetary policy.
27. Study of Stock Exchange.

28. Study of Non-Banking Finance Companies.
29. Study of Role of N.G.O's.
30. Study of International Financial Institutions.
31. Study of International Investors.
32. Skill Development for unemployment Youth.
33. Study of Self Help Groups.
34. Study of investor's portfolio.
35. Study of investor's awareness and education by SEBI.
36. Study of role of SEBI.
37. Study of different schemes of mutual funds.
38. Study of companies deposits.
39. Study of GDR and ADR
40. Study of FDI.

**Note:**

- Clarity with respect to any topic mentioned above be given by the concerned subject teacher / Guide.
- Student is required to choose one institution / scheme at a time.
- The topics mentioned are for guidelines and the concerned subject teachers have the privilege to choose and suggest any other topic other than the above

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## SPECIAL ELECTIVE SUBJECT - Group H (Advanced Marketing)

**Subject: Recent Advances in Marketing**

**Course Code: 417**

**Total Credits: 04**

### 1. Preamble

After the introduction of new economic policy the extent of competition in the market has increased substantially. Competition is becoming tougher day after day. Therefore every business establishment is required to give more importance to the marketing side compared to the other branches of the business. The heart of business success lies in its marketing. Most aspects of business depend on successful marketing. The overall marketing umbrella covers advertising, public relations, promotions and sales. Marketing is a process by which a product or service is introduced and promoted to potential customers. Without marketing, business may offer the best products or services, but none of the potential customers would know about it. Without marketing, sales may crash and companies may have to close.

Given this, many jobs are available in the marketing field. These jobs require detailed knowledge of marketing. The main aim of this course is creating manpower which will fulfill the demands of the industry in the field of marketing.

### Objectives of the course

1. To facilitate an understanding of the recent trends in marketing
2. To make students aware of the latest changes and challenges in digital marketing.
3. To acquaint students with mechanisms of Delivering Service through Intermediaries and Modern E Channels
4. To help students understand various issues related with sustainable marketing.

Depth of the program – Detailed Knowledge

### Objective of the Program

- To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing strategies
- To develop students' independent logical thinking and facilitate personality development.
- To impart the knowledge about various marketing strategies.
- To impart knowledge about Sustainable Marketing and Value through Customer Service
- To impart in-depth knowledge about digital marketing

Unit No	Unit Title	Contents	Purpose Skills to be developed
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01	Marketing Strategy	-Meaning- Definition – Types of Marketing Strategies. Elements of Marketing Strategy. - Strategies in the Marketing Warfare- Principles of Marketing Warfare -Process of Creating a marketing strategy , Global v/s Local Marketing strategy	To enable the students to understand various types of marketing strategies and the process of creating marketing strategy
02	Sustainable Marketing and value through customer service	-Sustainable Marketing :Concept, Importance , Problems and prospects -Creating Sustainable Value through Customer Service -Sustainable Marketing and Sustainable Development, sustainable Marketing and related ethical issues -Current examples of corporate sustainability endeavors	To enable students about Sustainable Marketing and value through customer service
03	Recent Trends, Changes and Challenges of digital Marketing	-Concept and relevance of Digital Marketing in Modern Times. -Role of a Modern Marketing Manager in the era of digital Marketing with specific reference to social media management and social media audit. -Problems and prospects of Marketing ; advent of artificial intelligence and robotics -A study of some e marketing websites: <a href="http://www.ebay.in">www.ebay.in</a> , <a href="http://www.alibab.com">www.alibab.com</a> , <a href="http://www.flipkart.com">www.flipkart.com</a>	To familiarise students with the developments in digital marketing
04	Delivering service through intermediaries and modern E channels	Customers role in service delivery. Marketing strategies for customer involvement and engagement Customer defined service standards Factors necessary for appropriate service standards Types of customer – defined standards. Development of customer defined standards	To acquaint students with mechanisms of delivering service through intermediaries and modern e channels

Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows	Project	Expected Outcome
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			and AV Applications		
01	12	Guest Lecture, Presentation of the students and also videos which are available on youtube	Videos on Youtube	N.A	Students will understand various types of marketing strategies and the process of creating marketing strategy
02	12	Guest Lecture, Presentation of the students and videos which are available on youtube	Videos on Youtube	Report based on field visit to IT industry	Student will get in depth knowledge about Sustainable Marketing and Value through Customer Service
03	10	Guest Lecture, Case Study Method, Group Discussion	Videos on Youtube	N.A	Students will get acquainted with the latest developments in digital marketing
04	14	Guest Lecture, Case Study Method, Presentation	Videos on Youtube	N.A.	Students will understand ways of delivering Service through Intermediaries and Modern E Channels

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination

### References



No	Title of the Book	Author/s	Publication	Place
1	Customer Relationship Management: Concept & Technologies	Francis Butle	Elsevier	Hungary
2	Customer Relationship Management : A Strategic Approach	Lakshman Jha	Global India Publications Pvt Ltd.	New Delhi
3	Customer Relationship Management: A Global Perspective	Gerhard Rabb, RiadAjami, VidyaranaGargeya	Routledge	London
4	Customer Relationship Management: Emerging Concepts, Tools, and Applications	Jagdish Sheth, Atul Paratiyar	Tata Mc-Graw Hill Publication Company	New Delhi
5	Customer Relationship Management: Concept, Strategy, and Tools	V.Kumar, Werner Reinartz	Elsevier	Hungary
6	Effective Customer Relationship Management	Amy Sauers	Cambria Press	New York
7	Customer Relationship Management	R.K Sungadhi	New Age International Publishers	New Delhi
8	Customer Relationship Management	Subhasish Das	Excel Books	New Delhi
9	Customer Relationship Management Concept & Cases	Alok Kumar Rai	Prentice Hall of India Private Limited,	New Delhi.
10	Customer Relationship Management,	S. Shanmugasundaram	Prentice Hall of India Private Limited,	New Delhi.
11	Marketing Management	Rajan Saxena,	Mc Graw Hill Education Pvt. Ltd,	New Delhi
12	Export Import Procedures and Documentation	Khushpat S Jain	Himalaya Publishing House	New Delhi
13	Services Marketing – Integrating Customer Focus Across the Firm	Valerie A Zeithaml, Mary Jo Bitner, Dwayne D Gremler, Ajay Pandit	Mc Graw Hill Education Pvt. Ltd,	New Delhi
14	Marketing Management ( A south Asian Perspective)	Philip Kotler, Kevin Lane Keller, Abraham Koshy, MithileshwarJha	Pearson.	

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## **SPECIAL ELECTIVE SUBJECT - Group H (Advanced Marketing)**

**Subject: Project Work/ Case Studies**

**Course Code: 418**

**Total Credits: 04**

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Objectives :

1. To develop research attitude of the students.
2. To enrich the ability of research work among the students.

### **Introduction :**

There will be a project work carrying 100 marks. Students will have to select a topic from any area of the syllabi for Marketing. The students will have to work under the guidance of concerned subject teacher. The project will carry a total of 100 marks out of which sixty marks will be allotted for Project Report and 40 marks will be allotted for Project Viva Voce to be conducted by internal teacher and external teacher (examiner) appointed by the University

### **REPORT CONTENTS :**

Cover Page  
Company Certificate  
Guide Certificate  
Acknowledgement  
Declaration  
Executive Summary

### **TENTATIVE CHAPTER SCHEME**

Chapter 1. Introduction to study  
Chapter 2. Company profile  
Chapter 3. Objectives of study  
Chapter 4. Review of literature  
Chapter 5. Research methodology  
Chapter 6. Data analysis and interpretations  
Chapter 7. Observations and findings

## Chapter 8. Conclusions and suggestions

### Note:

- 1) **This project is strictly being undertaken under the guidance and concerned teacher:**
- 2) Topics for Project are in general and student may modify or select the related subject in consultation with the teacher.

### The Suggested Topics for Project Work:

- 1) Study advertising in local newspapers or outdoor advertising
- 2) Study of consumer satisfaction
- 3) Comparative study of buyer behaviour
- 4) Study of marketing strategies
- 5) Study of marketing of banking services
- 6) A comparative study of rural marketing versus urban marketing
- 7) Study of Customer Relationship Marketing (CRM)
- 8) An Analytical study of Marketing Mix
- 9) Study Customer Satisfaction of Product and Services
- 10) Study of Recent Trends in Marketing of any product or service
- 11) Study of Online Marketing
- 12) Study of social marketing
- 13) Study of impact on customer of advertisement in social media
- 14) Study of marketing mix in star hotels
- 15) Study of customer satisfaction regarding star hotel
- 16) Study of various strategies used by four wheeler manufacturers
- 17) Study of customer satisfaction of organized store.

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**Revised syllabi (2019Pattern) M. Com. Degree course (CBCS)**

**Syllabus for M.Com Part I .Semester – II**

**Subject Name :- Financial Analysis & Control**

**Compulsory Subject**

**Course code :- 201**

**Objectives of the course**

- a. To enable the students to acquire knowledge of financial analysis and control tools
- b. To Make appropriate application and uses of financial analysis and control

Depth of the program – fundamental Knowledge

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
1	Fundamentals of financial analysis and control	Meaning of financial analysis and control, importance, advantages limitations& uses	Understanding basics of financial analysis.
2	Comparative and common size statement	Meaning,, importance, advantages, limitations, uses, Problems on Intra & Inter Company Comparison	To gain knowledge of practically comparing financial results of different years and different companies.
3.	Cash flow and fund flow statements	Meaning,, importance, advantages limitations, uses, Problems on Cash flow and fund flow statements	To understand the importance of cash liquidity in an organization. To understand the computation of cash and fund flows under operating, investing and financing categories.
4.	Ratio analysis and trend analysis	Meaning,, importance, advantages, limitations, uses, Problems on Ratio analysis and Trend analysis	To develop the skill of appropriate use of different ratios to evaluate the financial performance of entities.

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Project	Expected Outcome
1	06	PowerPoint presentations		Application of IT for financial analysis
2	14	Use of MS Excel	Financial analysis of any sector (eg: Software) using common size and comparative statements as a tool of analysis.	Generate interest among students to use and apply Excel as a tool for financial analysis.
3	14	Application through money control, PPT and MS Excel	Financial analysis of any five companies using fund flow and cash flow statement as a tool of analysis	Learn to analyze and identify financially strong and weak companies
4	14		Financial analysis of peer companies using ratio analysis as a tool of analysis	Develop needed understanding and use of various ratios for financial analysis.

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Assignment use of PowerPoint, group discussion	100% based on theory	Functioning of National Stock Exchange
Unit – II	MCQ test	30% theory 70% problems	Financial statement analysis
Unit – III	Problem solving	30% theory 70% problems	
Unit – IV	Case study	30% theory 70% problems	

## References

<b>Sr. No.</b>	<b>Author/s</b>	<b>Title of the Book</b>	<b>Publication</b>	<b>Place</b>
1.	Ravi Kishore	Advanced Management Accounting	Taxman	New Delhi
2.	Ravi M. Kishore	Management Accounting & Financial Analysis	Taxman	New Delhi
3.	Dr. Jawahar Lal Dr. Sucheta Guaba	Financial Reporting and Analysis	Himalaya Publication House	New Delhi
4.	P Perm Chand and Madna Mohan	Financial Accounting and Analysis	Himalaya Publishing	Mumbai
5.	M.Y.Khan&P.K.Jain	Management Accounting & Financial Analysis	(Tata McGraw hill)	New Delhi
6.	Advanced Accounting	Dr. Sadashiv Sirgave	Success Publications	Pune
7.	Management Accounting	Dr. Arun Gaikwad	Success Publications	Pune
8.	Management Accounting	Dr. YashodhanMithare	Success Publications	Pune

**Suggested references**

**Web reference**

<b>Sr. no</b>	<b>Lectures</b>	<b>Films</b>
<b>1</b>	<b>Financial Statement</b>	<a href="https://docs.google.com/spreadsheets/d/e/2PACX-1vRgBO0bXtb52Ocx-aT7yy6j5twA-3GcgWiN5RCGboG3XTD6P5hWpG_jbz8PZA1Aw5YPI2MeEPziCyKm/pubhtml?gid=0&amp;single=true">https://docs.google.com/spreadsheets/d/e/2PACX-1vRgBO0bXtb52Ocx-aT7yy6j5twA-3GcgWiN5RCGboG3XTD6P5hWpG_jbz8PZA1Aw5YPI2MeEPziCyKm/pubhtml?gid=0&amp;single=true</a>
<b>2</b>	<b>Cash Flow</b>	<a href="https://www.investopedia.com/terms/c/cashflowfromfinancing.asp">https://www.investopedia.com/terms/c/cashflowfromfinancing.asp</a>
<b>3</b>	<b>Ratio Analysis</b>	<a href="https://www.investopedia.com/financial-edge/0910/6-basic-financial-ratios-and-what-they-tell-you.aspx">https://www.investopedia.com/financial-edge/0910/6-basic-financial-ratios-and-what-they-tell-you.aspx</a>

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**M. Com. Part I (Semester II)**

**Compulsory Subject**

**Subject :- Industrial Economics**

**Compulsory Subject**

**Course Code - 202 A**

## Objectives of the Course

1. To provide the knowledge to the students about the basic issues of industrial economics.
2. To make aware the students about the industrial profile of India and the industrial policy of government of India.

Depth of the Program – Fundamental Knowledge

## Objectives of the Program

1. To make the students understand concepts of industrial economics
2. To help the students know theories of industrial economics
3. To impart students' knowledge about sources of industrial finance and Indian industrial growth

Unit No.	Unit Title	Contents	Purpose skills to be developed
1	Introduction and Concepts	1.1 Meaning, Nature, Scope, Need and Significance of Industrial Economics 1.2 Industrial Combinations- causes, mergers and amalgamations, industrial monopoly-control of monopolies 1.3 Sellers' Concentration, Economies of Scale 1.4 Product Pricing – theories and evidence	<ul style="list-style-type: none"><li>• To give students an overview of industrial economics</li><li>• To make the students know about the concepts used in industrial economics</li></ul> <b>Skills :</b> Analytical skills, writing skills
2	Industrial Location	2.1 Factors Affecting Location of Industries 2.2 Theories of Industrial Location- Alfred Weber's theory, Sargent Florence Theory 2.3 Industrial Imbalance –Need for balanced regional industrial development-Causes and Measures of Industrial imbalance	<ul style="list-style-type: none"><li>• To make the students understand the theories of industrial location</li><li>• To impart knowledge about industrial imbalance in India</li></ul> <b>Skills:</b> Problem solving skills, ability to apply knowledge



		2.4 Regional Industrial Imbalance in India – Extent and Government Policy Measures for Balanced Regional Industrial Development	
3	Industrial Productivity, Efficiency and Size of Firm	<p>3.1 Industrial Productivity and Efficiency- Meaning, Norm, Tools and measurement of Industrial Productivity and Efficiency</p> <p>3.2 Factors Affecting Industrial Productivity and Efficiency</p> <p>3.3 Industrial Productivity in India</p> <p>3.4 Causes of Low Industrial Productivity</p> <p>3.5 Remedial measures by the government to improve industrial productivity</p> <p>3.6 Size of Firm- Determinants of Size of Firm</p> <p>3.7 Optimum Size of Firm- Meaning and its Determinants</p>	<ul style="list-style-type: none"> <li>• To help the students know about industrial productivity and efficiency</li> <li>• To know about industrial productivity, size of firms etc.</li> </ul> <p><b>Skills:</b> Understand complex theories and concepts, writing skills, mathematical aptitude</p>
4	Industrial Finance and Indian Industrial Growth	<p>1 Meaning, Scope, Importance of Industrial Finance</p> <p>4.2. Sources of Industrial Finance- private, public and cooperative sector, shares, debentures, bonds, deposits, loans etc.</p> <p>4.3. Foreign Capital- need, government's policy, direct investment, foreign institutional investment,</p>	<ul style="list-style-type: none"> <li>• To impart knowledge about industrial finance and its sources</li> <li>• To help the students understand problems of small and micro industries in India</li> </ul> <p><b>Skills:</b> Critical thinking, analytical thinking, writing skills</p>

		<p>4.4 Form of Foreign Capital : Euro issues, GDR, ADR, External commercial borrowings</p> <p>4.5 Industrial policy : Trends in Industrial Growth since 1991</p> <p>4.6 Performance and Problems of Micro, Small, Medium Enterprises</p>	
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### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	<ul style="list-style-type: none"> <li>• Open Book Discussion</li> <li>• Case study</li> </ul>		<ul style="list-style-type: none"> <li>• Mergers and amalgamation of industries</li> <li>• Product pricing practices in India</li> </ul>	<ul style="list-style-type: none"> <li>• Will get an overview of industrial economics</li> <li>• Will know about the concepts used in industrial economics</li> </ul>
2	10	<ul style="list-style-type: none"> <li>• Digital lectures</li> <li>• Group discussion</li> </ul>		<ul style="list-style-type: none"> <li>• Extent of regional imbalance in India</li> <li>• Policies to solve industrial imbalance in India</li> </ul>	<ul style="list-style-type: none"> <li>• Students will understand the theories of industrial location</li> <li>• Students will know about industrial imbalance in India</li> </ul>
3	14	<ul style="list-style-type: none"> <li>• Teacher driven power point presentation</li> <li>• Jigsaw reading</li> </ul>		<ul style="list-style-type: none"> <li>• Study of productivity in Indian industries</li> <li>• Study of effect of scale</li> </ul>	<ul style="list-style-type: none"> <li>• Students will know about industrial productivity and efficiency</li> <li>• Students will know about industrial productivity,</li> </ul>

					size of firms etc.
4	14	<ul style="list-style-type: none"> <li>• Case studies</li> <li>• Interactive learning</li> <li>• Pair learning</li> </ul>		<ul style="list-style-type: none"> <li>• Growth of medium and small enterprises in India</li> <li>• Impact of Industrial policy 1991</li> </ul>	<ul style="list-style-type: none"> <li>• Students will know about industrial finance and its sources</li> <li>• Students will understand problems of small and micro industries in India</li> </ul>

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	11	11	Business or industrial economics course
Unit – II	11	11	
Unit – III	14	14	
Unit – IV	14	14	

### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Industrial Economics: Indian Perspective	Cherunilam, F.	Himalaya Publishing house.	Mumbai
2	Industrial Economy of India	Sivaya, K.V. and Das	VBM (latest Edition), Sultan Chand	Mumbai

<b>3</b>	Industrial Economics	Sing, A. and A.N.Sadhu	Himalaya Publishing House	Mumbai
<b>4</b>	Industrial Growth in India - Stagnation since Mid-sixties	Ahluwalia, I.J.	Oxford University Press	New Delhi
<b>5</b>	Performance Appraisal of PEs in India: Conceptual Approach", in Public Enterprises in India	Jyotsna and Narayan B	Chug Publications	Allahabad
<b>6</b>	Industrial Economics,	Burthwal, R.R	Wiley Eastern Ltd	New Delhi

**Suggested references Web reference**

Sr. no	Lectures	PPTs	Articles
1	<a href="https://www.economicnetwork.ac.uk/teaching/Lecture%20Slides/Industrial%20Economics">https://www.economicnetwork.ac.uk/teaching/Lecture%20Slides/Industrial%20Economics</a>	<a href="http://www.powershow.com/view/26979b-MGI2M/INDUSTRIAL_ECONOMICS_powerpoint_ppt_presentation">http://www.powershow.com/view/26979b-MGI2M/INDUSTRIAL_ECONOMICS_powerpoint_ppt_presentation</a>	<a href="https://onlinelibrary.wiley.com/journal/14676451">https://onlinelibrary.wiley.com/journal/14676451</a>
2	<a href="https://www.studocu.com/en/document/university-of-nottingham/industrial-economics/lecture-notes/lecture-notes-lectures-1-10/594973/view">https://www.studocu.com/en/document/university-of-nottingham/industrial-economics/lecture-notes/lecture-notes-lectures-1-10/594973/view</a>	<a href="http://www.staff.city.ac.uk/~sj355/INDUSTRIAL%20intro.ppt">http://www.staff.city.ac.uk/~sj355/INDUSTRIAL%20intro.ppt</a>	<a href="https://onlinelibrary.wiley.com/loi/14676451">https://onlinelibrary.wiley.com/loi/14676451</a>
3	<a href="https://www.hse.ru/data/2010/10/22/1224130267/BSc4_industrial_en.pdf">https://www.hse.ru/data/2010/10/22/1224130267/BSc4_industrial_en.pdf</a>	<a href="https://slideplayer.com/slide/11650124/">https://slideplayer.com/slide/11650124/</a>	<a href="https://econpapers.repec.org/article/blajindec/">https://econpapers.repec.org/article/blajindec/</a>

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**M. Com. Part I (Semester II)**

**Compulsory Subject**

**Subject Name :- Business Statistics**

**Course code :- 202 B**

**Objective of the Program**

The main objective of this course is to acquaint students with some basic concepts in Statistics. They will be introduced to some statistical methods of analysis of data. The unit wise objectives of this course are as follows:

- 1) To forecasting and the analysis of economic and industrial time series.
- 2) Providing students with a formal treatment of probability theory and fostering understanding through real-world applications.
- 3) To understand the topics binomial, Poisson and normal distribution and of importance in different disciplines.
- 4) To take a random sample from the population to obtain parameter estimates.
- 5) To learn how to interpret the result of a test of hypothesis in the context of the original narrated situation.

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
1	<b>Time Series</b>	Introduction, Definition, Components of Time Series, The Trend, Seasonal variation, Cyclical variation, Irregular variation, Methods of estimating Trends, Moving averages (with periods 3,4,5), Fitting of trendline and second degree curve, Exponential smoothing, Example and problem	Time series analysis is the collection of data of specific intervals over a period of time with the purpose of identifying trends, cycles and seasonal variations to aid in the forecasting of future events.
2	<b>Theory of Probability Distributions : Discrete and Continuous</b>	1.1 Random Variables, discrete random variable, continuous random Variable 1.2 Probability distribution and probability mass function (p.m.f.) of discrete random variable, Probability density function (p.d.f.) of continuous random variable 1.3 Expected value, variance and standard deviation	To classify probability distributions as discrete or as continuous probability distributions depending on whether they define probabilities associated with discrete variables or continuous variables.  Examples will clarify the difference between discrete and continuous variables.

		<p>1.4 Marginal, Joint and Conditional distribution</p> <p>1.5 Numerical Problems on finding p.m.f/p.d.f, expected value and variance</p>	
3	<b>Standard Probability Distributions and Parameter Estimation</b>	<p>2.1 Binomial Distribution : p. m. f., mean and variance.</p> <p>2.2 Poisson Distribution : p. m. f., mean and variance</p> <p>2.3 Normal Distribution : p. m. f., mean, variance, properties</p> <p>2.4 Exponential distribution : definition, mean, variance and properties</p> <p>2.5 Limiting relations between these distributions</p> <p>2.6 Numerical problems to calculate probabilities, mean and Variance</p>	<p>Probability distributions are prevalent in many sectors namely insurance, social science, computer science etc. This topic highlighted standard probability distributions which are observed in day-to-day life and explain their applications.</p>
		<p>3.1 Parameter and Statistic</p> <p>3.2 Unbiased estimator</p> <p>3.3 Confidence interval (around unbiased estimator)</p> <p>3.4 Examples and Problems on real life situations</p>	<p>Parameters are descriptive measures of an entire population that may be used as inputs to generate distribution curves. One goal of statistical analysis is to obtain estimates of population parameters along with the amount of error associated with these estimates.</p>
4	<b>Tests of Hypothesis</b>	<p>3.1 Hypothesis, null and alternative hypothesis, two types of errors, teststatistic, critical region acceptance region, level of significance, p-value</p> <p>3.2 Chi square test for goodness of fit</p> <p>3.3 Chi square test for independence of two attributes</p>	<p>The purpose of this topic is to determine whether there is enough statistical evidence in favor of certain belief about the parameter.</p> <p>To learn how to apply the test procedure for test of hypothesis concerning a population mean whom the sample size is small.</p> <p>Larger sample sizes allow researchers to better</p>

	<p>3.4 Small Sample Tests</p> <p>a) One sample test</p> <p>b) Two sample test</p> <p>c) Paired t – test</p> <p>d) F- test</p> <p>3.5 Large sample tests for population mean and population proportion</p> <p>3.1.1 Test for the mean a) one sample b) two samples</p> <p>3.1.2 Test for the proportion a) one sample b) two samples</p> <p>3.6 Numerical Problems</p>	determine the average values of their data and avoid errors.
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### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Expected Outcome
1	15	ICT	Demonstrate advanced understanding of the concepts of time series and their applications to finance and other area.
2	15	ICT	Understand the concept of r.v. Develop problem solving techniques needed to calculate probabilities.
3	15	ICT	To apply discrete and continuous distributions for analyzing the data. To describe the practical applications of various distributions.



			Samples are collected to estimate characterizations of the population of particular interest.
4	15	ICT	Understand problem of statistical inference, problem testing of hypothesis.

### Method of Evaluation

Subject	Internal Evaluation (Marks)	External Evaluation (Marks)
Unit – I	12	13
Unit – II	12	13
Unit – III	13	12
Unit – IV	13	12

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Probability and Statistics	R Walpole, S Myers and K Ye	Pearson Education International	London
2	Fundamentals of Mathematical Statistics	S.C. Gupta and V.K. Kapoor	Sultan Chand & Sons	New Delhi
3	Fundamentals of Applied Statistics	S.C. Gupta	Sultan Chand & Sons	New Delhi
4	Statistics for Business and Economics	J.S Chandran	Vikas Publishing	Mumbai
5	Quantitative Techniques for Business	Dr. A.B. Rao	Jaico <i>Publishing</i> House	Mumbai
6	Fundamentals of Statistics	D.N. Elhance	Kitab Mahal	Kanpur

### Web reference

1. [www.freestatistics.tk](http://www.freestatistics.tk)(National Statistical Agencies)
2. [www.psychstat.smsu.edu/sbk00.htm](http://www.psychstat.smsu.edu/sbk00.htm)(Onlinebook)
3. [www.bmj.bmjournals.com/collections/statsbk/index.shtml](http://www.bmj.bmjournals.com/collections/statsbk/index.shtml)
4. [www.statweb.calpoly.edu/bchance/stat-stuff.html](http://www.statweb.calpoly.edu/bchance/stat-stuff.html)
5. [www.amstat.org/publications/jse/jse-data-archive.html](http://www.amstat.org/publications/jse/jse-data-archive.html)(International journal on teaching and learning of statistics)
6. [www.amstat.org/publications/chance](http://www.amstat.org/publications/chance)(Chancemagazine)
7. [www.statsci.org/datasets.html](http://www.statsci.org/datasets.html)(Datasets)
8. [www.math.uah.edu/stat](http://www.math.uah.edu/stat)(Virtual laboratories in Statistics)
9. [www.amstat.org/publications/stats](http://www.amstat.org/publications/stats)(STATS : the magazine for students of Statistics)
10. [www.stat.ucla.edu/cases](http://www.stat.ucla.edu/cases)(Case studies in Statistics).
11. [www.statsoft.com](http://www.statsoft.com)
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13. [www.indiastat.com](http://www.indiastat.com)
14. [www.unstat.un.org](http://www.unstat.un.org)
15. [www.stat.stanford.edu](http://www.stat.stanford.edu)
16. [www.statpages.net](http://www.statpages.net)
17. [www.wto.org](http://www.wto.org)
18. [www.censusindia.gov.in](http://www.censusindia.gov.in)
19. [www.mospi.nic.in](http://www.mospi.nic.in)
20. [www.statisticsofindia.in](http://www.statisticsofindia.in)

**Group A (Advanced Accounting & Taxation) - Special Paper III**

**Subject Name:-Specialized Areas in Accounting**

**Course code:- 203**

**Depth of the program** – Fundamental Knowledge with key competencies amongst the students

**Objectives of the Program**

1. To understand the application of advanced specialized accounting practices in the field of modern business and profession
2. To gain the knowledge on corporate restructuring which are essentially mean to attain greater market share, acquire additional brand and create new synergies
3. To develop proficiency in new skills expected for future accountants in this changing business environment
4. To acquaint with the amalgamation and reconstruction procedures of companies

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
1	<b>Accounting For Construction Contracts And Introduction to RERA</b>	A. Introduction - Accounting Treatment B. Percentage of Completion Method, Completed Contract Method. C. Provision for foreseeable losses-Principles to be followed while taking credit for profit on incomplete contracts D. Valuation & disclosure of Work-in-progress, Escalation clause E. Preparation of contract accounts as per AS7	To understand the accounting for construction contracts and various terms used in contract accounting and principles to be followed while computing profit on incomplete contracts and valuation and disclosure of WIP and escalation clause
2	<b>Accounting For Corporate Restructuring:</b>	A. Amalgamation B. Absorption C. External reconstruction D. Internal Reconstruction - reparation of Scheme of Internal Reconstruction. (Advanced problems only)	To understand the concept of corporate restructuring, its accounting methods, processes as per accounting standard 14

3.	<b>Services Sector Accounting:</b>	<p>A. <b>Hotel Accounting</b> - introduction - visitors' ledger.</p> <p>B. <b>Hospital Accounting</b> - Introduction- capital and revenue expenditure OPD &amp; IPD Register.</p> <p>C. <b>Transport Undertaking</b> - Introduction - preparation of final Accounts - Accounting of Roadways Preparation of final accounts - Log Book.</p> <p>D. <b>Fund Based Accounting:</b> Introduction - Special Features of Accounting for Educational Institutions, Accounting for Government Grants as per guidance notes issued by the ICAI.</p>	To acquaint with hotel accounting, Hospital accounting, Transport undertakings accounting fund based accounting to create an avenue for employment in the academics and also to benefit Industry
4.	<b>Accounts and Records under GST</b>	<p>A. Accounts &amp; Records</p> <p>B. Compulsorily Audit</p> <p>C. Period for Retention of Accounts</p>	To understand that every registered person to keep and maintain, at his principal place of business (as mentioned in the certificate of registration), a true and correct account along with relevant documents

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	08	02	02	02	Describe how contract accounting is used for performance evaluation and decision making
2	16	06	04	02	Recalls the distinction between Amalgamation in the nature of of purchase and analyses the situation where the Alteration of share capital and internal reconstruction is required
3	16	08	04	04	To develop competency of students to solve problems relating Special areas in accounting including accounting for Services Sector

4	8	06	04	02	To Maintain different types of ledgers, prepare documents such as Invoice, Credit Note and Debit Note, identify the different types of returns and their applicability to the business, Monthly Returns, Quarterly Return
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### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Written Examination	Written Examination	Certificate Course in Financial Accounting
Unit – II	Seminar/ Group Discussion	Written Examination	Certificate Course in Tally with GST
Unit – III	Power Point Presentations (PPT)	Written Examination	Certificate Course in Equity Analysis
Unit – IV	Oral Examination	Written Examination	Certificate Course in Goods and Service tax Accounts Assistant

### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Advanced Financial Accounting	ShawarSaleem,	Vikas Publication House	Delhi
2.	Advanced Accounts- Vol.-I.	Shukla, M.C., T.S. T.S. Grewal and S.C. Gupta.	S. Chand & Co.	New Delhi.
3.	Advanced Accountancy	Jain and Narang	Kalyani Publishers	New Delhi
4.	Indirect Taxes	V. S. Datey	Taxman Publication	Mumbai

5.	Advanced Practical Accounts,	Anjan Bhattacharya &SubrataMukerjee	S. Chand & Co.,	New Delhi.
6.	Advanced Accounting	M. C. Shukla & S.P. Gerwal	S. Chand and Co. Ltd.	New Delhi
7.	Advanced Management Accounting	Ravi Kishore	Taxman	New Delhi
8.	Advanced Accounting	Dr. Sadashiv Shirgave	Success Publications	Pune

### Suggested references Web reference

Sr. no	Lectures	Films	PPTs	Articles
1	Gst Accounts Records Summary & Documentation, Time Period Of Books Retention-Ca DivyanshuSengar (on youtub)	<a href="https://www.youtube.com/watch?v=Ou3qn37BNK4">https://www.youtube.com/watch?v=Ou3qn37BNK4</a>	What is Accounting.Purpose of maintaining Accounts.Accounts& Records in GST	Books of accounts under GST scenario. Vishwanath Bhat & Co Cost Accountants Bangalore ( <a href="http://icmai.in/upload/Taxation/IDT/PPT/Books-accounts-GST.pdf">http://icmai.in/upload/Taxation/IDT/PPT/Books-accounts-GST.pdf</a> ) ( <a href="https://www.icsi.edu/media/webmodules/REAL_ESTATE_REGULATION_AND_DEVELOPMENT_ACT.pdf">https://www.icsi.edu/media/webmodules/REAL_ESTATE_REGULATION_AND_DEVELOPMENT_ACT.pdf</a> ) ( <a href="http://icmai.in/upload/Students/Syllabus2016/Inter/Paper-11-NEW-GST-Revised.pdf">http://icmai.in/upload/Students/Syllabus2016/Inter/Paper-11-NEW-GST-Revised.pdf</a> ) ( <a href="http://icmai.in/upload/Taxation/IDT/PPT/Books-accounts-GST.pdf">http://icmai.in/upload/Taxation/IDT/PPT/Books-accounts-GST.pdf</a> )
2	Accounting for corporate Restructuring-CA AnandBhangariya(on youtube)	( <a href="https://www.youtube.com/watch?v=FNBA0R4EW0">https://www.youtube.com/watch?v=FNBA0R4EW0</a> )	Procedural Aspects Of Merger & Amalgamation Before Nclt By: Cs Nesar Ahmad	Corporate Restructuring, Valuation And Insolvency ( <a href="https://www.icsi.edu/media/webmodules/publications/Full%20Book%20of%20PP-CRVI-2014.pdf">https://www.icsi.edu/media/webmodules/publications/Full%20Book%20of%20PP-CRVI-2014.pdf</a> )

3	Accounting - AS 7 - Construction Contract-CA Raj Agrawal (on youtube)	( <a href="https://www.youtube.com/watch?v=1Oiu2-KBMAE">https://www.youtube.com/watch?v=1Oiu2-KBMAE</a> )	Construction contracts-Kapp Edge Solutions Pvt Ltd	<a href="https://www.slideshare.net/gst-trichy/accounts-records-in-gst">https://www.slideshare.net/gst-trichy/accounts-records-in-gst</a>
4	Hotel Accounting- Guest Charges, Payment, and Check-out	( <a href="https://slideplayer.com/slide/1733925/">https://slideplayer.com/slide/1733925/</a> )	Contract Accounting- ( <a href="https://kalyankaari.files.wordpress.com/2012/04/contract-costing.ppt">https://kalyankaari.files.wordpress.com/2012/04/contract-costing.ppt</a> )	Accounting for Hotels ( <a href="http://www.yourarticlelibrary.com/accounting/hotel-accounting/accounting-for-hotels-with-accounting-entries-hotel-accounts/68699">http://www.yourarticlelibrary.com/accounting/hotel-accounting/accounting-for-hotels-with-accounting-entries-hotel-accounts/68699</a> ) ( <a href="http://jhbwc.org/wp-content/uploads/2013/12/Contract-costing-.pdf">http://jhbwc.org/wp-content/uploads/2013/12/Contract-costing-.pdf</a> )

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**Group A (Advance Accounting and Taxation) – Special Paper IV**

**Subject Name :- Business Tax assessment and planning**

**Course code :- 204**

Objectives of the course

1. To provide understanding of Direct Taxes including rules pertaining there to and their application to different business situations.
2. To understand principles underlying the Goods and Service tax
3. To understand basic concepts of Goods Service Tax and Customs Duty.

Depth of the program – fundamental Knowledge

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
1	Assessment of Various entities	1. Assessment of Partnership Firms including LLP 2. Assessment of Co-operative Societies. 3. Assessment of Charitable Trust  (Theory & Problems)	To understand the provision for computation of income of various entities.
2	Miscellaneous	Clubbing of income and set off and carry forward of losses (Theory and problems)  Income Tax authorities, Return of Income and forms of Income Tax Return, Procedure for assessment – Types of assessment, Appeals & Revision, Tax Deducted at Source.  Advance Tax, Interest and Penalties, Offences and Prosecutions, Refund of Tax, Double Taxation Avoidance Agreement (DTAA)	To understand the provisions of returns, assessment and procedure of assessment.



5.	Tax Planning	Concept of Tax Planning and Management, Need, Objectives, Limitations, Types (Short Term, Long Term, permissive, purposive), Difference between Tax exemption, Tax Evasion and Tax Avoidance (theory)	To understand need and importance of Tax Planning and Management
6.	Goods and Service Tax	<p>Concept of GST – Meaning</p> <ol style="list-style-type: none"> <li>1. Evaluation of GST, Types – CGST, SGST/UTGST, IGST.</li> <li>2. Procedure for registration under GST, Persons liable for Registration – Compulsory and Deemed registration, cancellation of registration, GST Returns</li> <li>3. Levi &amp; Collection of Tax, Scope of supply, composite &amp; mixed supply, Time of supply goods &amp; services, Input Tax Credit (Theory &amp; Problem)</li> <li>4. Customs Duty – Introduction to customs Duty – valuation, Customs Procedure, Classification for customs &amp; Rate of Customs Duty (theory)</li> </ol>	To understand the Basic concept and framework under GST Act & Customs Act.

**Teaching methodology**

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative methods to be used</b>	<b>Film shows and AV Applications</b>
1	16	Expert Lecture Group Discussion & PPT	ICAI youtube channel ICAI BOS CA Tube
2	10	Expert Lecture Group Discussion & PPT	ICAI youtube channel ICAI BOS CA Tube
3	8	Expert Lecture Group Discussion & PPT	ICAI youtube channel ICAI BOS CA Tube
4	14	Expert Lecture Group Discussion & PPT	ICAI youtube channel ICAI BOS CA Tube

### **Method of Evaluation**

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit – I	PPT, Assignments, Tutorials, GD, Quiz	Solving of practical problems of computation of income	GST Course
Unit – II	PPT, Assignments, Tutorials, GD, Quiz	Solving of practical problems of computation of income	GST Course
Unit – III	PPT, Assignments, Tutorials, GD, Quiz	Solving of practical problems of computation of income	GST Course
Unit – IV	PPT, Assignments, Tutorials, GD, Quiz	Solving of practical problems of computation of income	GST Course

### **References**

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
<b>1</b>	Direct Tax, Laws & Practice	Dr. Vinod Singhania	Taxman Publication	New Delhi
<b>2</b>	Direct Taxes	Girish Ahuja & Rani Gupta	Bharat Law House	New Delhi
<b>3</b>	Direct Tax, Laws & Practice	Mehrotra H C & Gupta S D	SahityaBhawan Publication	Agra
<b>4</b>	Direct Taxes	Gaur V P & Narang	Kalyani Publications	New Delhi
<b>5</b>	Indirect Taxes	Vinod Singhania	Tasmans Publication	New Delhi
<b>6</b>	Indirect Taxes	H C Mehrotra	SahityaBhawan Publication	Agra
<b>7</b>	Bane Act CGST, SGST, IGST	H C Mehrotra	SahityaBhawan Publication	Agra

**Suggested references Web reference**

<b>Sr. no</b>	<b>Lectures</b>	<b>Films</b>	<b>Animation</b>	<b>PPTs</b>	<b>Articles</b>	<b>Others</b>
<b>1</b>	<b>ICAI BOS</b>	-	-	-	<b>Management Account Journal</b> <b>Chartered Accountant Journal</b>	

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**M. Com. Part I (Semester II)**

**Group B (Commercial Laws & Practices) - Special Paper III**

**Subject Name: - E-Security and Cyber Laws**

**Course Code: - 205**

**Objectives of the course**

1. To make the students aware of the cyber wrongs/crimes;
2. To impart knowledge of e-security and Internet Security amongst students
3. To make student familiar with various provisions of cyber Laws and Information Technology Act
4. To make the students acquainted with the regulatory regime in computer field/e-business.

**Depth of the Programme:** – Fundamental Knowledge with insight to solve practical problems in Cyber laws and related issues

**Objective of the Programme:**

1. To equip and train Post Graduate students to accept the challenges of Business World by providing opportunities for study and analysis of advanced Commercial and business methods and processes.
2. To develop independent logical thinking and facilitate personality development.
3. To equip the students to opt for suitable careers in management and entrepreneurship.
4. To acquaint the students with methods of Data collection and their interpretations.
5. To develop among students Communication, Study and Analytical skills.

Unit	Unit Title	Contents	Purpose Skills to be developed
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No.			
1	<b>Introduction to Computer crimes</b>	<p>Computer Crimes. Types of Computer crimes, Specific Threats, Attacks on Computer Systems, Major types of Security Problems / Common threats, Computer Frauds and abuse techniques. Characteristics and types of computer frauds.</p> <p>Preventing Computer Frauds and Ethical Considerations. System Vulnerability and abuse – Internet Vulnerability. Protecting Information systems from potential threats. E-Commerce security issues. Risk Involved in E-Commerce. Protecting E-Commerce System.</p>	To understand the nature of different Computer Crimes and ways to protect systems from them and become aware of E-Commerce systems and Issues
2	<b>E-Security</b>	<p>Introduction to E-Security and Security Requirements. Types of Intruders, attacking methods, Hackers and Crackers. Computer Viruses, Spam, Denial of services. Security Policy, Secure E-Transactions. Types of Information Systems Controls- General Controls – Physical Controls, Access Controls, Biometric Controls, data Security Controls and Application Controls. Security Tools and Methods- Password, Authentication, Access Control, Encryption,</p> <p>Firewall, Antivirus Software, Digital Identity and digital Signature, Digital Signature Certificate. Secure Socket Layer and Secure Electronic Transaction Protocols.</p>	To get acquainted with various concepts relating to E-Security and to understand different threats to E-Transactions, security measures, Information System Controls and Secure Electronic Transaction Protocol
3	<b>Cyber Laws (Information Technology Act, 2000) Part-I</b>	<p>Introduction to Cyber Laws—Meaning &amp; scope of Cyber Laws, online contracts, Requirements &amp; legal aspects of e-contracts ( offer and acceptance in e-form), Cyber Laws &amp; legal issues ( cyber jurisprudence, &amp; sovereignty, net neutrality, freedom of speech in cyber space, governance)</p> <p>Information Technology Act – 2000 Part-I</p> <p>Digital Signature-definition ,meaning, functions,</p>	<ul style="list-style-type: none"> <li>• To introduce Students about Cyber Laws legality of E-Transactions.</li> <li>• To study various legal provisions of the Information Technology Act relating to E-Governance, Digital signatures etc.</li> </ul>

		procedure, E- Governance ( Ss. 4 to 9 ), E- Records ( Ss 11 to 16 ), Controller of Certifying Authority (powers, functions u/s 17 to 20), Digital Signature Certificates, License to issue Digital Signature Certificates, (suspension, revocation etc.--Ss.21 to 26), Duties of Certifying Authority (Ss.30 to 34), Provisions relating to Digital Signature Certificates (Ss. 35 to 39), Duties of subscriber	
4	<b>Cyber Laws (Information Technology Act, 2000) Part-II</b>	Penalties for Cyber wrongs and Adjudication (Ss. 43 to 47), Cyber Regulation Appellate Tribunal (Procedure and Powers (Ss.48 to 51, 57 to 64) Cyber Crimes/Offences & punishment (u/s 65 to 79), Offences by Companies (S.85) Amendments effected in IPC 1860, Indian Evidence Act, 1872, Bankers Books Evidence Act, 1891, Reserve Bank of India Act, 1934 pursuant to Ss. 91 to 94 of ITA, 2000.	To get sensitized on various penalties for the cyber wrongs provided in the Information Technology Act, 2000 and relevant amendments in certain other Laws.

**\*All Acts are to be studied with recent amendments**

### Method of Evaluation

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit – I	Continuous Evaluation (Written Tests etc.)	Written Examination	Certificate Course in Cyber Laws
Unit – II	Continuous Evaluation [Presentations (PPT) etc.]	Written Examination	Certificate Course in Cyber Security and Cyber Investigation
Unit – III	Continuous Evaluation (Seminars/Group Discussions etc.)	Written Examination	Certificate Course in E-Governance
Unit – IV	Continuous Evaluation (Viva-Voce etc.)	Written Examination	Certificate Course Digital Signature Mechanism

### References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
<b>1</b>	E-COMMERCE and ITS APPLICATIONS	Dr. U. S. Pandey, Rahul Srivastava and Saurabh Shukla.	S. Chand & Company	New Delhi
<b>2</b>	Management Information and Control Systems	Dr. Sushila Madan	TAXMANN'S	
<b>3</b>	Electronic Commerce from Vision to Fulfillment	Elias M. Awad	Pearson Education	
<b>4</b>	Text book on Intellectual property rights	N.K. Acharya	Asia Law House	
<b>5</b>	Law of Information Technology (Cyber Law)	D. P. Mittal	TAXMANN'S	
<b>6</b>	Guide to Cyber Laws	Rohnay D. Ryder	Wadhwa,	Nagpur
<b>7</b>	Cyber Laws	Justice Yatindra Singh	Universal Law Publishing Co	New Delhi
<b>8</b>	Law of Information Technology	D.P. Mittal		
<b>9</b>	Cyber Laws	Krishnakumar		
<b>10</b>	Encyclopedia of Cyber Laws	Sujeet Kumar		
<b>11</b>	Handbook of Cyber Laws	Vakul Sharma		

**Suggested references**

**Web reference**

Sr. no	Lect ures	Film s	Animat ion	PPTs	Arti cles	Others
1				<p><a href="#">Cyber law In India: its need &amp; importance – Slide Share</a></p> <p><a href="https://www.slideshare.net/AdityaShukla7/cyber-law-in-india-its-need-importance">https://www.slideshare.net/AdityaShukla7/cyber-law-in-india-its-need-importance</a></p>		<p><a href="#">Cyber Laws   Ministry of Electronics and Information Technology ...</a></p> <p><a href="https://www.meity.gov.in/content/cyber-laws">https://www.meity.gov.in/content/cyber-laws</a></p>
2				<p><a href="#">Cyber Security &amp; Cyber Law - Digital India</a></p> <p><a href="https://digitalindia.gov.in/.../files/MeitY_Cyber%20Security_13%20Feb_Final.pdf">https://digitalindia.gov.in/.../files/MeitY_Cyber%20Security_13%20Feb_Final.pdf</a></p>		<p>Cyber Laws in India</p> <p><a href="http://www.legalserviceindia.com/cyber/cyber.htm">http://www.legalserviceindia.com/cyber/cyber.htm</a></p>

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## **M. Com. Part I (Semester II)**

### **Group B (Commercial Laws & Practices) - Special Paper IV**

Subject Name: - **Law Regulating to Copyright and Designs**

Course Code: - **206**

#### **1. Objectives of the Course:**

- a. To equip the students with the Concepts of Copyrights, Geographical indications, Plant Varieties and Designs.
- b. To acquaint Students with legal provisions relating to these IPRs.
- c. To sensitise the students to opt for suitable careers in management and regulation of these IPRs.
- d. To make the students acquainted with the regulatory regime in the field of Copyrights, Geographical indications, Plant Varieties and Designs.
- e. To study relevant judicial decisions relating to these IPRs.

**Depth of the program:** Fundamental Knowledge, Principles and provisions of relevant Statutes and understanding of its applicability

#### **Objectives of the Program:**

1. To equip and train the students to accept the challenges of existing business environment.
2. To develop independent logical thinking and facilitate students to enhance their personality.
3. To equip the students for seeking suitable careers in management and entrepreneurship in the field of IPRs.
4. To study methods of Data collection and its interpretations.
5. To develop among students Communication and critical thinking skills.

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>The Copyright Act, 1957</b>	<p>Copyright: Concept and Evolution, Scope and Characteristics of Copyright – Object of Copyright – Works in which Copyright Subsists – Qualification for Copyright Subsistence – Author and Ownership of Copyright- Rights of the Copyright Owner – International Copyright (Ss – 40-43).</p> <p>Term of Copyright (Sections 22 to 29, 37(2), 38(2) – Assignment/ License of Copyright (Sections 18 to 21, 30 To 32) – Registration of Copyright (Sections 44 to 50-A along with rule 16 of chapter VI of Copyright Rules, 1958).</p> <p>Infringement of Copyright - acts which constitute Infringement, acts not Constituting Infringement etc. (Sections 51 to 53 A ) – Offences and Penalties,</p> <p>Copyright Societies: Functions and Rights</p> <p>Important Judicial Decisions to be studied :</p> <p>1)<i>The Chancellor, Masters &amp; Scholars of the University of Oxford &amp; Ors. v.Rameshwari Photocopy Services &amp; Ors.</i> [DU Photocopying Case] CS (OS)--2439/2012. Delhi High Court</p> <p>2) <i>Twentieth Century Fox Film Corp v. MCA Inc. and Ors</i> [715 F.2d 1327 (9th Cir. 1983)]</p>	<ul style="list-style-type: none"> <li>• Acquainting students with historical aspects and conceptual framework of Copyrights.</li> <li>• Making them aware of various legal provisions of Copyrights along with few relevant decisions of the Courts.</li> </ul>

		<p>3) <i>R. G. Anandv. Deluxe Films</i> [AIR (1978) SC 1613]</p> <p>4) <i>Apple Computer, Inc. v. Microsoft Corporation &amp; Hewlett-Packard Co.</i> [35 F.3d 1435 (9th Cir.1994)]</p>	
2	<b>The Designs Act,2000</b>	<p>Industrial Designs: Introduction, Meaning and Scope – Registerability of a Design, who can file an Application for Registration of a Design (Sections 3 to 10) – Copyright in Registered Designs (Sections 11 to 20) – Infringement (Piracy) of Copyright in Design (Sec. 22) – Defenses which may be set up by the Defendant.</p> <p>Important Judicial Decisions to be studied :</p> <p>1) <i>Micolube India Limited v. Rakesh Kumar</i> 2013 1AD (Delhi) 542; MIPR 2012 (2) 200</p> <p>2) <i>Reckitt Benckiser India Ltd. v. Wyeth Ltd.</i> AIR 2013 Delhi 101;2013 (54) PTC 90 (Del) (FB)</p> <p>3) <a href="#"><u><i>Gopal Glass Works Limited v. Assistant Controller of Patents &amp; Designs &amp; Ors.</i></u></a> 2006 (3) CHN 188</p> <p>4) <i>AtulNarsibhai Patel v. The Assistant Controller of Patents And Designs And Others.,</i> Calcutta High Court AID No. 3 of 2013 Decided on 17.01. 2017</p>	<ul style="list-style-type: none"> <li>• Introducing students with conceptual framework and scope of Designs.</li> <li>• Making them aware of various legal provisions of Designs Act along with few relevant decisions of the Courts.</li> </ul>

3	<b>The Geographical Indications of Goods (Registration and Protection), Act, 1999</b>	<p>Geographical Indications: Introduction, Meaning and Content –</p> <p>Legislative framework :</p> <p>The Geographical Indications of Goods (Registration &amp; Protection) Act, 1999 and the Geographical Indications of Goods (Registration &amp; Protection) Rules, 2002.</p> <p>Procedure for Registrations – Duration, Renewal, Restoration (Section 11 to 18) – Rights Conferred by Registration – Infringement and its Remedies (Section 20-24) – Penalties for Infringement (Section 37 to 54) – Authorities: Registrar, Appellate Board – Certificate of Validity – Powers of Central Government.</p>	<ul style="list-style-type: none"> <li>• Acquainting students with conceptual framework and scope of Geographical indications of goods.</li> <li>• Making them aware of various legal provisions of The Geographical Indications of Goods (Registration and Protection), Act, 1999 along with relevant rules.</li> </ul>
4	<b>Protection of Plant Varieties and Farmers Rights Act-2001</b>	<p>Introduction, Objective and Scope of the PPVFR Act, 2001 - Definitions [Plant, Propagating Material, Seed, Germ Plasma, Plant Variety, New Plant Variety, Farmer Etc.] Procedure of Registration, Who may apply? - What can be registered? – What Cannot be Registered - Acceptances and Opposition of Application – Rights and Privileges of Breeders and Researchers – Compulsory License – Period of Validity of Registration – Surrender and Revocation of Certificate – Infringement of Rights and its Remedies - Offences and Penalties – Authorities for Administration</p>	<ul style="list-style-type: none"> <li>• Making students understand with the concept and scope of Plant Varieties and Farmers Rights.</li> <li>• Making them aware of various legal provisions of The Protection of Plant Varieties and Farmers Rights Act, 2001 along with relevant rules.</li> </ul>

- All Acts are to be studied with recent amendments

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Assessment (Written Test etc.)	Written Examination	Diploma in IPRs
Unit – II	Continuous Assessment [Class Presentation (PPT)etc]	Written Examination	Online Courses on Moocs
Unit – III	Continuous Assessment (Seminar etc.)	Written Examination	Certificate course on Copyright
Unit – IV	Continuous Assessment (Viva-Voce etc.)	Written Examination	Certificate course on Geographical indications

### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Intellectual Property Law	P. Narayan	Eastern Law House	New Delhi
2	Text book on Intellectual Property Rights.	N.K. Acharya	Asia Law House,	Hyderabad
3	Law Relating to Intellectual Property	Dr. B.L. Waderha	Universal Law Publishing Co	
4	Intellectual Property Rights, (2011)	Dr. Sreenivasulu N. S.,	Regal Publications,	New Delhi
5	Intellectual Property Law in India (2006)	Justice P. S. Narayana	Goigia Law Agency,	Hyderabad.
6	Universal's "Intellectual Property Laws" (Bare Acts)		Universal Law Publishing Co. Pvt. Ltd.	
7	Law of Intellectual Property	Dr. S. R. Mynei	Asia Law House,	Hyderabad (2011).

<b>8</b>	Intellectual Property Rights – Heritage, Science & Society Under International Treaties	A. Subbian	Deep & Deep Publications Pvt. Ltd.,	New Delhi
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**Suggested references**

**Web reference**

Sr. no	Lectures	Films	Animation	PPTs	Articles	Others
						<p><b>Important Websites Reference :</b></p> <ul style="list-style-type: none"> <li>• 1.CIPAM Website-<a href="http://cipam.gov.in/">http://cipam.gov.in/</a></li> <li>• 2.DIPP Website-<a href="http://dipp.nic.in/">http://dipp.nic.in/</a></li> <li>• 3.CGPTDM Website-<a href="http://www.ipindia.nic.in/">www.ipindia.nic.in/</a></li> <li>• Start-Up India Action Plan- <a href="http://startupindia.gov.in/uploads/pdf/Action%20Plan.pdf">http://startupindia.gov.in/uploads/pdf/Action%20Plan.pdf</a></li> <li>4.TKDL- <a href="http://www.tkdl.res.in/tkdl/langdefault/common/Home.asp?GL=Eng">http://www.tkdl.res.in/tkdl/langdefault/common/Home.asp?GL=Eng</a></li> <li>5.WIPO Website-<a href="http://www.wipo.int/about-ip/en/">http://www.wipo.int/about-ip/en/</a></li> </ul>

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## M. Com. Part I (Semester II)

### Group C (Advance Cost Accounting & Cost Systems) - Special Paper III

**Subject: Application of Cost Accounting**

**Course Code: 207**

#### Objectives:

1. To explain the concept of integral and non-integral cost accounting.
2. To study Product Life Cycle costing and Value Chain Analysis
3. To understand the mechanism of Activity Based Cost Management
4. To understand the utility of Cost Accounting data during transfer of product/services from one enterprise to the other either at national or at global level.

Unit No.	Unit Title	Contents	Skills to be developed
1.	Cost Book Keeping and Reconciliation between Cost and Cost financial Accounts	Book - keeping, Cost Ledgers, inter-locking and integral Accounts. Reconciliation of Cost and Financial Accounts, Reasons, needs & Methods.	To conceptualise the need to integrate financial and Cost Accounts.
2.	Product Life Cycle Costing(PLC): & Value Chain Analysis (VCA)	Introduction, Product Life Cycle, Phases and Characteristics of Product Life Cycle, Value Chain Analysis – Approach for Assessing Competitive Advantages – Value Chain Analysis V/S Conventional Management Accounting.	Develop understanding about PLC and VCA Concepts

3.	Cost Allocation and Activity Based Costing	<p>a- Cost Allocation – Meaning ,Types, Relationship between resources, activities, Cost and Cost drivers, Methods of allocating Costs in Cost Centres using Direct Method, Step Down Method and Reciprocal Method.</p> <p>b.Activity Based Costing – Introduction, Steps in ABC Systems, Levels of Activities Advantages &amp; Limitations</p>	<ul style="list-style-type: none"> <li>• Learners are expected to understand the logic behind ABC technique</li> <li>• To prepare cost formats under ABC &amp; to compare such results with the Traditional Overhead Accounting.</li> </ul>
4	Strategic Cost Management	<p>A) Transfer Pricing –Introduction, Meaning Advantages and Disadvantages, Setting Transfer Pricing , Methods of Transfer Pricing- Negotiated transfer pricing, Market Price, Cost-Based Price, Negotiated Prices &amp; Dual Prices</p> <p>B) Target Costing – Introduction, Concept, Objectives, Comparison between Target Costing and Cost Plus Pricing.</p>	Students are expected to understand the importance of Transfer Pricing & Target Costing in the changing scenario.

### Teaching Methodology

Unit No.	Total Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1	12	Giving list of items to the students and ask them to identify – Purely Financial, Purely Costing and both	Browse You	Preparation of Reconciliation Statement	Learners must be able to reconcile the cost and financial data.
2	12	Invite experts from industries having technical as well as practical exposure to related		Home Assignment to the students on	Understand the concepts of PLC and VCA.



		industries.	Tubes on these topics	related topics	
3	12	Discuss the concepts of ABC. Ask the students to prepare list of activities involved in the event and identify resources utilised in completion of such activities.		Visit to small units, identify the final product and list out the cost impact of each of such activity.	Understand the Cost Distortions in Traditional Costing and compare it with ABC .
4	12	<ul style="list-style-type: none"> <li>• Explain the national and global issues involved in Transfer Price Mechanism.</li> <li>• Discuss the practical cases on Target Costing e.g. Tata Nano Project. etc</li> </ul>	Ask students to study articles from Management Accountant on these topics.	Get insight into the concept of Transfer Pricing & Target Costing.	

### Methods of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested AD-On Course
Unit I	Multiple Choice Questions. Written Test, Internal Examination & PPT based presentation etc.	SPPU	Visit to industries and make a report on it.
Unit II			
Unit III			
Unit IV			

## References

<b>Sr. No</b>	<b>Title of the Book</b>	<b>Author</b>	<b>Publisher</b>	<b>Place</b>
01	Cost Accounting- Principles & Practices	Jawahar Lal & Seema Shrivastawa	Tata Mcgraw Hill	New Delhi
02	Advanced Cost Accounting And Cost Systems	Ravi M Kishor:	Taxmann	New Delhi
03	Cost Accounting Theory And Problems	S. N. Maheshwari	Mittal Shree Mahavir Book Depot.	New Delhi
04	Advanced Cost Accounting	Jain and Narang	Kalyani Publication	New Delhi
05.	Horngren's Cost Accounting-A Managerial Emphasis	Srikant M Datar&Madhav V Rajan	Pearson	Noida Up
06	Cost Accounting- Principles & Practices	Dr.M.N. Arora	Vikas Publishing House ,	New Delhi
07	Principles and Practices of Cost Accounting	Dr. SunitaPokharna	Success Publication	Pune

08	Cost Accounting	Dr. EknathKhedkar	Success Publication	Pune
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**Web References:**

Sr. No	Lectures	Films	PPTs	Articles	Others
For all the units.	Guest Lectures by Field Persons such as working executives from industries and of Practicing Cost and Management Accountants. .	You Tube films showing working of different industries.  Discovery Turbo Channel	You Tube lecture videos are available on all these topics.	Articles from the Professional Journal like The Management Accountant, The Chartered Accountant, The Chartered Secretary	<a href="https://icmai.in">https://icmai.in</a>

**Note: The breakup of marks in the Examination will be as follows:**

- 30 % of marks for Theory & 70 % of marks for Practical.Problems
- Area of practical problems:
  1. Cost & Financial Reconciliation Statement
  2. Activity Based Costing
  3. Transfer Pricing

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## M. Com. Part I (Semester II)

### Group C (Advance Cost Accounting & Cost Systems) - Special Paper IV

**Subject: Cost Control and Cost Systems**

**Course Code: 208**

**Objective:** To equip the students with knowledge and skill to design and implement cost control, cost reduction programme and different cost systems

Unit No.	Unit Title	Contents	Skills to be developed
1.	Marginal Costing, Cost – Volume – Profit Analysis And Differential Costing	Marginal Costing- Meaning –Concept of Variability of Cost, Contribution, P/V Ratio, Break Even Analysis, Margin of Safety, Cost- Volume, Profit Analysis –  Differential Costing, Differential Costs,  Differential Cost Analysis, Features of Differential Costing, Practical Application.	To be able to solve problems on Marginal Costing.
2.	Pricing Decision	Introduction – Pricing of Finished Product- Theory of Price –  Pricing Policy – Principles of Product of Pricing – New Product Pricing	Understand pricing mechanism under global competitive environment.
3.	Costing system Design & installation	Study of Production Process, Selection of Methods of Costing, Creating Cost Centers and Cost Codes. Deciding Basis of Apportionment of Various Overheads, Deciding Methods of Absorption. Fixing Responsibility and designing suitable MIS. Designing and  Installing Cost System In Computer Environment	Skills to differentiate between Cost Reduction and Cost Control techniques.  To understand the process of installation of Costing System.
4	a.Cost Control and	a. Introduction, Process of Cost Control and	.To understand the relationship between cost and

	Cost Reduction b.Productivity	Cost Reduction, Cost Reduction Programme and its Implementation ,Methods and Techniques  b.Productivity: Meaning, causes of lower Productivity , improvement in Productivity & Measurement of Productivity-Material, Labour, Machines, Capital , Power & overall Productivity.	productivity.

### Teaching Methodology

Unit No.	Total Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1	12	Identify variable cost and fixed cost from practical examples	Browse You Tubes on these topics	Preparation of BEP Charts by giving practical examples	Students must understand the role of Marginal Costing in short term decision making.
2	12	Study of Case Studies on Pricing of products/services.		Visit to nearby organization and collect pricing data	Understand the relevance of pricing
3	12	Guest lecture from experts.		Visit the organization to understand costing system installation	Students will be able understand process of installation of costing system.
4	12	To discuss cases on capacity utilization, productivity etc.		Understand the importance of productivity of the employees through interviews of few contractors.	Develop insight into Cost Reduction and Cost Control technique & to understand measurement of productivity

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested AD-On Course
Unit I	Multiple Choice Questions. Written Test, Internal Examination PPT based presentation etc.	SPPU	Visit to industries and make a report on the visit.
Unit II			
Unit III			
Unit IV			

### References

Sr. No	Title of the Book	Author	Publisher	Place
01	Cost Accounting-Principles & Practices	Jawahar Lal & Seema Shrivastawa	Tata Mcgraw Hill	New Delhi
02	Advanced Cost Accounting And Cost Systems	Ravi M Kishor:	Taxmann	New Delhi
03	Cost Accounting Theory And Problems	S. N. Maheshwari	Mittal Shree Mahavir Book Depot.	New Delhi
04	Cost & Management Accounting	Jain and Narang	Kalyani Publication	New Delhi
05.	Horngren's Cost Accounting- A Managerial Emphasis	Srikant M Datar&Madhav V Rajan	Pearson	Noida Up
06	Cost & Management Accounting	Dr.M.N. Arora	Himalaya Publication	New Delhi
07	Costing advisor & Cost	PV Ratanam	Kitab Mahal	New Delhi

	Management			
08	Cost & Management Accounting	Sameer Kumar Chakravorthy	Central Publication	Kolkata
09	Cost & Management Accounting	Ravi M Kishor:	Taxman	New Delhi
10	Cost Accounting	Dr. EknathKhedkar	Success Publications	Pune
11	Principles and Practices of Cost Accounting	Dr. SunitaPokharna	Success Publications	Pune

**Web References:**

Sr. No	Lectures	Films	PPTs	Articles	Others
For all the units.	Guest Lectures by working executives from industries and of Practicing Cost and Management Accountants. .	You Tube films showing working of different industries.  Discovery Turbo Channel	You Tube lecture videos are available on all these topics.	Articles from the Professional Journal like The Management Accountant, The Chartered Accountant, The Chartered Secretary, Harward Business Review	<a href="https://icmai.in">https://icmai.in</a>

**Notes:** The breakup of marks in the Examination will be as follows:

- 30 % of marks for Theory & 70 % of marks for Practical Problems
- Area of practical problems:
  1. Marginal Costing – Application
  2. Differential Cost Analysis
  3. Pricing Decisions
  4. Measurement of Productivity

**M. Com. Part I (Semester II)**

## Group D (Cooperation & Rural Development) - Special Paper III

**Subject: -International Co-operative Movement**

**Course Code: - 209**

### **Objectives of the course:**

1. To acquaint the students with Organizational structure of Co-operative Business
2. To develop the capability of students for knowing different types of Co-operatives
3. To aware the role of state and central Govt. in development of co-operative sector

### **Depth of Programme: - Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Introduction and Origin of International Co-operative Movement</b>	Introduction, Origin of Co-operative Movement in the World- Growth of Co-operative Movement in International level, Co-operation in the post industrial revolution of Great Britain	<ul style="list-style-type: none"><li>• To understand Origin of Co-operative Movement in the World</li><li>• To understand Growth of Co-operative Movement in International level</li></ul>
<b>2</b>	<b>Co-operation in Social and Economic Systems</b>	Co-operation in Capitalistic Systems- Co-operation in Socialistic System-Cooperation in Mixed Economy	<ul style="list-style-type: none"><li>• To understand Co-operation in Capitalistic Systems</li><li>• To understand Socialistic System-Cooperation in Mixed Economy</li></ul>
<b>3</b>	<b>Co-operative Movement in the world</b>	The International Cooperation Alliance (ICA) Co-operative Movement in the UK,USA, India, China, Japan and Israel, World's largest co-operative	<ul style="list-style-type: none"><li>• To understand The International Cooperation Alliance</li><li>• To understand Co-operative Movement in Various nation</li></ul>



<b>4</b>	<b>Role of Co-operative Movement in Global Economy</b>	The impact of Co-operative Movement for the development of world economy, Problems and Suggestions	To understand the Role of Role of Co-operative Movement in Global Economy
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### Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative Methods to be used</b>	<b>Film Shows and AV Application</b>	<b>Project</b>	<b>Expected Outcome</b>
<b>1</b>	12	Pre reading, Class discussion, Review of Article for understand Recent scenario of International Co-operative Movement, Group discussion ,PPT	Short Film Show on International Co-operative Movement, A.V. Application (Audio and Visual Application)	Review on Report of International Co-operative Movement	Understanding of basic knowledge of International Co-operative Movement
<b>2</b>	12	Guest Lectures of eminent personalities in co-operative sector, experience sharing, Pre reading, Class discussion, examples through newspapers and internet resources, case studies, PPT	You Tube Video	Project Report on Co-operation in Capitalistic Systems	Understanding Co-operation in Social and Economic Systems
<b>3</b>	12	Organise workshop for students, Pre reading, Class discussion, examples through newspapers and internet resources. case studies, Power point presentation	Short film show of International Co-operative Movement	Review on World's largest co-operative	Understanding International Cooperation Alliance
<b>4</b>	12	Pre reading, Library visit, Class discussion, examples through newspapers and internet resources, Guest Lectures of eminent personalities, PPT	Presentation through Audio and Visual resources	Project Report on problems of Global Co-operative movement	Understanding Role of Role of Co-operative Movement in Global Economy

## Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Presentation, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Review of Article on International Co-operative Movement
Unit-II	Seminar, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Seminar on Co-operation in Social and Economic Systems
Unit-III	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Eminent person Guest Lecture
Unit-IV	Class participation, Case Studies, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Group Discussion on The impact of Co-operative Movement for the development of world economy

## References

Sr. No	Title of Book	Author/s	Publication	Place
1	International Co-operative Movement	W.P.Watkins		
2	International Co-operative Movement	Johnston Birchall		
3	Co-operation and Rural Development	Principal Dr.NitinGhorpade	Success	Pune
4	New Dimensions of Co-operative Management	G.S. Kamat	Himalaya Publication	New Delhi
5	Cases in Co-operative Management	G.S. Kamat	Himalaya Publication	New Delhi
6	Co-operative Organisation and Management	K.K.Taimani		
7	Human Resource Management Practices in Co-operative sector	Principal Dr.ShaikhAftab Anwar	Idea Publication	New Delhi
8	<a href="http://www.International">www.International</a> Co-operation Alliance			
09	Journal of Commerce and Management Thought(JCMT)			
10	Journal Co-operative Organization and Management , Journal of Co-operative studies			

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## M. Com. Part I (Semester II)

### Group D (Cooperation & Rural Development) - Special Paper IV

**Subject Name: -Co-operative Management and Education**

**Course Code: - 210**

**Depth of Programme: - Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
<b>1</b>	<b>Introduction Co-operation and Management</b>	Integration of Co-operation and Management, Importance of Co-operative Management, Professionalization of Cooperative Management.	<ul style="list-style-type: none"><li>• To understand Integration of Co-operative Management</li><li>• To understand Importance of Co-operative Management</li></ul>
<b>2</b>	<b>Structure of Co-operative organisation</b>	Organizational Structure of Co-operatives-Organization Chart for Large Scale Cooperative business, Co-operative banks , Communication and Leadership in Cooperative Organization – Federal Structure of Co-operative Organization , Audit and Taxation of Co-operative Organization	<ul style="list-style-type: none"><li>• To understand Organizational Structure of Co-operatives-Organization</li><li>• To understand the Co-operative banks</li><li>• To understand Communication and Leadership in Cooperative Organization</li><li>• To understand Audit process and Taxation of Co-operative Organization</li></ul>
<b>3</b>	<b>Co-operatives Education and Training</b>	Importance, Need, Role of Institutions in the Co-operative Training, Vaikunthbhai Mehata National Institute of co-operative management , Institute of Rural Management Anand (IRMA), Job Oriented Cooperative Training – National Co-operative Union of India, National Education Centre for Co-operative – National Council for Co-operative Training, Regional Institute of Co-operative Management – State	<ul style="list-style-type: none"><li>• To understand Importance, Need and Role of Institutions in the Co-operative Training</li><li>• To understand Various Co-operative Education and Training Institutions</li></ul>

		Cooperative Union – District Co-operative Union, Dr. Vithalrao Vikhe Patil Institute of Co-operative Management, Pune	
<b>4</b>	<b>Special Study of Co-operatives in Maharashtra</b>	a) Co-operative Sugar Factory- Growth role of Co-op. Sugar Factory in Rural Development B) Dairy Co-operatives progress and problems c) Management of Co-operative Housing Society d) Agricultural and Non-agricultural Credit Co-op. Societies E) Urban Co-operative Credit Societies	<ul style="list-style-type: none"> <li>• To understand the Role of Co-operative Sugar factory in Rural Development</li> <li>• To study Management of Co-operative Housing Society</li> <li>• To understand the work of Agricultural and Non-agricultural Credit Co-op. Societies</li> </ul>

### Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and AV Application	Project	Expected Outcome
<b>1</b>	12	Pre reading, Class discussion, examples through newspapers and internet resources. Case studies of Co-operative Bank for understand Recent scenario in Co-operative Management, Group discussion	Short Film Show on Co-operative Management, A.V. Application (Audio and Visual Application)	Project Report on Importance of Co-operative Management	Understanding of basic knowledge of Co-operative Management. Understanding Professionalization of Cooperative Management.
<b>2</b>	12	Guest Lectures of eminent personalities in co-operative sector, experience sharing, Pre reading, Class discussion, examples through newspapers and internet resources, case studies, PPT, study visit	You Tube Video	Review of Structure of Co-operatives-Organization	Understanding Organizational Structure of Co-operatives-Organization
<b>3</b>	12	Organise workshop for students, Pre reading, Class discussion, examples through newspapers and internet	Short film show of Various Co-operative	Project on Role of Institutions in the Co-operative Training	Understanding The role of Various Co-operative Education and Training

		resources. case studies, Power point presentation, Interview of Co-operative Bank Manager, Field visit	Education and Training Institutions		Institutions in Co-operative Management
4	12	Pre reading, Library visit, Class discussion, examples through newspapers and internet resources, Guest Lectures of eminent personalities, PPT	Presentation through Audio and Visual resources	Project on Dairy Co-operatives progress and problems	Understanding Special Study of Co-operatives in Maharashtra

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Presentation, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Seminar/Workshop on Co-operative Management
Unit-II	Seminar, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Study visit to Co-operative Organisation
Unit-III	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	At list one field visit to Education and Training Institution of Co-operative Management
Unit-IV	Class participation, Case Studies, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Review of Training Institution of Co-operative Management

## References

Sr. No	Title of Book	Author/s	Publication	Place
1	Co-operation and Rural Development	Principal Dr.NitinGhorpade	Success	Pune
2	New Dimensions of Co-operative Management	G.S. Kamat	Himalaya Publication	New Delhi
3	Cases in Co-operative Management	G.S. Kamat	Himalaya Publication	New Delhi
4	Co-operative Organisation and Management	K.K.Taimani		
5	Human Resource Management Practices in Co-operative sector	Principal Dr.ShaikhAftab Anwar	Idea Publication	New Delhi
6	Co-operative Management and Administration	I L O		
7	Consumer Co-operation in India	G.S. Kamat		
8	Co-operation	Prof L.P. Wakale and Dr. G.H.Barhate	Sheth Publishing	Mumbai
9	NCCT. in			
10	Anand (IRMA). In			
11	Journal of Commerce and Management Thought(JCMT)			
12	Journal Co-operative Organization and Management , Journal of Co-operative studies			

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## M. Com. Part I (Semester II)

### Group E (Business Practices & Environment) - Special Paper III

**Subject: - Modern Business Practices**

**Course Code:-211**

**Objectives of the course:**

- 1) To understand objectives and functions of Chamber of Commerce and Trade Associations
- 2) To understand the objectives and functions of public enterprises
- 3) To know agricultural business practices
- 4) To understand allied agricultural business

**Depth of Programme: - Fundamental Knowledge**

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Chambers of Commerce and Trade Associations</b>	Maharashtra Chamber of Commerce, Industries and Agricultural and their local branches, MahrathaChamber of Commerce, Industries & Agriculture, Indian Merchants, Objectives and Functions, Federation of Indian Chamber of Commerce and Industries (FICCI) -Role and Functions	<ul style="list-style-type: none"><li>• To understand the nature and scope of Maharashtra and MahrathaChamber of Commerce</li><li>• To understand the objectives and functions of Industries, Agriculture and Indian Merchants</li><li>• To understand role and functions of FICCI</li></ul>
2	<b>Public Enterprises and Public Utilities</b>	Objectives, functions and Organization of public Enterprises and Public Utility – Management practices of Public enterprises in India –	<ul style="list-style-type: none"><li>• To understand the Objectives, functions and Organization of public Enterprises and Public Utility</li><li>• To understand various aspects of Public Enterprises viz its management, autonomy and its control</li></ul>

		Efficiency – Autonomy and control of public Enterprises – recent practices and policies in public Enterprises and Public Utilities	<ul style="list-style-type: none"> <li>To study recent practices and policies in public Enterprises and Public Utilities</li> </ul>
<b>3</b>	<b>Agricultural Business Practices</b>	Characteristics of Agriculture Business – Nature of Indian Agriculture – Government policies related to agricultural business - Problems and prospects of Agricultural Business – Agricultural Taxation policy, Agricultural products and Farms Services - Nature and disposal of Agricultural By - products - Farm waste - cost of recycling of farm waste	<ul style="list-style-type: none"> <li>To gain the fundamental knowledge about agricultural business</li> <li>To evaluate the performance agricultural business, its problems and prospects</li> <li>To understand latest Agricultural Taxation policy</li> <li>To understand the nature and disposal of Agricultural By - products and Farm waste</li> </ul>
<b>4</b>	<b>Allied agricultural businesses</b>	Dairy Poultry – Bio – Manures, etc. WTO and its impact on agri-business practices	<ul style="list-style-type: none"> <li>To understand the fundamental knowledge regarding Dairy and Poultry</li> <li>To find out the impact of WTO on agri-business practices</li> </ul>

### Teaching Methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative Methods to be used</b>	<b>Film Shows and A.V. Application</b>	<b>Project</b>	<b>Expected Outcome</b>
<b>1</b>	12	Guest Lectures of eminent personalities in Maharashtra and Mahratha Chamber of Commerce and their experience sharing, Pre reading, Class discussion, examples from real life through newspapers and internet resources	Film Show on Chamber of Commerce Film on FICCI	Project on Maharashtra and Mahratha Chamber of Commerce Project on Trade Associations	Understanding of basic knowledge of Chamber of Commerce and their working Understanding the functioning of FICCI
<b>2</b>	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources. Case studies of Public Enterprises and	You Tube Video on Public Enterprises and Public Utilities	Project Report on Objectives, functions and Organization of public Enterprises and Public Utilities	Learning the functioning of Public Enterprises and Public Utilities



		Public Utilities			
3	16	Debate on Burning and real life issues such related with Agriculture Business and Agricultural Taxation policy, Class discussion, examples from real life through newspapers and internet resources.	PowerPoint Presentation on Agricultural Business and Agricultural Taxation policy	Project on Agricultural Business and government policies	Evaluate the performance of Agricultural Business and its development in India Understanding the nature of Agricultural Taxation policy
4	08	Pre reading, Class discussion, examples from real life through newspapers and internet resources, case studies, Field visit to Dairy and Poultry	Presentation on working of Dairy and Poultry and impact of WTO on agri-business practices	Project on working of Dairy and Poultry activities	Understanding the procedure of Dairy and Poultry and impact of WTO on agri-business practices

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Functioning of Maharashtra and Mahratha Chamber of Commerce
Unit-II	Seminar, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Add on course on Business Enterprises and Public Utilities
Unit-III	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Agro Tourism and Agriculture Business
Unit-IV	Class participation, Case Studies,	Semester Examination-10% MCQ	Management of Dairy and Poultry

	Assignment, Library Work, Unit Test, Mid-Semester Examination	70% Descriptive Questions 20% Short Notes	activities
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## References

Sr. No	Title of Book	Author/s	Publication	Place
1	Principles of Practice of Marketing	C.B.Mamoria	KitabMahal	New Delhi
2	Commodity Marketing	P.L.Gadgil	ShubhadaSarswat,DistributiveTrade	Pune
3	Business Environment Text & Cases	Francis Cherunilam	Himalaya Publishing House Pvt.Ltd.	Mumbai
4	Regulated Markets	W.R.Natu	Asia Publishing House	Mumbai
5	Financial Derivatives & Risk Management	O. P.Agarwal	Himalaya Publishing House Pvt.Ltd.	Mumbai
6	Bombay Money Market.	B.AParekh	Bombay <a href="#">A.R. Sheth and Co.</a>	Mumbai

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## M. Com. Part I (Semester II)

### Group E (Business Practices & Environment) - Special Paper IV

**Subject: - Business Environment Analysis**

**Course Code:-212**

#### Objectives of the course:

- 1) To understand Indian Industrial Environment
- 2) To understand financial environment and institutions
- 3) To know environmental analysis and global environment
- 4) To understand problems and growth and remedies thereof

#### Depth of Programme: - Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	Indian Industrial Environment	Growth of industries in public & private sectors in India – small and cottage industries mergers and acquisitions, Foreign investment-Foreign Technology and MNCS	<ul style="list-style-type: none"><li>• To understand the nature and Growth of public and private sectors in India</li><li>• To mergers and acquisitions of small and cottage industries</li><li>• To understand role of foreign investment and technology</li></ul>
2	Financial Environment of Business	Indian Money Market - Growth of capital Market in India - Banking financial institutions - Role of Public, Private, and Co-operative Banks - Role of foreign banks and non Banking Institutions	<ul style="list-style-type: none"><li>• To understand the nature and growth of Indian Money Market and Capital Market</li><li>• To understand the role of Public, Private, Co-operative Banks, Foreign Banks and non</li></ul>

			Banking institutions
3	Environmental Analysis	Meaning and importance - Techniques of Analysis- Verbal and Written Information Search and scanning, Spying, Forecasting, Limitations of these techniques, Competitions analysis - Rivalry Amongst existing firms, threat of newentrants threat of substitutes - Bargaining power of suppliers and buyers, Global Environment Natural, Social, Cultural, Demographic and Technological environment and its impact on world trade	<ul style="list-style-type: none"> <li>To gain the fundamental knowledge about Environmental Analysis and its techniques</li> <li>Understanding various types of Business environment and their impact on business and world trade</li> </ul>
4	Problems of growth	Unemployment, Poverty, Regional Imbalance, Social injustice, Parallel economy, Lack of technical knowledge and information	<ul style="list-style-type: none"> <li>To understand and evaluate the issues like Unemployment, Poverty, Regional imbalance, Parallel economy etc.</li> </ul>

### Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Project	Expected Outcome
1	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources, Debate	Film Show on Small and Cottage Industries and mergers and acquisitions	Project on Foreign Investment and Foreign Technology Project on Mergers and Acquisitions	Understanding of mergers and acquisitions of small and cottage industries Understanding Foreign Investment and Foreign Technology
2	12	Pre reading, Class discussion, examples from real life through newspapers and internet resources. Case studies of Public, Private, and Co-operative Banks	You Tube Video on Public, Private, and Co-operative Banks	Project Report on Indian Money Market and capital Market in India Project on comparative study of Public, Private, and Co-operative Banks	Learning the on Indian Money Market and capital Market Understanding comparative study of Public, Private, and Co-operative Banks

3	16	Pre reading, Class discussion, case studies, debate on impact of various types of environments on world trade	PowerPoint Presentation on types of business environment	Project on types of business environment Project on techniques of analysis of environment	Evaluate various types of business environment Understanding techniques of analysis of environment
4	08	Pre reading, Class discussion, debate on the issues like Unemployment, Poverty, Regional imbalance, Parallel economy etc.	You Tube Video and Film Show on issues like Unemployment, Poverty, Regional imbalance, Parallel economy etc.	Project on problems of growth of business	Understanding the seriousness, causes and remedies of various issues like Unemployment, Poverty, Regional imbalance, Parallel economy etc.

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Foreign Investment and Foreign Technology
Unit-II	Seminar, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Nature, Scope and Working of Indian Money Market and capital Market
Unit-III	Class participation, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Techniques of Business Environment Analysis
Unit-IV	Class participation, Case Studies, Assignment, Library Work, Unit Test, Mid-Semester Examination	Semester Examination-10% MCQ 70% Descriptive Questions 20% Short Notes	Critical Study of Social issues like Unemployment, Poverty, Regional Imbalance, Social injustice, Parallel

			economy
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## References

Sr. No	Title of Book	Author/s	Publication	Place
1	Economic Environment SYBA	K Misha, Puri	Himalaya Publishing House Pvt.Ltd.	Mumbai
2	Bombay Money Market.	B.AParekh	Bombay <a href="#">A.R. Sheth and Co.</a>	Mumbai
3	Global Economy and Business	Francis Cherunilam	Himalaya Publishing House Pvt.Ltd.	Mumbai
4	Business Environment	Chllaaghan, Ellison EdwardAmold		
5	Journal of Commerce and Management Thought(JCMT)			
6	Economic and Polictical Weekly.			

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**M. Com. Part I (Semester II)**  
**Group F (Business Administration) - Special Paper III**

**Subject : - Business Ethics & Professional Values**

**Course Code No: 213**

**Objectives of the course**

1. To raise the students general awareness on the ethical dilemmas at work place
2. To understand the differing perceptions of interest in business related solutions
3. To present the concept of Corporate Social Responsibility and explore its relevance to ethical obligations and ethical ideals present in the relationship between employers and employees
4. To investigate whether ethics set any boundaries on competition , marketing, sales and advertising
5. To enable students to validate or correct , personal ideas about various ethical perspectives
6. To enable students to develop their own considered judgment about issues in Business Ethics
7. To foster more careful, disciplined thinking in trying to resolve issues in business ethics
8. To prepare students to play a constructive role in improving the sustainable development with which they may become involved

**Depth of the program – Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills to be developed</b>
1	<b>Business Ethics and Professional Values</b>	a. Business Ethics – Introduction, Meaning, Scope , Principles , importance , Code of Ethics and Theories b. Professional Values – Meaning , Significance , Scope and Human Values c. Ethical Decision Making – Meaning, determinants, process of ethical decision making	1. Understanding Knowledge of established methodologies of solving ethical problems 2. Recognizing significance of Professional Values
2	<b>Corporate Social Responsibility and Corporate Governance</b>	a. CSR – Introduction , advantages , scope for CSR in India , Legal provisions for CSR, Forms of CSR and Indian Corporations b. Corporate Governance – concept Objectives , features , advantages , code whistle blowing , types arguments and justification c. Value Based Management – meaning, benefits and methods =, Vedic Management for business ethics	1. Knowing CSR and its scope and forms 2. Analysis of Corporate Governance and Value Based Management
3	<b>Indian Ethical Practices</b>	a. Indian Ethical Practices Finance b. Indian Ethical Practices Marketing c. Indian Ethical Practices Information Technology d. Ethics at work place e. Indian Ethical Practices HRM	Recognizing the unethical issues in Finance , Marketing , IT , HRM and at workplace
4	<b>Emerging issues in Business Ethics and Environmental issues</b>	a. Ethics in Environment – environmental crisis , issues relating to environmental degradation , natural resources depletion and pollution b. Sustainable Development – Meaning, Principles. Goals of Sustainable Development, Strategy to achieve Sustainable	1. Recognizing environmental issues and its impact on Business 2. Achieving Sustainable Development



		Development	
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### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Case study for Ethical Values and Decision making	PPT and examples of Indian and Foreign Companies	Collect Cases of Ethical Value Decisions	To understand How companies ethically operate
2	12	PPT and Comparative study of CSR practices and Corporate governance	Case Study of any Organization	Collection of Data and information on CSR practices and Corporate Governance of a company	To understand how CSR activities help the society for better living
3	12	Guest Lectures by Experts from corporate	PPT on possible ethical practices in different areas of Business Administration	Case study of ethical practices adopted by a company	To understand how ethical practices can be adopted in different areas

					of business
4	12	How Business Administration can be environment friendly ( case study with examples)	Video Clippings of different corporate organizations working towards sustainable development and environment protection	Case study on Sustainable Development Project undertaken by an organization	Awareness on the importance of environmental issues and Sustainable Development

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Internal Class Room Test for Conceptual understanding	As per University structure	Library assignment for conceptual understanding
Unit – II	Case Study presentation	As per University structure	15 days course on CSR including Visit to an organization
Unit – III	Paper Presentation	As per University structure	Listing out the various unethical practices in

			different areas of Business Administration
Unit – IV	Report on work of an organization for Sustainable Development  OR Visit to an organization to study the consideration of Sustainable Development	As per University structure	One month Certificate course on Sustainable Development

## References :

### List of Books Recommended :-

1. Ethics in Management – By S.S.Sherlekar (Himalaya Publication)
2. Business Ethics and Corporate Governance – By S.S.Khanka(S.Chand Publication)
3. Business Ethics and Corporate Governance – By S.K.Bhatia (Deep and Deep sons)
4. Management by Values – By S.K.Chakraborti( Oxford University Press)
5. E- Commerce – A study in Business Etics – By Rituparna Raj (Himalaya Publication).
6. E- Commerce and It's Applications – By Dr. U.S. Pandey , Rahul Srivastava and Saurabh Shukla.(S.Chand Publication)

7. The age of Sustainable goals – By Jeffery D. Saches and Ki Moon Ban( Columbia University Press)
8. Atlas of Sustainable Development Goals 2017: from World Development Indicators – by World Bank( World Bank Publication)
9. Business Ethics and Corporate Governance – By A.C.Fernando ( Dorling Kindersly)
10. Corporate Governance: Principle , Policies and Practices – By Bob Tricker (Oxford University Press)

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**M. Com. Part I (Semester II)**  
**Group F (Business Administration) - Special Paper IV**

**Subject : - Elements of Knowledge Management**

**Course Code – 214**

### Objectives of the course

- 1 To develop Analytical and Research oriented skills among the students.
- 2 To understand value application and relevance of Knowledge management in today's corporate world.
- 3 To promote research and innovation ideas based on Knowledge Management.
- 4 To enhance knowledge level and practice of linking theoretical background with applied Social Science.

Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Introduction to Knowledge Management</b>	a Knowledge Management - Concept , Meaning , Definition , Nature and Relevance of it in today's Business world. b Knowledge Management Process c Approaches to Knowledge Management d. Difference between information and knowledge	Developing Conceptual Skill and Improving analytical Ability .
2	<b>Tools and Techniques of Knowledge Management</b>	a Concept , Meaning , Types of Knowledge sharing b System of Presenting Knowledge c Role of Knowledge Management in Management of Change d. Measurement of Knowledge e. Role of a Leader in Knowledge Management	Technical and Practical Oriented Skills
3	<b>Cross Functional areas and Knowledge</b>	a. Finance and Knowledge Management b. Marketing and Knowledge Management c. E- Commerce and Knowledge Management d. TQM and Knowledge Management	Value based and Application Oriented Skills

	<b>Management</b>	<ul style="list-style-type: none"> <li>e. CRM and Knowledge Management</li> <li>f. Human Resource and Knowledge Management</li> </ul>	
<b>4</b>	<b>Knowledge Strategies</b>	<ul style="list-style-type: none"> <li>a. Meaning , Nature , Scope and knowledge strategy creation</li> <li>b. Using Knowledge Management to safeguard Intellectual Property</li> <li>c. Knowledge engineering for IT based services</li> <li>d. Future Prospects of Knowledge Intensive Business Services and its impact on the economy</li> </ul>	Administrative and Management skills

**Teaching Methodology**

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative methods to be used</b>	<b>Film shows and AV Applications</b>	<b>Project</b>	<b>Expected Outcome</b>
1	12	Case Study and PPT	PPT	Home Assignment	Conceptual Clarity
2	14	Group Discussion	Corporate Cases and Discussions on it	Written Test	Analytical ability
3	10	Multiple Choice Question and Interview	Online Multiple Choice Question Test	Report Writing	Application Oriented Skills
4	12	Report Writing	Referring to various websites	Discussion with exercises	Managerial skills

### **Method of Evaluation**

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit – I	Home Assignment	Written exam	Visit to Corporates
Unit – II	Continuous Evaluation/PPT	Written exam	Report on Field Visit
Unit – III	Continuous Evaluation/ MCQ	Written exam	Interaction with experts
Unit – IV	Continuous Evaluation/Case Study	Written exam	Guest lectures on concerned topics

## **References :**

### List of Books Recommended :-

- 1 Knowledge Management – By Elias and Hassan Gazai ( Pearson Publication)
- 2 E-World Emerging Education Pvt. Ltd. – By Arpita Gopal and Chandranil Singh
- 3 Knowledge Management Toolkit – By Amrit Tiwan
- 4 Knowledge Management Field Work – By Bukowitz W. R. and Williams R. I.
- 5 Building the Knowledge Management Network – By Egaallo C.F.
- 6 Change Management for Competitive Success – By Pettigrew A., Whipp R.,(Infinity Books)



## Group G (Advanced Banking & Finance) - Special Paper III

**Subject : Banking Law and Practices**

**Course code: 215**

**Objectives:**

1. To enable students to acquire sound Knowledge of banking laws and practices in India.
2. To make the students aware about the latest developments in the field of banking law.
3. To enable the students to understand modern banking practices.
4. To enable the students to establish a link between the legal provisions and the practical aspects of banking.

Unit No.	Topic	No. of Periods	Teaching Method
01	<b>Introduction to Prevention of Money Laundering Act, 2002 :-</b> 16  Provisions relating to: Preliminary (Section 1 and 2), Offence of money laundering (Section 3 and 4) ,Attachment, adjudication and confiscation (Section 5 and 11), Obligation of banking companies, financial institutions and intermediaries (Section 12 and 15) Summons, searches and seizures (Section 16 and 24) The RBI guidelines regarding prevention of money laundering, The Prevention of Money Laundering (Amendment) Act, 2012	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet
02	<b>The Foreign Exchange Management Act, 1999</b>  Provisions relating to: Preliminary (Sec 1-2), Regulation and management of foreign exchange (Sec 3 to 9) Authorized person (Section 10 to 12) Contravention and penalties (Section 13 to 15)Adjudication and appeal (Sections 16 to 21 and sections 34-35) Directorate of enforcement (section 36 to 38).	10	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet

03	<p><b>Asset - Liability Management :-12</b></p> <p>Definition of assets and liabilities, Asset liability mismatches on the grounds of locations, maturity, return and currency Risks while managing the assets and liabilities: Liquidity risk, Interest rate risk, Pre-mature withdrawal and pre-payment risk, Price Risk, Foreign exchange and sector based risk, Strategies to manage these risks, RBI guidelines for asset and liability management. Management of loan portfolio with special reference to Non Performing Assets (NPAs): Definition of NPA, Income Recognition and Asset Classification Norms (IRAC Norms), Reasons for rising NPAs, Strategic approach in reduction of Non Performing Assets, Management of investment Portfolio- Regulatory aspects, Overview of Basel I , II , and III</p>	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet
04	<p><b>Hi-tech banking and Mergers and Acquisition in banking sector and Banking Ombudsman Scheme 2006:-12</b></p> <p><b>A. Hi-tech banking and Mergers and Acquisition in banking sector:</b></p> <p>Role and uses of Technology upgradation- Impact of Technology on Banks- Protecting the confidentiality and secrecy of data, Meaning of Merger and Acquisition: Recent cases of mergers and acquisition in Indian Banking sector, Consolidation of Banks, Impact of mergers amongst Public Sector Banks</p> <p><b>B. Banking Ombudsman Scheme 2006:-</b></p> <p><b>I. Role of Banking Ombudsman:</b> Grounds of Complaint, Procedure for Filing Complaint; Power to Call for Information, Settlement of Complaint by Agreement, Award</p> <p><b>II. The Banking Codes and Standards Board of India : Customer Service , Grievances Redressal Mechanism</b></p>	14	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet
		Total- 48	

## **References,**

1. Justin Paul and Padmalatha Suresh; Management of Banking and Financial Services
2. Gordon and Natarajan; Banking Theory, Law and Practice- by Himalaya Publishing House
3. Joshi Vasant C. and Joshi Vinay V.; Managing Indian Banks- The Challenges Ahead- Sage Publication Ltd.
4. Singh, Agarwal (2011); Internet Banking Technology, Raj Publishing House, Jaipur.
5. Banking Law and Practices- Mr. Prakash Misal, Success Publications.
5. All relevant and recent Bare Acts, Indian Institute of Bankers: Laws and Practices relating to banking
6. Indian Institute of Banking and Finance; Principles and Practices of Banking, Macmillan Publisher India Ltd.
7. Legal and Regulatory Aspects of Banking– Published by Indian Institute of Banking & Finance.
8. All relevant and recent Bare Acts, Indian Institute of Bankers: Laws and Practices relating to banking
9. All journals published by Indian Institute of Banking and Finance
10. Indian Banking Associations Bulletin
11. RBI Bulletin
12. Customer Service & Banking Codes and Standards: IIBF Publication
13. [www.rbi.org.in](http://www.rbi.org.in)

**M.Com. Semester II**  
**Subject: Advanced Banking and Finance**  
**Course Code:215 & 216**  
**Format of Question Paper**

**Time: 3.00 Hours**

**Total Marks: 50**

<b>Notes :</b> 1. Attempt any Three Questions from Q.No.1 to 4 2. Question No.5 is compulsory. Attempt any Two short Notes 3. Figures to the right indicates full marks		
<b>Q.1</b>		<b>14</b>
<b>Q.2</b>		<b>14</b>
<b>Q.3</b>	a) b)	<b>07</b> <b>07</b>
<b>Q.4</b>	a) b)	<b>07</b> <b>07</b>
<b>Q.5</b>	<b>Write short notes (Any two)</b>	<b>08</b>
	a)	
	b)	
	c)	
	d)	

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## M. Com. Part I (Semester II)

### Group G (Advanced Banking & Finance) - Special Paper IV

Subject -: Monetary Policy

Course code: 216

#### Objectives:

1. To create awareness regarding the objectives and importance of monetary policy.
2. To make the students aware about the latest developments in the field of monetary policy committee in India.
3. To enable the students to understand the role of RBI in financial inclusion.
4. To acquaint students with the recent policy changes announced by RBI.

Unit No.	Topic	No. of Periods	Teaching Method
01	<b>Monetary Policy and Macro-economic environment management:</b>  Objectives of monetary policy: Price stability, Generation of employment, Exchange Rate Stability, Balanced growth etc., conflict between objectives: Growth v/s Inflation.	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Use of internet
02	<b>RBI's Monetary Policy Committee and the Instruments:</b>  A. Formation of Monetary Policy Committee: Purpose, Functions, Constitution and Decision	12	Lecture, PPT, Group Discussion, Library Work,

	<p>Making;</p> <p><b>B. Fiscal Policy v/s Monetary Policy</b></p> <p><b>C. Instruments of monetary policy -: Mechanism and Effectiveness of the instruments like- Bank Rate, Cash Reserve Ratio, Statutory Liquidity Ratio, Repo Rate, Reverse Repo Rate, Marginal Standing Facilities Rate</b></p>		Assignment, Use of internet
03	<p><b>RBI's Monetary Policy:</b></p> <p>A. A review of monetary policy of the Reserve Bank of India in the last five Years –</p> <p>B. .Recent policy changes announced by the R.B.I.</p>	10	<p>Lecture,</p> <p>PPT,</p> <p>Group Discussion,</p> <p>Library Work,</p> <p>Assignment, Use of internet</p>
04	<p><b>Reserve Bank of India and Financial Inclusion</b></p> <p>A. Meaning of financial literacy and importance of financial literacy</p> <p><b>B. Meaning of financial inclusion and importance of financial inclusion</b></p> <p><b>C.Role of RBI in Financial Inclusion</b></p>	14	<p>Lecture,</p> <p>PPT,</p> <p>Group Discussion,</p> <p>Library Work,</p> <p>Assignment, Use of internet</p>

	<p><b>D.R.B.I. and Rural credit: Priority Sector Advances, Role of NABARD</b></p> <p><b>E.Microfinance: Meaning of microfinance, functions of microfinance, progress of microfinance.</b></p>		
		Total-48	

#### List of Books and Journals

- 1) Monetary & Financial Sector Reforms in India – Y. Venugopal Reddy.
- 2) Business Aspects in Banking and Insurance- O.P. Agarwal, Himalaya Publishing House
- 3) Banking Theory and Practice- K.C. Shekhar and LekshmyShekhar, Vikas Publishing House Pvt. Ltd.
- 4) Money, Banking, International Trade And Public Finance- M.L. Jhingan, Vrinda
- 5) Indian Economy: Essays on money and finance, Dr. C.Rangarajan
- 6) Monetary Economics for India, Dr. Narendra Jadhav
- 7) rsaaLrajaoMd` 32016´ :BaartIyaAqa-vyavasqaa , sa@saosapiblakoSana , puNao.
- 8) maulaaNaIema.yau.32017´ :svayaMsahayyatasamaUhvasaUxmaiva%tvvyavasqaapna , sa@saosapiblakoSana , puNao.
- 9) Govt. of India- Economic Survey
- 10) R.B.I.: Functions and Working – R.B.I. Publication.
- 11) R.B.I. Bulletins.
- 12) R.B.I. Annual Reports.

13) Trends & Progress of Banking in India- R.B.I. Annual

14) Annual Report on Trend and Progress of Banking in India.

### **M. Com. Part I (Semester II)**

#### **Group H (Advanced Marketing) - Special Paper III**

**Subject: Customer Relationship Management & Retailing**

**Course Code -: 217**

#### **Objectives of the course**

- 1 To understand the importance of CRM
- 2 To make students aware of the latest development in CRM
- 3 To get students acquainted about eCRM and its tools
4. To help students understand various issues related with CRM implementation

#### **Depth of the program – Detail Knowledge**

#### **Objective of the Program**

- a. To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing techniques.
- b. To develop students' independent logical thinking and facilitate personality development.
- c. To prepare the students for seeking suitable careers in the field of marketing.
- d. To impart the knowledge about how to collect the data and interpret it.
- e. To develop among students Communication and Analytical skills



Unit No	Unit Title	Contents	Purpose Skills to be developed
01	<b>Emerging CRM</b>	<p><b>Introduction:</b> Evolution of Relationship as a Marketing tool, Emergence of CRM Practice/ Factors responsible for the growth of CRM. CRM Cycle, Importance of CRM</p> <p><b>Emerging CRM</b> Introduction, Customer Development Process, customer Retention, Customer Retention Management, Reasons for Customer Switching and Strategies for Retention, Importance of customer retention, Customer Recall Management, Customer Recall Strategies CRM a Cost benefit analysis.</p>	To identify CRM factors which are responsible for the growth of CRM and also emerging trends in CRM
02	<b>CRM and I.T</b>	eCRMan I.T Tool, e CRM in Business, Features of e- CRM, Technologies of E CRM, Important CRM Softwares—Oracle, Clarify, People Soft and My Sap CRM. Applications of e CRM,	To enable the students about eCRM and IT
03	<b>Latest Development in CRM</b>	Changing Roles of CRM , Customer Experience Management, Customer Profitability, Customer Classification based on Profitability, Customer Profitability as a strategic Management Tool, Customer Profitability and company Value, Customer Experience Management and Customer Profitability Management, Customer Lifetime Value	To get familiar withthe latest development in CRM
04	<b>CRM Implementation Issues &amp; People factor</b>	<p><b>CRM Implementation Issues :</b> Challenges of CRM Implementation, Essentials of CRM Principle, Customer Satisfaction, Importance of Customer Satisfaction, Customer Expectation, Customer Perception.</p> <p><b>People factor in CRM—</b> Customer Centric Organisational Structure, Employee Organisation Relationship, Employee Customer Orientation</p>	To get acquainted about CRM implementation issues.

### Teaching methodology

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative methods to be used</b>	<b>Film shows and AV Applications</b>	<b>Project</b>	<b>Expected Outcome</b>
01	14	Guest Lecture, Presentation of the students and also videos which are available on youtube	Videos on Youtube	N.A	Student Will understand the concept & Importance of CRM and also about emerging CRM
02	10	Field visit to IT industry  Guest Lecture of IT Expert  Case Study Method	Videos on Youtube	Report based on field visit to IT industry	Student will get in depth knowledge about eCRM, it's technologies and also various important softwares
03	10	Guest Lecture, Case Study Method, Group Discussion	Videos on Youtube	N.A	Students will get acquainted about the latest development in CRM
04	14	Guest Lecture, Case Study Method, Presentation	Videos on Youtube	N.A.	Students will understand about the challenges in implementing CRM and people factor in CRM

### Method of Evaluation

<b>Subject</b>	<b>Internal Evaluation</b>	<b>External Evaluation</b>	<b>Suggested Add on Course</b>
Unit – I	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – II	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – III	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
Unit – IV	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.

### References

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Customer Relationship Management: Concept & Technologies	Francis Butle	Elsevier	Hungary
2	Customer Relationship Management : A Strategic Approach	LakshmanJha	Global India Publications Pvt Ltd.	New Delhi
3	Customer Relationship Management: A Global Perspective	Gerhard Rabb, RiadAjami, VidyaranaGargeya	Routledge	London
4	Customer Relationship Management:	JagdishSheth, AtulParatiyar	Tata Mc-Graw Hill	New Delhi

	Emerging Concepts, Tools, and Applications		Publication Company	
5	Customer Relationship Management: Concept, Strategy, and Tools	V.Kumar, Werner Reinartz	Elsevier	Hungary
6	Effective Customer Relationship Management	Amy Sauers	Cambria Press	New York
7	Customer Relationship Management	R.K Sungadhi	New Age International Publishers	New Delhi
8	Customer Relationship Management	Subhasish Das	Excel Books	New Delhi
9	Customer Relationship Management Concept & Cases	Alok Kumar Rai	Prentice Hall of India Private Limited,	New Delhi.
10	Customer Relationship Management,	S. Shanmugasundaram	Prentice Hall of India Private Limited,	New Delhi.

### M. Com. Part I (Semester II)

#### Group H (Advanced Marketing) - Special Paper IV

Subject Name :-Service Marketing

Course code :-218

### Objectives of the course

1. To train the students in the concept of services and a comparison skills between types of goods and types of services.
2. To familiarize students about how to design services mix with reference to product & price
3. To make students aware about how to design services mix with reference to promotion and distribution
4. To identify consumer perception and how to develop consumer trust, goodwill and loyalty.

Depth of the program – Detailed Knowledge

### Objective of the Program

- d. To equip and train Post Graduate students to accept the challenges in the field of marketing by providing opportunities to study and analyze advanced marketing techniques.
- e. To develop students' independent logical thinking and facilitate personality development.
- f. To prepare the students for seeking suitable careers in the field of marketing.
  - d. To impart the knowledge about how to collect the data and interpret it.
  - e. To develop among students Communication and Analytical skills

Unit No	Unit Title	Content	Skills to be developed
01	<b>Introduction to Services</b>	Meaning, Definition and Characteristics of Services, Types of Services, Core and Augmented Services, Difference between goods and Services, Relevance, changes and trends in the present growing service sector.	To develop understanding of the concept of services and a comparison skills between types of goods and types of services.

02	<b>Designing Suitable Services Marketing Mix Part 1</b>	Designing of Services Mix with reference to Product and Price: Service Development Strategies, The Service Delivery Process, Pricing of Services, Service Pricing Strategies	To develop analytical skills related to designing of Product Mix and pricing Mix strategies.
03	<b>Designing Suitable Services Marketing Mix Part 2</b>	Designing The service Mix with reference to Promotion and Distribution: Developing the Services Communication Strategy, challenges associated with the development of the services communication strategy Managing the firms physical evidence, the development of servicescapes, Managing the senses when developing services capes, Defining and Measuring Service Quality	To develop quality consensus of service delivery and to enable them to measure service quality and its flow of delivery of various networking channels.
04	<b>Effective Management of Service Consumer</b>	Managing Service Consumers, Managing Consumer Service Perceptions, Defining and Measuring Consumer Satisfaction. Customer Loyalty and Retentions	To develop skills in identifying consumer perception and how to develop consumer trust, goodwill and loyalty.

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
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01	12	Guest Lecture, Presentation of the students and Lectures available on Youtube	Videos on Youtube	N.A	Students will understand various approaches to study marketing and also get sufficient knowledge about the factors which influencing marketing environment.
02	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will get in-depth knowledge about Product Mix and Price Mix
03	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will understand about Place Mix and Promotion Mix
04	12	Guest Lecture, Case Study Method, Presentation, Group Discussion	Videos on Youtube	N.A	Students will aware about various tools of Public Relation and also e-marketing promotion

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on

			<b>Course</b>
<b>Unit – I</b>	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
<b>Unit – II</b>	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
<b>Unit – III</b>	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.
<b>Unit – IV</b>	Class Test, Group Discussion, Presentation, Case Study, Home Assignment	Written Examination	N.A.

## References



<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Marketing Management	Arun Kumar, Rachana Sharma.	Atlantic Publishers & Distributors	New Delhi
2	Marketing Management	Amar Jyoti	Gennext Publishers	New Delhi
3	Services Marketing Concepts Applications and Cases	M.K. Rampal and S.L. Gupta	Galgotia Publishing Co	New Delhi
4	Services Marketing	S.M. Jha	Himalaya Publishing House	Delhi
5	Services Marketing Text and Cases	Steve Baron and Kim Harris	MacMillian Business	London
6	Selling the invisible	Harry Beckwith	Business Plus	Boston
7	Services Marketing	Peter Mudie and Anjela Pierrie	Butterworth-Heinemann	Great Britain
8	Services Marketing Concepts Strategies and Cases	K. Douglas Hoffman and John E.G. Bateson	Cengage Learning	USA

### **M Com Part I (Semester II) Question Paper Pattern for University Exam**

**Common Paper Pattern for all subjects except Cost Accounting, Management Accounting and Financial Accounting papers.**

**Instruction for the students:**

**1. Question 1 and 6 are compulsory.**

2. Answer any only three questions from Q no.2 to 5.

Q No	Compulsory/Choice	Nature of Question	Marks	Total Marks
Q1	Compulsory Question	MCQ	6 Marks	6 Marks
Q2	Write any three from Q2 to Q7	Long Answer Question	14 Marks	
Q3	Write any three from Q2 to Q7	Long Answer Question	14 Marks	
Q4	Write any three from Q2 to Q7	Long Answer Question	14 Marks	
Q5	Write any three from Q2 to Q7	Long Answer Question	14 Marks	42 Marks
Q6	Compulsory Question	Write any two short notes	6 Marks X 2Q	12 Marks
			<b>Total</b>	<b>60 Marks</b>

**Instruction for the Paper Setters:**

1	Q2 to Q5 to have at least two parts.( 2+10 or 6+6 or 3+9 or 4+8) as per requirement and suitability.
2	In Q6. Four short notes one from each chapter.
3	Q2 to Q5 Four Long answer questions from each chapter.

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# UNIVERSITY OF PUNE

## Master of Commerce (M.Com.) Semester Pattern with Credit System Revised with effect from June 2013

### **Preamble for Choice Based Credit System**

Since liberalization the socio-political-economic scenario is changing very fast. There is a significant transformation in term educational expectation and aspiration of the learner. The educational system also is witnessing many changes and challenges due to technological growth and changes in the Government policies. Education is no longer a concern of students but it has become a matter of social and economic importance. The changes at the global level has influence the educational system, structure and expectation of the users.

University education needs to take contingency of all these changes and restructure itself to stand in a competitive dynamic environment. Professional stream of learning like Commerce have to be properly upgraded to accommodate challenges of change, expectation of employers' and to offer global opportunities to the learners. From this point of view the course structure of post-graduate programme in Commerce needs to be structured. It has to be according to expectations of the learners, employers and the society. The learning inputs have to be more update, skilled based and with appropriate applications. The course programme should consider desire aptitude, attitude and acumen of the learner.

From this point of view University of Pune has introduced Choice Base Credit System of course structure. This system shall offer a flexible user friendly, opportunity to the learner, will broader the horizon of Commerce education and will give a fair chance to every single learner to exhibit his talent, acquired skills and enhance his personality. It will further enhance his opportunity of global mobility, to acquire different knowledge inputs from different global institutes.

### **1. Objectives :**

- a. To equip and train Post Graduate students to accept the challenges of Business World by providing opportunities for study and analysis of advanced Commercial and business methods and processes.
- b. To develop independent logical thinking and facilitate personality development.
- c. To equip the students for seeking suitable careers in management and entrepreneurship.
- d. To study by students methods of Data collection and their interpretations.
- e. To develop among students Communication, Study and Analytical skills.

## 2. Duration :

The M.Com. Course will be of Two Years duration consisting of Two part. i.e. Part I and Part II. Each part is having Two Semesters. Thus the M.Com. Course is of Four Semesters. For each Semester there will be Four Papers of 100 marks each. The M.Com. Degree will be of 1600 marks in aggregate.

## 3. Duration and Structure of Programme:

The M.Com (Semester pattern with Credit System) degree Programme shall be of 2 years' duration divided into two parts, Part I and Part II, and 4 semesters.

## 4. Eligibility :

The student who has passed any Bachelors degree of this University or any other recognized University shall be held eligible to be admitted to M.Com. Course.

## 5. Course Structure:

The M.Com. degree course will be of two year duration consisting of four semesters and of minimum 64 credits as below:

<b>Sr. No.</b>	<b>Semester</b>	<b>Total Credits</b>
1	Semester I	16
2	Semester II	16
3	Semester III	16
4	Semester IV	16
	<b>Grand Total</b>	<b>64</b>

Four credits for project work at 4<sup>th</sup> Semester (This will include credits for fieldwork, data presentation and report writing)

In each Semester, there will be four papers of 100 marks each out of which 50 marks will be for Internal Assessment (attendance, home assignments, class tests, long term papers, classroom presentation and 50 marks for University Examination. Thus M.Com. degree examination, four Semesters shall be of 1600 marks and of minimum 64 credits altogether. The following shall be the course structure.

6. The Scheme of Papers: The following will be the Scheme of papers:

**The List of Courses Semester I**

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
Semester I	Core Compulsory	101	Management Accounting	04	04	03	50	50	100	
		102	Strategic Management	04	04	03	50	50	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		<b>Group A (Advanced Accounting &amp; Taxation)</b>								
		103	Advanced Accounting	04	04	03	50	50	100	
		104	Income Tax	04	04	03	50	50	100	
		<b>Group B (Commercial Laws &amp; Practices)</b>								
		105	Information system and E-Commerce Practices	04	04	03	50	50	100	
		106	Intellectual Property Laws	04	04	03	50	50	100	
		<b>Group C (Advanced Cost Accounting &amp; Cost system)</b>								
		107	Advanced Cost Accounting	04	04	03	50	50	100	
		108	Costing Technique and Responsibility Accounting	04	04	03	50	50	100	
		<b>Group D (Co-operation &amp; Rural Development)</b>								
		109	Co-operative Movement in India	04	04	03	50	50	100	
		110	Organization of Co-operative Business	04	04	03	50	50	100	
		<b>Group E (Business Practices &amp; Environment)</b>								
		111	Organized Trades and Markets	04	04	03	50	50	100	
		112	Business Environment and Policy	04	04	03	50	50	100	
<b>Group F (Business Administration)</b>										
113	Production and Operation Management	04	04	03	50	50	100			
114	Financial Management	04	04	03	50	50	100			
<b>Group G (Advanced Banking &amp; Finance)</b>										
115	Legal Framework of Banking	04	04	03	50	50	100			
116	Central Banking	04	04	03	50	50	100			
<b>Group H (Advanced Marketing)</b>										
117	Marketing Techniques	04	04	03	50	50	100			
118	Consumer Behaviour	04	04	03	50	50	100			

## Semester II

Semester	Subject Types	Course Code	Title of the Paper	Hrs/ Week	Credit	Exam. Hours	Maximum Marks			
Semester II	Core Compulsory	201	Financial Analysis and Control/ Principals of Financial Accounting	04	04	03	50	50	100	
		202	Industrial Economics/ Economic Environment/Business Statistics/ Quantitative application	04	04	03	50	50	100	
	Core Elective/ Optional Subjects/ Special Subjects	<i>To choose any one Group of the following</i>								
		<b>Group A (Advanced Accounting &amp; Taxation)</b>								
		203	Specialized Areas in Accounting	04	04	03	50	50	100	
		204	Business Tax Assessment & Planning	04	04	03	50	50	100	
		<b>Group B (Commercial Laws &amp; Practices)</b>								
		205	E- Security & Cyber Laws	04	04	03	50	50	100	
		206	Laws Regulating to Copyrights & Design	04	04	03	50	50	100	
		<b>Group C (Advanced Cost Accounting &amp; Cost system)</b>								
		207	Application Cost Accounting	04	04	03	50	50	100	
		208	Cost Control & Cost System	04	04	03	50	50	100	
		<b>Group D (Co-operation &amp; Rural Development)</b>								
		209	International Co-operative Movement	04	04	03	50	50	100	
		210	Management of Co-operative Business	04	04	03	50	50	100	
		<b>Group E (Business Practices &amp; Environment)</b>								
		211	Modern Business Practices	04	04	03	50	50	100	
		212	Business Environment Analysis	04	04	03	50	50	100	
		<b>Group F (Business Administration)</b>								
		213	Business Ethics and Professional Values	04	04	03	50	50	100	
214	Elements of Knowledge Management	04	04	03	50	50	100			
<b>Group G (Advanced Banking &amp; Finance)</b>										
215	Banking Law & Practices	04	04	03	50	50	100			
216	Monetary Policy	04	04	03	50	50	100			
<b>Group H (Advanced Marketing)</b>										
217	Customer Relationship Management & Retailing	04	04	03	50	50	100			
218	Services Marketing	04	04	03	50	50	100			

### Semester III

Semester	Subject Types	Course Code	Title of the Paper	Hrs/Week	Credit	Exam. Hours	Maximum Marks			
Semester III	Core Compulsory	301	Business Finance/ Financial System	04	04	03	50	50	100	
		302	Research Methodology for Business	04	04	03	50	50	100	
	Core Elective/ Optional Subjects/ Special Subjects	<b>To choose any one Group of the following</b>								
		<b>Group A (Advanced Accounting &amp; Taxation)</b>								
		303	Advanced Auditing	04	04	03	50	50	100	
		304	Specialized Auditing	04	04	03	50	50	100	
		<b>Group B (Commercial Laws &amp; Practices)</b>								
		305	Laws Relating to International Business	04	04	03	50	50	100	
		306	WTO – Norms & Practices	04	04	03	50	50	100	
		<b>Group C (Advanced Cost Accounting &amp; Cost system)</b>								
		307	Cost Audit	04	04	03	50	50	100	
		308	Management Audit	04	04	03	50	50	100	
		<b>Group D (Co-operation &amp; Rural Development)</b>								
		309	Co-operative Credit System	04	04	03	50	50	100	
		310	Co-operative Banking System	04	04	03	50	50	100	
		<b>Group E (Business Practices &amp; Environment)</b>								
		311	Entrepreneurial Behaviour	04	04	03	50	50	100	
		312	Entrepreneurship	04	04	03	50	50	100	
		<b>Group F (Business Administration)</b>								
		313	Human Resource Management	04	04	03	50	50	100	
314	Organizational Behaviour	04	04	03	50	50	100			
<b>Group G (Advanced Banking &amp; Finance)</b>										
315	Foreign Exchange	04	04	03	50	50	100			
316	International Finance	04	04	03	50	50	100			
<b>Group H (Advanced Marketing)</b>										
317	International Marketing	04	04	03	50	50	100			
318	Marketing Research	04	04	03	50	50	100			

### Semester IV

Semester	Subject Type	Course Code	Title of the Paper	Hrs/Week	Credit	Exam. Hours	Maximum Marks			
Semester IV	Core Compulsory	401	Capital Market and Financial Services/ Portfolio Management	04	04	03	50	50	100	
		402	Industrial Economic Environment/ Operations Research	04	04	03	50	50	100	
		<i>To choose any one Group of the following</i>								
		<b>Group A (Advanced Accounting &amp; Taxation)</b>								
		403	Recent Advances in Accounting, Taxation, Taxation and Auditing	04	04	03	50	50	100	
		404	Project Work/ Case Studies	04	04	03	50	50	100	
		<b>Group B (Commercial Laws &amp; Practices)</b>								
		405	Recent Advances in Commercial Laws and Practices	04	04	03	50	50	100	
		406	Project Work/Case Studies	04	04	03	50	50	100	
		<b>Group C (Advanced Cost Accounting &amp; Cost system)</b>								
		407	Recent Advances in Cost Auditing and Cost System	04	04	03	50	50	100	
		408	Project Work/Case Studies	04	04	03	50	50	100	
		<b>Group D (Co-operation &amp; Rural Development)</b>								
		409	Recent Advances in Co-operative and Rural Development	04	04	03	50	50	100	
		410	Project Work/Case Studies	04	04	03	50	50	100	
		<b>Group E (Business Practices &amp; Environment)</b>								
		411	Recent Advances in Business Practices and Environment	04	04	03	50	50	100	
		412	Project Work/Case Studies	04	04	03	50	50	100	
		<b>Group F (Business Administration)</b>								
		413	Recent Advances in Business Administration	04	04	03	50	50	100	
	414	Project Work/Case Studies	04	04	03	50	50	100		
	<b>Group G (Advanced Banking &amp; Finance)</b>									
	415	Recent Advances in Banking and Finance	04	04	03	50	50	100		
	416	Project Work/Case Studies	04	04	03	50	50	100		
	<b>Group H (Advanced Marketing)</b>									
	417	Recent Advances in Marketing	04	04	03	50	50	100		
	418	Project Work/Case Studies	04	04	03	50	50	100		



## 7. Scheme of Examination:

The examination of regular students of M.Com. degree course of the University of Pune admitted in the academic session 2013-14 and after shall be based on:

- (a) Semester Examination
- (b) Continuous Assessment
- (c) Choice Based Credit System, and
- (d) Semester Grade Point Average and Cumulative Grade Point Average System

For each paper of 100 marks, there will be an Internal Assessment (1A) of 50 marks and the University Examination (UE) of 50 marks/ 3 hours duration at the end of each semester. A candidate who will secure at least 40% marks allotted to each paper will be given 4 credits. A candidate who does not pass the examination in any subject or subjects in one semester will be permitted to appear in such failed subject or subjects along with the papers of following semesters.

The Internal Assessment for each paper will be 50 marks which will be carried out by the department during the term. The Internal Assessment may be in the forms of written test, seminars, term papers, presentations, assignments, orals or any such others. The distribution of internal assessment marks shall be as follows:

Midterm Test	20
Presentation/Role Play	10
Case studies/ Group Discussion	10
Quiz / Home Assignment	10
<b>Total</b>	<b>50</b>

There shall be four semester examinations: first semester examination at the middle of the first academic year and the second semester examination at the end of the first academic year. Similarly, the third and fourth semester examinations shall be held at the middle and the end of the second academic year, respectively.

A student cannot register for the third semester, if she/he fails to complete 50% credits of the total credits expected to be ordinarily completed within two semesters.

## 8. Research project work:

There will be a Research Project to be prepared by a student during the fourth semester. The objective of the project work is to introduce students to research methodology in the subject and prepare them for pursuing research in theoretical or experimental or computational areas of the subject. The project work is to be undertaken under guidance of a teacher allotted to a student by the department.

<b>Division of marks</b>	<b>Marks</b>	
A. Synopsis with working bibliography (Internal Assessment) Viva Voce (Internal Assessment)	40 marks 10 marks	50 marks
B. A full project Report (Minimum 50-80 pages) (Internal & External Assessment) Viva Voce (Internal & External Assessment)	40 marks 10 marks	50 marks

As the Research Project is based on the self study done by the candidate and evaluated for 100 marks altogether, 04 credits will be awarded to a successful candidate in this subject. The project may be evaluated by two examiners one internal and one external, selected from the panel of PG examiners of the University. The Viva voce must be conducted by the teachers selected out of the panel of PG examiners maintained by the University.

The candidates have to submit the project 15 days before the commencement of the fourth semester university examination. The project report shall be type-written and submitted in duplicate. A candidate who fails to submit the project may resubmit the same in the subsequent semester examination for evaluation. The project work activities must be duly supported by documentary evidence to be endorsed by the Head or Guide.

#### **9. Standard of passing:**

A candidate shall be declared to have passed in the paper provided he/she has secured minimum GP of 4.5 in the UNIVERSITY EXAMINATION and GRADE POINT AVERAGE of 4.0 in aggregate of UNIVERSITY GRADE and INTERNAL ASSESSMENT taken together.

#### **10. Classification of successful candidates:**

Candidates who secured not less than 60% of aggregate marks (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION ) in the whole examination shall be declared to have passed the examination in the first class. All other successful candidates shall be declared to have passed in second class. Candidates who obtain 70% of the marks in the aggregate (INTERNAL ASSESSMENT +UNIVERSITY EXAMINATION ) shall be deemed to have passed the examination in first class with distinction.

A student who passess in all the courses will be declared to have passed the M.Com. degree with the following honours.

CGPA in (4.00, 4.99)	- Pass Class
CGPA in (5.00, 5.49)	- Second Class
CGPA in (5.50, 5.99)	- Higher Second Class
CGPA in (6.00, 7.99)	- First Class
CGPA in (8.00, 10,00)	- First Class with Distinction

## 11. Scheme of Credits:

Sixty (60) hours of teaching will lead to three credits (which mean four hours per week teaching in one semester) and long term paper as well as presentation will carry one credit. Each semester shall have 16 credits.

## 12. Structure of Transcript:

At the end of each semester, student will be given a transcript showing the performance and result in each course. The transcript shows, for each course the title of the course, credit values, grade in UNIVERSITY EXAMINATION , grade in INTERNAL ASSESSMENT , grade point index, result as pass or fail. Also, the semester grade point average (SGPA) and cumulative grade point average (CPGA) will be shown. Further the equivalent percentage of marks corresponding to SGPA or CGPA to equivalent percentage is given by:

$$\text{Equivalent percentage marks} = \begin{cases} 10 \times \text{CGPA} & \text{if CGPA /SGPA is in [4.00, 6.00]} \\ 05 \times \text{CGPA} + 30 & \text{if CGPA /SGPA is in [6.00, 9.00]} \\ 25 \times \text{CGPA} - 150 & \text{if CGPA /SGPA is in [9.00, 10.00]} \end{cases}$$

Marks	Grade	Grade Point
100 to 75	O : Outstanding	06
74 to 65	A : Very Good	05
64 to 55	B : Good	04
54 to 50	C : Average	03
49 to 45	D : Satisfactory	02
44 to 40	E : Pass	01
39 to 0	F : Fail	00

(C) GPA	Grade
05.00 – 6.00	O
04.50 – 04.99	A
03.50 – 04.49	B
02.50 – 03.49	C
01.50 – 02.49	D
00.50 – 01.49	E
00.00 – 00.49	F

**13. Distribution of Periods:**

There shall be 60 periods for each subject to cover the entire teaching of 4 credits. This will be distributed as follows:

<b>Particulars</b>	<b>Periods</b>
Teaching session per programme	48
Assignment/ Test	04
Role play/ Group Discussion	04
Case studies and presentation	04
<b>Total</b>	<b>60</b>

**14. Standard of Passing.**

A. Regular students: - A candidate is required to obtain 40% marks in each of course in both Mid Semesters and Semester end. It means passing separately at Mid-Semester and semester Examinations is compulsory.

**15. Award of Class.**

a. The class in respect of M.Com. Examination will be awarded on the basis of aggregate marks obtained by the candidates in all the sixteen papers at the Semester I, II, III, and IV together.

The Award of class shall be as under:-

b. Improvement: - A candidate having passed M.Com. Examination will be allowed to improve the performance. The same is termed as 'Class Improvement Scheme' under which improvement of performance shall be allowed only at the Semester end Examination.

c. A candidate after passing M.Com. Examination will be allowed to appear in the additional Special Subject after keeping necessary terms in the concerned special subject only, for which a passing certificate will be issued.

**16. Medium of Instruction :**

The use of Marathi is allowed for writing answers in the examination except for following courses:

- Management Accounting
- Financial Analysis & Control
- Business Statistics,
- Advanced Accounting and Taxation
- Advanced Cost Accounting and Cost Systems.

**17.** A student (Regular / External) will be admitted to Revised M. Com. Course with effect from June 2013. For the students who have completed the terms for the First Year as per Old Course will be admitted to the Second Year as per Old Course M. Com. The examination as per Old Course will be held simultaneously for three years from April / May 2014.

### 18. Qualification of the Teachers :

The Teachers recognized to teach the subjects as per Old Course shall be deemed to be recognized in the corresponding equivalent subjects under Revised Course.

In case of: A) Business Statistics, B) Industrial Economics, C) Co-operation and Rural Development, D) Advanced Banking and Finance and E) Research Methodology and Project Work- Paper-IV of each Special Subject, the following qualifications be made applicable.

- A. Business Statistics :** M.Com, M.Phil with Statistics or Research Methodology as one of the Papers at M.Com /B.Com /M. Phil examination with 5 years degree teaching experience or M.A./M.Sc. With Statistics having 5 years degree teaching experience.
- B. Industrial Economics:** M.Com., M. Phil with Business Economics/Economics of Industries or Economics as one of the papers at B. Com/ M.Com Examination with 5 years degree teaching experience or M.A. Economics with 5 years degree teaching experience.
- C. Co-operation and Rural Development:** M. Com, M. Phil. With 5 years degree teaching experience or M.A. Economics (with Co-operation Rural Economics)
- D. Advanced Banking and Finance:** M. Com., M. Phil., with Banking as one of the papers at B.Com/M.Com examination 5 years degree teaching experience.
- E. Research Methodology and Project Work:** M.Com. M.A (Eco.) M.Phil./Ph.D. with 5 years degree teaching experience.
- F.** Similarly all the changes in qualification as per U.G.C norms and guidelines shall also be applicable as and when the changes come into force (If applicable)

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**M.Com. Part I Semester I**  
**Compulsory Paper**  
**Subject Name -: Management Accounting**  
**Course Code -: 101.**

**Objective -:** The objective of the course is to enable students to acquire sound Knowledge of concepts, methods and techniques of management accounting and to make the students develop competence with their usage in managerial decision making and control.

Unit No.	Topic	Lectures
1.	<b>BASIC CONCEPTS:</b> Management Accounting- Meaning and Definition, Characteristics, Objectives, scope and functions of Management Accounting Financial Accounting, Cost Accounting and Management Accounting Tools and Techniques of Management Accounting - Advantages and Limitations of Management Accounting - Installation of Management Accounting System-Management Accountant : functions and duties - Essential qualities.	<b>06</b>
2.	<b>FINANCIAL STATEMENT ANALYSIS:</b> Introduction - objectives of analysis of financial statement-tools of financial statement analysis - Multi - step income statement, Horizontal analysis, Common sized analysis, Trend analysis, Analytical Balance Sheet.	<b>04</b>
3.	<b>RATIO ANALYSIS:</b> Ratio Analysis-Meaning and rationale, advantages and limitations. Types of Ratios -: Liquidity Ratios, Solvency Ratios, Profitability Ratios, Efficiency Ratios, Integrated Ratios.	<b>08</b>
4.	<b>FUND FLOW AND CASH FLOW STATEMENT:</b> <b>A. Meaning of Fund flow statement</b> -Uses of fund flow statement, Funds Flow Statement and Income Statement. Preparation of Funds Flow Statement. <b>B. Meaning of Cash flow statement</b> - Preparation of Cash Flow Statement. Difference between Cash Flow Analysis and Funds Flow Analysis. Utility of Cash flow Analysis. Limitations of Cash Flow Analysis.	<b>12</b>
5.	<b>WORKING CAPITAL MANAGEMENT:</b> Concept and definition of working capital - Determination of Working capital - Assessment of Working Capital needs - Study of components of working capital, such as cash management, accounts receivable management and inventory management.	<b>12</b>
6.	<b>RESPONSIBILITY ACCOUNTING:</b> Meaning, objectives and structure of Responsibility Accounting as a divisional performance measurement. Types of Responsibility Centers: Cost/Expense Centers, Profit Centers, Investment Centers.	<b>06</b>
<b>Total</b>		

### **Recommended Books**

1. R. N. Anthony , G. A. Walsh: Management Accounting
2. M. Y. Khan. K. P. Jain: Management Accounting
3. I. M. Pandey: Management Accounting (Vikas)
4. J. Betty: Management Accounting
5. Sr. K. Paul: Management Accounting
6. Dr. Jawaharlal: Management Accounting
7. Dr. Kishor Jagtap: Management Accounting (Success Publication)
8. S. N. Maheshwari: Principles of Management Accounting
9. Ravi M. Kishore: Financial Management (Taxman, New Delhi)
10. Richard M. Lynch and Robert Williamson: Accounting for Management Planning & Control.
11. Ravi Kishor: Advanced Management Accounting (Taxman)

**M.Com. Part I Semester I**  
**Compulsory Paper**  
**Subject Name -: Strategic Management**  
**Course Code -: 102.**

Unit No.	Topic	Peroids
1.	<b>Nature and Scope of Strategic Management:</b> Characteristics, Dimensions – Approaches to Strategic Decision Making, Strategic Management Process – Components of Strategic Management Model, - Policy & Strategic Management, Strategic role of Board of Directors and Top Management, Strategic Implications of Social and Ethical Issues.	<b>06</b>
2.	<b>Strategy Formulation and Strategic Analysis:</b> Company’s Goals, Mission and Social Responsibility, Vision – Objectives Analysis of Board Environment – External Environment Factors Economic, Social, Political, Ecological, International, Industrial – Competitive Forces and Strategy, Industry Analysis (Michael Porter’s Model) Analysis of Strategic advantage, - Resource Audit, Value Chain Analysis, Core Competencies, SWOT Analysis, Analysis of Stakeholders Expectations.	<b>06</b>
3.	<b>Strategic Planning:</b> Conceptual Understanding of Strategic Plan, - Meaning, Stages (Steps), Alternatives, Advantages and Disadvantages of Strategic Planning, How to make it effective?.	<b>10</b>
4.	<b>Strategic Choices/Options:</b> Generating Strategic Alternatives, Strategic Options at Corporate (Company) Level – Stability, Growth and Defensive Strategies, External Growth Strategies – Mergers, Acquisition, Joint Ventures and Strategic Alliance, Evaluation of Strategic Alternatives, - Product Port Folio Models, Selection of Suitable Corporate Strategy.	<b>06</b>
5.	<b>Strategy Implementation:</b> Implementation Issues, Planning and Allocating Resources, – Financing Planning, Manpower Planning, Organizational Structures, - Factors affecting choice of structure, Degree of Flexibility and Autonomy.	<b>06</b>
6.	<b>Functional Strategy:</b> <ol style="list-style-type: none"> <li>i. Marketing Strategy – Nature, Significance, Formulating Marketing Strategy</li> <li>ii. Production Strategy – Need, Formulation of Production of Strategy for an organization.</li> <li>iii. Research and Development (R&amp;D) Strategy –Need, Formulating R and D Strategy</li> <li>iv. Human Resource (HR) Strategy – Acquisition of Human Resources, motivation and maintenance of HR</li> <li>v. Financial Strategy – Need, Financial Objectives, Making Strategic Financial Decisions</li> <li>vi. Logistics Strategy</li> </ol>	<b>08</b>
7.	<b>Strategic Review:</b> Evaluating the Strategic Performance – Criteria and Problems –Concepts of Corporate Restructuring, Business Process Reengineering, Benchmarking, TQM, Six Sigma	<b>08</b>
<b>Total</b>		



### Recommended Books

1. From Strategic Planning to Management -By Ansoff M.Igor, R. P. Declorch, R. I. Hayes (Willey 1976)
2. Cases in Strategic Management – By Buddhiraja S. B. and M. B. Athreeya (TMH Publishing Company, New Delhi, 1996)
3. Business Policy:Strategic Planning and Management, By Ghosh P. K.8<sup>th</sup> Edition Sultan Chand and Sons, New Delhi
4. Strategic Management -Formulation, Implementation and Control By John A PearceII, Richard B. Robinson Jr. 9th Edition (The Mc-Graw Hill Companies)
5. Management Policy and Strategic Management (Concepts, Skills and Practices) By R. M. Srivastava, Himalya Publishing House
6. Contemporary Strategy Analysis By Grant Robert M. 2<sup>nd</sup> Edition Blackwell Publisher (USA)
7. Strategic Management of Organizations and Stakeholders –Concepts and Cases By Harrison and St. John, South western College Publishing, Ohio, USA-1998
8. Strategic Management By Hunger, J. David and Thomas Wheeler, 6th Edition, Addison Wesley Longman Inc., USA
9. Strategic Management Concepts and Cases By J. Thomson, Athur and M. J. Strickland – III, McGraw Hill 2001
10. Strategic Management -By Miller A , McGraw Hill 1998
11. Strategic Management -By Hitt MA et.al, South Western, 2001
12. Essence of Strategic Management –By Bowman, Cliff, Prentice Hall N. J.

**M.Com. Part I Semester I**  
**Advanced Accounting and Taxation Special Paper I.**  
**Subject Title -: Advanced Accounting.**  
**Course Code -: 103**

**Objective -:**

- i. To lay a theoretical foundation of Accounting and Accounting Standards.
- ii. To gain ability to solve problems relating to Company Accounts, Valuations and special types of situations.

UNIT	TOPIC	No. of Lecturers in hours
<b>I</b>	<b>BASIC CONCEPTS:</b> Conceptual framework of Accounting - Accounting environment - Concept of accounting theory - Role of accounting theory - Classification of accounting theory - Approaches to accounting theory - Accounting Standards - Generally Accepted Accounting Principles - Selection of Accounting Principles - Professional Development of Accounting in India. Introduction to IFRS & IND-AS.	<b>08</b>
<b>II</b>	<b>COSOLID IDAT ED FINANCIAL STATEMENTS:</b> Consolidated Accounts of Holding and subsidiary Companies Consolidation - Inter Company transactions - Issue of Bonus Shares - Revaluation of Fixed Assets - Debentures and Preference Shares of subsidiary Company- Dividend - (Holding company with two subsidiaries only to be studied). AS.21.	<b>10</b>
<b>III</b>	<b>LIQUIDATION OF COMPANY:</b> Preparation of Statement of affairs including deficiency /surplus account.	<b>04</b>
<b>IV</b>	<b>VALUATION OF SHARES AND GOODWILL:</b> A. <b>Valuation of Shares</b> - Need for valuation - Methods of valuation of shares- Net Asserts method, Dividend yield method, Earning yield method, Return on Capital method, Price/Earning method and Fair value method & DCF Method (Discounted Cash Flow Method). B. <b>Valuation of Goodwill</b> - Need for valuation - Methods of valuing Goodwill - Number of Years purchase of average profits method, Capitalization method - Annuity method - Super profits method.	<b>10</b>
<b>V</b>	<b>LEASE ACCOUNTING:</b> Concept of Leasing: Important Steps in Leasing. Advantages and disadvantages of Leasing. Types of Leasing - Finance Lease - Operating Lease. Accounting treatment of Finance Lease and of Operating Lease. Sale and Leaseback.	<b>08</b>
<b>VI</b>	<b>BRANCH ACCOUNTS:</b> Branch Accounts: Independent Branches- Accounting at Head Office- Accounting at Branch- Some Special Transactions. Foreign Branches- Rules of converting Trial Balance of the foreign Branch in Head Office Currency	<b>08</b>
<b>TOTAL-</b>		<b>48</b>

**Notes :**

1. Theory questions will carry 20% marks.
2. Practical problems will carry 80% marks.
3. Accounting standards relevant to the topics to be studied.

**List of Books Recommended for Study**

1. Shukla and Grewal: Advanced Accounts. (S. Chand & Co Ltd. New Delhi)
2. Jain and Narang: Advanced Accounts.(Kalyani Publishers, Ludhiana)
3. Sr. K. Paul: Accountancy, Volume-I and II.(New Central Book Agency, Kolkata)
4. R. K. Lele and Jawaharlal: Accounting Theory (Himalaya Publishers)
5. Dr. L. S. Porwal: Accounting Theory (Tata McGraw Hill).
6. Robert Anthony, D.F.Hawkins & K.A. Merchant: Accounting Text & Cases (Tata McGraw Hill).
7. Dr.S.N. Maheshwari: Corporate Accounting (Viakas Publishing House Pvt. Ltd. New Delhi)
8. Dr.Ashok Sehgal & Dr.Deepak Sehgal: Advanced Accounting (Taxmann, New Delhi).

**List of Learning Activities and Allocation of Periods**

<b>Sr. No.</b>	<b>Activities</b>	<b>Learning Hours</b>
1	Quizzes	4
2	Assignments	4
3	Class room tests	4
<b>Total</b>		<b>12 hours</b>

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**M.Com. Part I Semester I**  
**Advanced Accounting and Taxation Special Paper II.**  
**Subject Title :- Income Tax.**  
**Course Code :- 104**

**Objective :-**

- i. To gain knowledge of the provisions of Income - tax including Rules pertaining there to, relating to the following topics.
- ii. To develop ability to calculate taxable Income of 'Individual', 'Hindu Undivided Family' and 'Firm' assesses.

**INCOME TAX ACT, 1961**

UNIT	TOPIC	No. of Lecturers in hours
<b>I</b>	<b>CONCEPTS AND DEFINITION</b> History of Income Tax in India - Introduction to DTC - Fundamental Concepts and definitions under Income Tax Act, 1961 - Rates of taxes - Basis of charge - Residential status and scope of total income -Income Exempt from tax - Capital & Revenue	<b>06</b>
<b>II</b>	<b>HEADS OF INCOME: SALARIES &amp; HOUSE PROPERTY:</b> <b>A. Salaries:</b> Chargeability -Allowances and Taxability - Perquisites - Valuation of perquisites - Provident Funds - Deduction from salaries (Theory & Advanced problems). <b>B. Income from House Property:</b> Annual Value-Self occupied property and let out property -deemed to be let out property - Permissible deductions. (Theory & Advanced problems).	<b>08</b>
<b>III</b>	<b>HEADS OF INCOME : BUSINESS &amp; PROFESSION:</b> <b>Profits &amp; Gains of Business or Profession:</b> Meaning of Business Profession and Vocation-deductions expressly allowed Depreciation -Specific disallowances - Method of accounting - Maintenance of Books of Account - Audit of Accounts [Theory & Advanced Problems]	<b>10</b>
<b>IV</b>	<b>HEADS OF INCOME : CAPITAL GAINS &amp; OTHER SOURCES:</b> <b>A. Capital Gains:</b> Meaning, Types and Exemptions <b>B. Income from Other Sources:</b> Chargeability - Deductions - Amounts not deductible.(Theory & Advanced Problems)	<b>08</b>
<b>V</b>	<b>COMPUTATION OF TAXABLE INCOME:</b> Clubbing of income - Set off and carry forward of losses - Deductions from Gross Total Income - Computation of Taxable Income of an Individuals and Hindu Undivided Families. (Theory & Advanced Problems)	<b>10</b>
<b>VI</b>	<b>ASSESSMENT OF FIRMS AND THEIR PARTNERS :</b> (Theory & Advanced Problems)	<b>06</b>
	TOTAL-	<b>48</b>

**Notes:**

1. Amendments made prior to commencement of Academic Year in the relevant act should be considered & studied.
2. The breakup of questions in the Examination will be as under:
  - a. Theory questions will carry 30% marks.
  - b. Problems will carry 70% marks.

<b>List of Books Recommended for Study</b>	
1. Dr. Vinod Singhania: Direct Taxes, Law and Practice, Taxman Publication, New Delhi	
2. Dr. Bhagawati Prasad: Direct Taxes	
3. Girish Ahuja and Ravi Gupta: Direct Taxes, Bharat Law House, New Delhi.	
4. T. N. Manoharan: Hand Book of Income Tax Laws	
5. B.B.Lal & N.Vashisht: Direct Taxes (Pearson)	

**List of Learning Activities and Allocation of Periods**

<b>Sr. No.</b>	<b>Activities</b>	<b>Learning Hours</b>
1	Quizzes	4
2	Assignments	4
3	Class room tests	4
<b>Total</b>		<b>12 hours</b>

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**M.Com. Part I Semester I**  
**Commercial Laws and Practices Special Paper I.**  
**Subject Title -: Information Systems and E-Commerce Practices**  
**Course Code -: 105**

**Objective -:**

1. To get acquainted with the concepts and application of Information Systems used in Modern Businesses.
2. To impart knowledge about E-Commerce and familiarize students with E-commerce Modern Applications.

Unit No.	Name of the Unit / Topic	Periods
1.	<p><b>Introduction to Information Systems</b>  System Concepts, Definition of a system, Basic Components of a system, Elements and types of a systems, General Model of a system, The model of a Business system.  Information systems supporting major business functions.  Four major types of systems – Transaction Processing Systems, Management Information systems, Decision Support Systems and Executive Support systems</p>	10
2.	<p><b>Introduction to E-Commerce</b>  Meaning and Definition of E-commerce, Benefits of E-Commerce to Businesses, Consumers and Society, Limitations of E-Commerce, Drivers of E-Commerce.  Categories of e-Commerce- B2B, B2C, C2C, B2G and G2B.  B2B applications, B2C applications and C2C applications.</p>	10
3.	<p>Inter organizational Information Systems and Internet, Intranet and Extranet Introduction, Role, benefits and structure of Inter organizational systems.  Introduction to Electronic Data Interchange (EDI), Definition, benefits of EDI. EDI transactions and EDI Applications.  Electronic Fund transfer.  Introduction to Internet, Definition of Internet, Components of Internet, Services offered by Internet.  Introduction to Intranet, Definition, advantages and disadvantages of intranet.  Introduction to extranet and definition and applications of Extranet.</p>	18
4.	<p><b>E-Commerce Supporting functions</b>  Purchase and sale Procedures, Supply Chain management, Value Chains in E-Commerce.  Electronic Payment Systems, Authentication of payment, Mode of Payments  E-Commerce Security. Security Requirements. Security Mechanisms-Encryption, Digital Signature, E-Certificate, Secure electronic transaction protocol.</p>	10
	<b>Total</b>	<b>48</b>

**[Note: Recent amendments in the Acts and relevant Landmark cases decided by courts are expected to be studied]**

### **Books Recommended**

1. E-commerce – Devid Whiteley- McGraw Hill
2. E-commerce – P.Joseph- PHI
3. E-commerce – The cutting edge of business – K.Bajaj and Nog TMH
4. System Analysis, Design and Introduction to Software Engineering – S.Parthasarathy, B.W.Khalkar
5. Text book on Intellectual property rights – N.K. Acharya, Asia Law House
6. Guide to Cyber Laws – B y Rohnay D. Ryder[Wadhwa, Nagpur]
7. Cyber Laws – Justice Yatindra Singh, Universal Law Publishing Co.

**M.Com. Part I Semester I**  
**Commercial Laws and Practices Special Paper II.**  
**Subject Title :- Intellectual Property Laws: Patents, Trade Marks & Biodiversity**  
**Course Code :- 106**

**Objective :-**

1. To make the students familiar with the concept of patents, trademarks, biodiversity;
2. To get the students acquainted with the regulatory regime concerning patents, trademarks, biodiversity ;
3. To make the students realize the commercial significance of patents, trademarks, biodiversity as Intellectual Property and understand the scheme of its protection.

Unit No.	Title & Contents of the Topic	No. of Periods
1	<b>Intellectual Property</b> – Origin, concept, Commercial/cultural dimensions, types/forms (Intellectual Property Rights, IPR) International regulatory regime for IPR (references to International legal Instruments viz. WTO,WIPO, GATT, TRIPS Paris Convention, PCT, Budapest Treaty...)	6
2	<b>Patents</b> —Definition, concept , types of patents, patentable & non- patentable inventions, Applications for patents, complete procedure for obtaining patents. (Chapters 1 to 8 of Patents Act,1970 as amended), Patents of Additions, surrender & revocation of patents.	8
	Working of Patents , Compulsory licenses and revocation, use of patents for government purposes and acquisition of patents, Infringement of patents, ( acts of Infringement & defenses) reliefs for Infringement ( suits), appeals, Offenses & penalties [Chapters 16 to 20 of Patents Act,1970 as amended]	8
	Patents Offices, establishment, Controller of Patents ( functions and powers) Patent Agents, , International arrangement [Chapters 14 & 21, 22 of the Act ], Issues and concerns in patent regime	4
3	<b>Trade Marks--</b> Definition, concept , types of Trade Marks, Registration of Trade Marks [ Procedure, duration , effect ] Appellate Board [ Establishment, composition, qualifications , procedure and powers, disposal of appeals]	8
	Assignments and Transmission of Trade Marks, Provisions relating to collective & certification Trade Marks, textile goods, Infringement of Trade Marks and remedies, Offenses ( acts of violations, defenses) & Penalties	6
4	<b>Biodiversity Act, 2002</b> —Important relevant definitions of the terms like Biodiversity, Biological Resources, Benefit Claims, Commercial Utilization, Fair & Equitable Benefit Sharing, Sustainable Use—Regulation of Access to Biodiversity [ Ss 3 to 7], Functions & Powers of National Biodiversity Authority & State Biodiversity Board [ Ss 18 to 25]	8

**[Note: Recent amendments in the Acts and relevant Landmark cases decided by courts are expected to be studied]**



**Books Recommended**

1. Intellectual Property Law – P. Narayan, Eastern Law House.
2. Text book on Intellectual Property Rights. – N.K. Acharya , Asia Law House, Hyderabad.
3. Law Relating to Intellectual Property – Dr. B.L. Waderha, Universal Law Publishing Co.
4. Intellectual Property Rights, (2011), - Dr. Sreenivasulu N. S., Regal Publications, New Delhi – 7.
5. Intellectual Property Law in India (2006) – Justice P. S. Narayana, Goigia Law Agency, Hyderabad.
6. Universal’s “Intellectual Property Laws” (Bare Acts) Universal Law Publishing Co. Pvt. Ltd.
7. Law of Intellectual Property - Dr. S. R. Mynei – Asia Law House, Hyderabad (2011).
8. Intellectual Property Rights – Heritage, Science & Society Under International Treaties, A. Subbian Deep & Deep Publications Pvt. Ltd., New Delhi (2007)
9. Intellectual Property Laws—Bextly & Sherman, Asia Law House

**M.Com. Part I Semester I**  
**Advanced Cost Accounting and Cost System Special Paper I.**  
**Subject Title -: Advanced Cost Accounting.**  
**Course Code -: 107**

**Objectives:**

1. To acquaint the students with the significance of Cost Accounting in Global Competitive environment.
2. To enable students to learn application of different methods of costing in Manufacturing and Service Industry.

Unit No	Name of the Topic	Periods
<b>1</b>	<b>Nature and Scope of Cost Accounting:</b> <ol style="list-style-type: none"> <li>a. Introduction, Meaning, Definition and Objectives of Cost Accounting, Cost Centre and Cost unit.</li> <li>b. Elements of Cost: Material, Labour and Overheads. Material: Concept, Procurement of Material, concept of Landed cost of material and major currencies (Dollar, Euro, and Pound).</li> <li>c. Storage and Inventory Control Techniques Perpetual Inventory system, ABC Analysis, Inventory Turnover ratios, Just In Time, Economic Ordering Quantity.</li> </ol>	12
<b>2</b>	<b>Labour:</b> <ol style="list-style-type: none"> <li>a. Meaning, Definition and significance of Labour.</li> <li>b. Classification of Labour, Principles and Methods of Remuneration, Performance linked Incentives.</li> <li>c. Accounting of Labour cost, Job Evaluation and Merit Rating.</li> </ol>	12
<b>3</b>	<b>Overheads:</b> <ol style="list-style-type: none"> <li>a. Meaning, Classification, Allocation, Apportionment and Absorption of Overheads.</li> <li>b. Accounting of Overheads:</li> </ol>	12
<b>4</b>	<b>Methods of Costing:</b> <ol style="list-style-type: none"> <li>a. Job costing, Batch Costing and Contract Costing.</li> <li>b. Process costing</li> <li>c. Operating costing (Hospitals, Educational Institutes, Hotels and logistics and Warehouse.)</li> </ol>	12

**Note:**

The breakup of marks in the Examination will be as follows:

- a. 50 % of marks for Theory & 50 % of marks for Practical.
- b. Area of practical problems:
  - Inventory turnover ratio, EOQ.
  - Methods of Remuneration, Time rate, Piece rate, group bonus scheme, Performance linked incentives.
  - Primary and Secondary Distribution of Overheads (Repeated distribution method only).
  - Contract Costing, Process costing and Operating Costing.
- c. Study of Cost Accounting standards: CAS 3 (Revised), CAS 6 and CAS 7.

**References:**

1. Ravi Kishor: Advanced cost Accounting and cost systems, Taxman Allied services Pvt Ltd, New Delhi.
2. N.K. Prasad: Principles and Practice of Cost Accounting, Syndicate Pvt Ltd, Calcutta.
3. Prof. Subhas: Practice in Advanced costing and Management, Nirali Prakashan, Pune.
4. Ravi Kishor: Students guide to Cost Accounting, Taxman's allied services, New Delhi.
5. M. N Arora: Cost Accounting Principles and Practices, Vikas Publishing House, New Delhi.
6. S. N Maheshwari, Cost Accounting Theory and Problems, Mittal shree Mahvir Book Dept, New Delhi.
7. Website: [www.myicwai.com](http://www.myicwai.com).
8. Advanced Cost Accounting and Cost Systems -: Ravi Kishor, P.V. Ratlam, M.L.Basu

**List of Learning Activities and Allocation of Periods**

<b>Sr. No.</b>	<b>Activities</b>	<b>Learning Hours</b>
1	Industrial Visits	4
2	Assignments	4
3	Class room tests	4
<b>Total</b>		<b>12 hours</b>

**M.Com. Part I Semester I**  
**Advanced Cost Accounting and Cost System Special Paper II.**  
**Subject Title -: Costing Techniques and Responsibility Accounting.**  
**Course Code -: 108**

**Objectives:**

- 1) To equip the students for designing and implementing cost control, cost reduction programme and different cost system.
- 2) Relevant Cost Accounting Standard are to be studied
- 3) Level of knowledge –Advanced Techniques of Costing

UNIT NO.	NAME OF THE TOPIC	PERIODS
1	<b>Budgeting &amp; Budgetary Control</b> Types of Budget, All Functional Budget & Master Budget, Key and limiting factor, fixed and flexible, cash budget, Zero base Budget [ZBB]	12
2	<b>Standard Costing –</b> Concept of Standard costs, Setting up of Standards: Variance analysis-Material Labour, Overhead, Sales and profit.	12
3	<b>Uniform Costing &amp; Inter Firm Comparison</b> Reasons for differences in Cost and Costing Practices. The application of Uniform Costing, Advantages and limitations of Uniform Costing. Inter firm comparison Meaning, Advantages and Disadvantages	12
4	<b>Responsibility Accounting and Reporting</b> Definition, Meaning, Principles, controllable and Non-controllable costs. Centers of control, cost Centers, Revenue Center, Responsibility Center, Profit Center and Performance Measurement of Business Center. Reporting to different levels of Management.	12
	<b>Total</b>	<b>48</b>

**Note: - 50% Marks for Theory and 50% Marks for Practical Problems.**

**Areas of Practical Problems (Advanced)**

- 1) Budgetary Control
- 2) Standard Costing
- 3) Performance Measurement of Business Center
- 4) Simple Problem of Responsibility Accounting

**References:**

1. Ravi Kishor: Advanced cost Accounting and cost systems, Taxman Allied services Pvt Ltd, New Delhi.
2. N.K. Prasad: Principles and Practice of Cost Accounting, Syndicate Pvt Ltd, Calcutta.
3. Prof. Subhas: Practice in Advanced costing and Management, Nirali Prakashan, Pune.
4. Ravi Kishor: Students guide to Cost Accounting, Taxman's allied services, New Delhi.
5. M. N Arora: Cost Accounting Principles and Practices, Vikas Publishing House, New Delhi.
6. S. N Maheshwari, Cost Accounting Theory and Problems, Mittal shree Mahvir Book Dept, New Delhi.
7. Website: [www.myicwai.com](http://www.myicwai.com).
8. Advanced Cost Accounting and Cost Systems -: Ravi Kishor, P.V. Ratlam, M.L.Basu

**List of Learning Activities and Allocation of Periods**

Sr. No.	Activities	Learning Hours
1	Industrial Visits	04
2	Assignments	04
3	Class room tests	04
<b>Total</b>		<b>12 hours</b>

**M.Com. Part I Semester I**  
**Co-operation and Rural Development Special Paper I.**  
**Subject Title -: Co-operative Movement In India**  
**Course Code -: 109**

**Objectives:**

1. To acquaint the students with the Co-operative Movement.
2. To develop the capability of students for knowing different types of Co-operatives.
3. To aware the role of State and Central Govt. in development of co-operative sector.
4. To give basic knowledge about formation of Co-operative society and its administration.

Unit No.	Name of the Topic	Periods
1	<b>Co-operative Movement in India:</b> Evolution of Co-operative Movement in India- Pre and Post Independence Period – Role of Co-operatives in Globalised Economy.	12
2	<b>Co-operative Legislation in India:</b> Study of Maharashtra State Co-operative Societies Act 1960 and rules 1961 with updated amendments regarding :- a. Registration b. Members and their Rights. c. Properties and Funds d. Management. e. Audit Enquiry Inspection & Supervision. f. Settlement of Disputes. g. Liquidation h. Appeal Revision & Reviews.	12
3	<b>Organizational setup of Co-operatives Departments</b> (a) State Level (b) Divisional Level (c) District Level (d) Rights, Duties and Responsibilities of Registrar of Co-operative Societies	12
4	<b>Reports of Various Committees and Institutional Support to Co-operatives:</b> (a) All India Rural Credit Survey Committee (AIRCS), Rural Credit Review , Report Committee on Inauguration of Co-operative Credit CRAFTICAD , Report of Vaidyanthan Committee, Report of Narsimham Committee (b)NABARD & NCDC support to Co-operatives.	12
<b>TOTAL</b>		<b>48</b>

**List of Books Recommended for Study**

1. G.S. Kamat: New Dimensions of Co-operative Management
2. G.S. Kamat: Cases in Co-operative Management
3. K.K.Taimani: Co-operative Organisation and Management
4. I L O: Co-operative Management and Administration
5. B.C. Mehta: Consumer Co-operation in India  
Prof L.P. Wakale and Dr. G.H.Barhate: Sahakari Vikas- Sheth Publishing Mumbai

**M.Com. Part I Semester I**  
**Co-operation and Rural Development Special Paper II.**  
**Subject Title :- Organization of Co-operative Business**  
**Course Code :- 110**

**Objectives:**

1. To acquaint the students with the Co-operative movement.
2. To develop the capability of students for knowing different types of Co-operatives.
3. To aware the role of state and central Govt. in development of co-operative sector.

Unit No.	Name of the Topic	Periods
1	<b>Introduction:</b> Principles of Co-operation and Management and their Integration in Cooperatives, Professionalization of Cooperative Management.	12
2	<b>Organization of Co-operatives:</b> Organization Structure of Co-operatives-Organization Chart for Large Scale Co-operative business, Banking Units – Communication and Leadership in Cooperative Organization – Federal Structure of Co-operative Organization – Control over Co-operative Audit and Taxation.	12
3	<b>Co-operatives Education and Training :</b> Importance, Need, Role of Institutions in the Co-operative Training Vaikuntbhai Mehata National Co-operative Institute , Importance of Job Oriented Co-operative Training – National Co-operative Union of India, National Education Centre for Co-operative – National Council for Co-operative Training – State Co-operative Union – District Co-operative Union	12
4	<b>Special Study of Co-operatives in Maharashtra:</b> a) Co-operative Sugar Factory- Growth role of Co-op. Sugar Factory in Rural Development- b) Dairy Co-operatives progress and problems. c) Housing Co-operatives. d) Agricultural and Non-agricultural Credit Co-op. Societies.	12
<b>TOTAL</b>		<b>48</b>

**List of Books Recommended for Study**

1. G.S. Kamat: New Dimensions of Co-operative Management
2. G.S. Kamat: Cases in Co-operative Management
3. K.K.Taimani: Co-operative Organisation and Management
4. I L O: Co-operative Management and Administration
5. B.C. Mehta: Consumer Co-operation in India
6. Prof L.P. Wakale and Dr. G.H.Barhate: Sahakari Vikas- Sheth Publishing Mumbai

**M.Com. Part I Semester I**  
**Business Practices and Environment Special Paper I.**  
**Subject Title :- Organized Trades and Markets**  
**Course Code :- 111**

Unit No.	Name of the Topic	Periods
1	Organized Trade & Markets - Introduction , Meaning and importance - Features of Organized Commodity Markets and Regulated Markets Concept & Objectives of Business - Nature and scope of Business in the modern context – Study of various policies with illustrations - Product buying, selling price and Credit policies.	12
2	Service Sector: - Meaning, Characteristics, types of services, Role, importance and development of Service Sector in India - Business Practices with reference to E-Commerce.	12
3	State in Trade:- FDI – Meaning, importance & objectives, role of FDI in retail trade with illustrations. Arguments for and against FDI. Concept of State Trading - Arguments for and against State Trading - Role of State Trading Corporation (STC) - State and privatization of trading Activities. Mall administration & organization – Super Markets.	12
4	Co-operative Marketing - objectives — Need - features - structure - Functions – Advantages and Role of co-operative marketing , with illustrations in rural areas - Direct Marketing for farmers, Self Help Group, rural development policy, Central Mall, Reliance Mart, Innovative Marketing practices.	12

**Recommended Books:-**

1. Principles of Business, Acharya, Govekar, A.R.Sheth & Co. Organization
2. Principles and Practice of Mamoria Joshi Kitab Mahal Marketing
3. Regulated Markets W.R.Natu
4. Marketing CO-operative, G.S.Kamat, Way Maharashtra State Co-op Union
5. Future Trading and Control Ram Desai
6. Bombay Money Market, H. parekh
7. Commodity Marketing and, P.L.Gadgil, Shubhada Saraswat Distributed Trade
8. Business Environment Text & Cases by Francis Cherybilam
9. Financial Derivatives & Risk Management by O. P. Agarwal.

**M.Com. Part I Semester I**  
**Business Practices and Environment Special Paper I.**  
**Subject Title -: Business Environment and Policy.**  
**Course Code -: 112**

Unit No.	Name of the Topic	Periods
1	Business Environment - Meaning, Nature , Importance and scope of Environment – Types of Environment, various aspects of Environment - Business Environment with reference to India.	12
2	Problems of growth of Business Economy – Unemployment, Poverty, regional imbalance. Social injustice, Inflation, Parallel economy, Lack of technical knowledge and information. Opportunities in Environment.	12
3	Pollution – Meaning, Problems of pollution - Types of pollution- Water, Air and Noise- Regulatory mechanism & laws, sources and effects, various policies of Government, Go Green Movement	12
4	Globalization & its impact, Meaning, objectives, importance & scope of Globalization Effect & challenges of Globalization Review of two decades of Globalization	12

**Recommended Books**

Global Economy and Business Environment Francis Cheranilan Himalaya publishing house Text & Cases ( Edn 2001)  
 Business Environment Chhlaaghan, Elliaon Edward Arnold  
 Economic Environment of Business SYBA k Misha, Puri Himalaya publishing house  
 Indian Business through ages FICCI Oxford University Press  
 Business Environment Text & Cases by Francis Cherubilam Environmental Pollution & Health by V. K. Ahluwalia.



**M.Com. Part I Semester I**  
**Business Administration Special Paper I.**  
**Subject Title -: Production and Operations Management**  
**Course Code -: 113**

	<b>No. of Lectures</b>	<b>Credit 04</b>
<p><b>1. Introduction to Production &amp; Operations Management</b>  Meaning &amp; Functions, Types of Production Systems Mass Production/Flow line, Continuous, Intermittent, Batch production, Job Lots etc, Service Systems, - Recent trends in production and service system Plant layout – Objectives, basic principles, types, Safety considerations and environmental aspects.</p>	12	01
<p><b>2. Product Design and Development</b>  Product Design – Meaning – Responsibility, factors, determining the design characteristics of good design, Production Department Stages of Product Design, Factor responsible for product development, tools of product development, product planning, standardization, simplification and diversification. Techniques of Product Development.</p>	12	01
<p><b>3. Production Planning &amp; Control</b>  Production Planning and Control – Meaning, objectives, important procedures, Production Planning, Routing, Scheduling, ERP integrated system Dispatch, follow up, production control -meaning, objectives – factors – factors affecting production control, problems and cases</p>	12	01
<p><b>4. Quality Management and Productivity</b>  Meaning, measurement, techniques, factors affecting productivity measures to boost productivity – ISO 9000 to ISO -4000 – role of NPC Effects of liberalization &amp; globalization on operations management Problems of rationalization, automation, and computerization. Preventive Maintenance, Inspection and Quality Control, Kizen five s'-GMP (Good Manufacturing Practices) Quality Circles, TQM</p>	12	01
	<hr/>	<hr/>
	<b>48</b>	<b>04</b>
<p><b>List of Books Recommended: -</b></p> <ol style="list-style-type: none"> <li>1. Production and operation Management – By B. S. Goel (Pragati Prakashan)</li> <li>2. Production and Operations Management – By S. N. Chary (Tata Mcgraw Hill)</li> <li>3. Modern Production and Operation Management –By Elword Buffa</li> <li>4. Production Planning and Inventory Control –By Magee Budman (Tata Mc Graw Hill)</li> <li>5. ISO 9000 – A manual for TQM – By Suresh D. Saurabh (S. Chand Publication)</li> <li>6. Essentials of Business Administration By K. A. Shantappa</li> <li>7. A Key of Production Management – By Kalyani Publication, Lundhiyana</li> </ol>		

**M.Com. Part I Semester I**  
**Business Administration Special Paper II.**  
**Subject Title :- Financial management**  
**Course Code :- 114**

	No of Lectures	Credit 04
<b>1. Introduction</b> Meaning & definition of Financial Management, Role of Finance Manager, Goals of Financial Management, Financial systems (in India) – Financial Assets, Financial Markets, Financial Intermediaries, Regulatory infrastructure (RBI, SEBI), Trends in Indian Financial System	12	01
<b>2. Investment Decisions</b> Capital Expenditure Decisions, Capital budgeting-purpose, process, types of capital investment decisions, capital budgeting techniques, capital rationing, Investment Decision Methods – Average Rate of Return (ARR), Pay Back, Internal Rate of Return (IRR), Present Value Approach	12	01
<b>3. Financial Statements and Financial Analysis</b> Financial Statements – Concept, their anatomy, Balance Sheet and its utility, Income Statement and its utility, limitation of financial statements. Financial Analysis –Types of analysis, utility, Techniques of Financial Analysis _ Ratio Analysis & Fund Flow Analysis	12	01
<b>4. Management of Working Capital</b> Nature of working capital, understanding working capital management- its significance –circular flow concept, Factors affecting working capital requirements Financing of working capital. Inventory management & Receivable management.	12	01
	48	04
<b>List of Books recommended for Studies:-</b>		
1. Dr. Prassanna Chandra – Financial Management Theory & Practice published by McGraw Hill 6th Edition 2. Financial Management and Policy – By Dr. R. M. Shrivastava, Himalaya Publishing House 3. Indian Financial System – Bharati Pathak Dorling Kindersley (India) Pvt. Ltd. 4. Business Finance – S. C. Kuchal 5. Financial Management – I. M Pandey 6. Financial Management – Study material by Alpha group ICFAI Hyderabad 7. Financial Management – Dr. P. V. Kulkarni 8. Fundamentals of Financial Management By Horne, Wachowicz Jr. Bhaduri Published by Pearson Education 12th Edition		

**M.Com. Part I Semester I**  
**Advanced Banking & Finance Special Paper I.**  
**Subject Title -: Legal Framework of Banking.**  
**Course Code -: 115**

**Objectives:**

1. To acquaint the students with legal framework in which the Indian banking is working today.
2. To make the students aware about the latest developments in the field of banking law.
3. To enable the students to understand modern banking practices.
4. To enable the students to establish a link between the legal provisions and the practical aspects of banking.

**1. Banking Regulation Act, 1949**

**12**

Provisions relating to: Definition (Sec -5) Business of banking companies (Sec-6) Restrictions on business of banking companies (Sec -8, 19 and 20) Powers of the RBI (Sec -21, 35 and 36 to 36 AD) Winding up of a banking company (Part III and III-A of the Act) Applicability of the Act to Co-operative banks (Sec- 56), Amendments of BRA 1949 up to Dec. 2012

**2. The Negotiable Instrument Act, 1881**

**12**

Provisions relating to: Definition of negotiable Instrument (Sec- 13), Promissory note (Sec -4), Bill of exchange (Sec -5), and Cheque (Sec -6), Comparative Study of Negotiable Instruments Parties to negotiable instrument (Section -7), Holder (Sec -8), Holder in due course (Sec -9), Payment in due course (Sec -10), Negotiation (Sec -14), Endorsement (Sec -15), Dishonor of Negotiable Instruments (Sec -91-92), Noting and Protest (Sec -99-104-A), Penalties in case of dishonor of certain cheques for insufficiency of funds in the account (sections 138 to 147), As Amendments of Negotiable Instrument Act up to 2002

**3. A. The Reserve Bank of India Act, 1934**

**12**

Provisions relating to: Incorporation, Capital management and Business (Sec 3 to 19) Central Banking functions ((Sec -20 to 45): Regulatory and Supervisory Collection and furnishing of credit information (45 A to 45 G) Penalties (Sec 58 B to 58 -G), Changing role of the RBI.

**B. The Foreign exchange Management Act, 1999**

Provisions relating to: Preliminary (Sec 1-2), Regulation and management of foreign exchange (Sec 3 to 9) Authorized person (Section 10 to 12) Contravention and penalties (Section 13 to 15) Adjudication and appeal (Sections 16 to 21 and sections 34-35) Directorate of enforcement (section 36 to 38).

**4. Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002**

**12**

Provisions relating to: Preliminary (Section 1 and 2) Regulation of securitisation and reconstruction of financial assets and financial institutions (Section 3 to 12 A) Enforcement of security interest (Section 13 to 19) Central registry (Section 20 to 26) Offences and penalties (Section 27 to 30) Miscellaneous (Section 31 to 41) Relevant amendments between 2004 and 2008

**TOTAL 48**

**List of Books Recommended for Study**

1. Tanna's: Banking – Law & Practice.
2. Banking: Law & Practice – P.N. Varshaney.
3. Management of Banking & Financial Services – Justine Paul and Pamalata Suresh.
4. Legal and Regulatory Aspects of Banking– Published by Indian Institute of Banking & Finance.
5. All relevant & recent Bare Acts.

**M.Com. Part I Semester I**  
**Advanced Banking & Finance Special Paper II.**  
**Subject Title -: Central Banking**  
**Course Code -: 116**

**Objectives:**

1. To study the functions of central bank
2. To understand monetary policy and its instruments

- 1. Evolution of central banking** **08**  
Origin and evolution of central banking.  
Need and Rationale of central bank.  
Evolution of Reserve Bank of India (R.B.I.)
- 2. Functions of Reserve Bank of India** **12**  
**A. The Reserve Bank as currency authority:**  
□ Issue of currency notes, Asset banking for note- issue, Distribution of currency, Currency chests, Recent developments in currency management.  
**B. The Reserve Bank as banker to Government:**  
Maintenance of Government accounts, Banker to the Central Government and the State Governments, Management of public debt  
**C. RBI as a Banker Bank:** Controller of Credit, Lender of Last Resort  
**D. RBI as a Custodian/Manager of Foreign Reserves**  
**E. Promotional Functions of RBI**
- 3. Regulation and supervision of Reserve Bank over Commercial banks.** **10**  
Regulation and supervision over commercial banks:  
Licensing of banks, Opening of new banks, Branch Licensing, Foreign banks, Cash reserves and liquid assets, Prudential norms, capital and reserves, Control over methods of operation
- 4. Para banking activities** **10**  
Control over management, Annual accounts and audit, □ Subsidiaries of commercial banks,  
□ Credit Information Bureau of India Ltd. (CIBIL) Bank Assurance, □ Inspection of banks: Board for Financial Supervision (BFS) and system of inspection.
- 5. Non-banking financial companies (NBFCs)** **08**  
Regulatory framework for NBFCs:  
Measures for supervision over NBFCs.

**List of Books Recommended for Study**

- 1) Monetary & Financial Sector Reforms in India – Y. Venugopal Reddy.
- 2) Govt. of India- Economic Survey
- 3) R.B.I.: Functions and Working – R.B.I. Publication.
- 4) R.B.I. Bulletins.
- 5) R.B.I. Annual Reports.
- 6) Trends & Progress of Banking in India- R.B.I. Annual

**M.Com. Part I Semester I**  
**Advanced Marketing Special Paper I.**  
**Subject Title -: Marketing Techniques**  
**Course Code -: 117**

**Objectives :**

To study and critically analyze the basic concepts & techniques of Marketing.

Unit No.	Name of the Topic	Periods
<b>1</b>	<b>Marketing an Introduction:</b> Meaning definition Elements. Objectives Importance Advantages and limitations Evolution and Scope Approaches to the study of Marketing/ Marketing Concepts- Production, Product, Selling, Marketing and Holistic Marketing Concept	<b>08</b>
<b>2</b>	<b>Marketing Organisation and Environment</b> Meaning Definition need and importance of a Marketing Organisation, Different types of Marketing Organisations Marketing Environment: Meaning and Definition, Internal and external environmental factors impacting the marketing environment	<b>08</b>
<b>3</b>	<b>- Product Mix—</b> Meaning and Definition of Marketing Mix Concept of Product, Product Lines, Product line length, depth, width. Product Mix Width. Product Simplification diversification and elimination Product Management: New product development and Product Life Cycle Brand Management: concept definition and history of brand/branding Brand Creation, Rebranding, Brand Positioning, Brand Equity Brand Contract, Brand Factory Labelling	<b>08</b>
<b>4.</b>	<b>Price and Place Mix</b> Price—definition and elements of price mix. Need, importance and objectives of pricing. Factors influencing pricing. Pricing Strategies. Place – Types of Distribution Channels and factors affecting selection of channel.	<b>08</b>
<b>5</b>	<b>Promotion Mix/ Marketing Communication</b> Elements of Promotion Mix—Advertising- Advertising – Setting the advertising objectives – Role of advertising, advertising media – advertising bud get – evaluating advertising effectiveness – profile of advertising agencies in India. Recent trends in modern advertising – Evaluating marketing communication programs Personal Selling – concept and importance, process of personal selling. Understanding and dealing with different types of customers. Sales Promotion: Meaning, Objectives and importance . Tools or techniques of sales promotion. Public Relations—Concept, history and tools of public relations. P.R agencies in Inda. Public Relations Society of India E- Marketing Promotion – E mails, different types of Web advertising, blogspots Online Sponsorships.	<b>08</b>

<b>6</b>	<b>People Process and Physical Evidence --</b> People as a part of Marketing Mix, customer interaction, customer service Process as part of the Marketing Mix, Physical evidence/ Packaging	<b>08</b>
<b>Total</b>		<b>48</b>

<b>Books Recommended</b>
<ol style="list-style-type: none"> <li>1. Philips Kotlers – Marketing Management</li> <li>2. Marketing Management Cravens – Hills – Woodruff</li> <li>3. Marketing – A Managerial Introduction – Gandhi</li> <li>4. Marketing Information System – Davis – Olsan</li> <li>5. Consumer Behavior – Schiffman – Kanuk</li> <li>6. Principles and Practice of Marketing – John Frair</li> </ol>

**M.Com. Part I Semester I**  
**Advanced Marketing Special Paper II.**  
**Subject Title -: Consumer Behavior.**  
**Course Code -: 118**

**Objective :**

To impart knowledge regarding marketing management techniques and process; to develop understanding of the marketing functions techniques and strategies

<b>Unit No.</b>	<b>Name of the Topic</b>	<b>Periods</b>
1	<b>Introduction to Consumer Behaviour and Market Segmentation:</b> Meaning and Definition. Nature Scope and Application of Consumer Behaviour . Difference between consumer and customer. Market Segmentation: Meaning and definition, Market Criteria for effective Segmentation, Process/ Stages of Market Segmentation , Bases of Segmentation,	<b>08</b>
2	<b>Consumer Perception: Definition of Perception, Elements of Perception,</b> Perception Process, Importance of Perception Perception & Brand. Consumer Perception of Risks.	<b>08</b>
3	<b>Consumer Learning and Memory</b> Meaning Definition and elements of Learning Types of Learned Behaviour Behavioural Theory of Learning General Characteristics of Learning Memory Defined Advertising/Marketing Application	<b>08</b>
4	<b>Personality and Self Concept</b> Personality Defined Theories of Personality Measurement of Personality Self- Concept Defined How Self Concept Develop Brand Personality and Marketing Application	<b>08</b>
5	<b>Motivation and Involvement</b> Concept of Motivation and Motives Theory of Motivation Classifications of Motives Role of Motives Motives Arousal Definition of Involvement Dimensions of Involvement Types of Involvement and Marketing Implications	<b>08</b>
6	<b>Attitude Formation and Change</b> Definition of Attitude Attitude Function Characteristics of Attitude	<b>08</b>

	Sources of Attitude Development Structure Models of Attitudes Strategies for Changing Attitudes and Intentions	
<b>TOTAL</b>		<b>48</b>

**Books Recommended**

1. Consumer Behavior – Hawkins, Best, Coney – TMH, 9/e, 2004
2. Consumer Behaviour – Concepts Applications & Cases – M S Raju & Dominique Xardel
3. Consumer Behavior – Leon Schiffman, Leslie Lazar Kanuk – Pearson / PHI, 8/e
4. Consumer Behavior In Indian Perspective – Suja Nair – Himalaya Publishers
5. Customer Behavior – A Managerial Perspective – Sheth, Mittal – Thomson,
6. Cross cultural marketing – Robert Rugimbana and Sonny Nwankwo
7. Customer Relationship Management – Peeru Ahamed & Sagadevan – Vikas Publishing
8. Consumer Behaviour- Walker
9. Consumer behaviour- Louden, Delebeta
10. Consumer Behavior - J.Paul Peter
11. Consumer Behaviour – Concepts Applications & Cases – M S Raju & Dominique Xardel.



**Savitribai Phule Pune University**  
**Faculty of Commerce & Management**  
**S Y B Com (Semester III)**  
**(Choice Based Credit System)**  
**Revised Syllabus (2019 Pattern)**

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**CORE COURSE – I**

**Subject: Business Communication-I**

**Course Code: 231**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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**1. Objectives of the Course:**

- a. To understand the concept, process and importance of communication.
- b. To acquire and develop good communication skills requisite for business correspondence.
- c. To develop awareness regarding new trends in business communication.
- d. To provide knowledge of various media of communication.
- e. To develop business communication skills through the application and exercises.

**Medium of Instruction: English**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Skills to be developed</b>
<b>1</b>	<b>Introduction of Business Communication</b>	1.1 Introduction, Meaning, Definition. 1.2 Characteristics, Importance of communication. 1.3 Principles of communication, Process of communication 1.4 Barriers to communication & Remedies. 1.5 Methods and Channels of Communication.	i. Conceptual Clarity and understanding the Meaning , Characteristics and Importance of communication. ii. To understand the Principles and Process of communication iii. To understand Barriers to communication
<b>2</b>	<b>Business Letters</b>	2.1 Meaning and Importance 2.2 Qualities or Essentials, Physical Appearance 2.3 Layout of Business	i. To understand the importance of business letters. ii. To understand Essentials

		Letter	Qualities of business letters.
3	<b>Soft skills</b>	3.1 Meaning, Need, Importance. 3.2 Elements of soft skills. a) Manners & Etiquettes, Grooming. b) Effective Listening & Speaking c) Interview Skills. d) Presentation e) Group Discussion. f) Problem-solving skills G)Time management abilities	i. To acquire the fundamental knowledge about soft skills ii. To understand the Elements of Soft Skills
4	<b>Resume writing &amp; Job Application letters</b>	4.1 Introduction, essential elements of Bio data, Resume writing, Curriculum Vitae. 4.2 Meaning & Drafting of Job Application letter.	To understand Resume writing and Job application letter.

**Teaching Methodology:**

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Project	Expected Outcome
1	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit ,	Relevant You Tub Videos ,Relevant slide show, online Video Short Film Show	Individual assignment report	Understanding of basic knowledge of Business Communication .

		internet resources			
2	10	Pre reading, Class discussion, internet resources, Lecture, Expert Lecture, PPT / Poster Presentation, Group Discussion, Library /Home Assignment ,Internal Assignment, case study	Relevant You Tub Videos , Short Film Show, A.V Application	Visit to Office	Understanding the importance and Essentials Qualities of business letters.
3	18	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources ,students Seminar/Workshop case study	Relevant You Tub Videos.PPT ,AV Application, online video	Presentation	Understanding the knowledge about soft skills.To create awareness about soft skill among the students
4	08	Guest Lectures of eminent Personalities , Group Discussion, Library visit ,Home Assignment ,case study	Online Videos, Relevant slide show , Short Film Show	Individual Resume / Bio-Data Writing	To create ability among the students for writing resume and Job application letter. To create ability among the students for Business Correspondence
<b>Total</b>	<b>48</b>				

**References:**

Sr. No	Title of Book	Author/s	Publication	Place
1	Business Communication	K. K.Sinha	Galgotia Publishing	New Delhi.

			Company	
2	Business Correspondence & Report Writing	R. C. Sharma & Krishan Mohan	Tata McGraw Hill Publishing Co. Ltd.	New Delhi.
3	Communication	C.S. Rayudu	Himalaya publication	Mumbai
4	Business Communication	Asha Kaul	Prentice Hall of India	New Delhi.
5	Business Communication	Vasishth Neeru & Rajput Namita	Kitab Mahal	Allahabad
6	Soft Skills	Dr. Alex	S.Chand Publication	Delhi
7	Essentials of Business Communication	Rajendra Pal & Korlahalli	Sultan Chand & Sons	New Delhi.
8	Managerial Communication	P. D. Chaturvedi & Mukesh Chaturvedi	Pearson	Delhi

**Guidelines for completion of Practical's:**

- 1) At least three Practical's should be completed during each semester by students in consultation with subject teacher.
- 2) Practical should be based on visit as well as library assignments, Project based, Activity based.
- 3) A subject teacher has special privileges to make the allotment of practical topics.
- 4) Students should discuss with the subject teacher at the time of selection of practical topics.
- 5) If a student fails to complete minimum number of practical's, then the student shall not be eligible for appearing at the practical examination.

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## CORE COURSE – II

**Subject: CORPORATE ACCOUNTING -I**

**Course Code: 232**

**Total Credits: 03**

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### **Preamble**

In the modern economic environment, the corporate sector is one of the major contributors towards GDP of any country and is also one of the largest and fastest growing sectors for providing employment opportunities. In last decade, the corporate sector has seen a massive growth in economic terms i.e. the volume of turnover, income and expenses etc. and also in terms of expansion of business across the globe. Accounting plays a vital role in this growth and to ensure safeguard of the interest of the stakeholders and the society. It is, therefore, important to educate the students of commerce in the accounting practices adopted by the corporate organizations.

### **Objectives of the course:**

1. To acquaint the student with knowledge about various Concepts , Objectives and applicability of some important accounting standards associated with to corporate accounting.
2. To develop understanding among the students on the difference between commencement and incorporation of a company and the accounting treatment for transactions during the two phases.
3. To update the students with knowledge for preparation of final accounts of a company as per Schedule III of the Companies Act 2013
4. To empower to students with skills to interpret the financial statements in simple and summarized manner for effective decision making process.
5. To acquaint the student with knowledge about various Concepts , Objectives and applicability of some important accounting standards associated with to corporate accounting.
6. To develop understanding among the students on the difference between commencement and incorporation of a company and the accounting treatment for transactions during the two phases.
7. To update the students with knowledge for preparation of final accounts of a company as per Schedule III of the Companies Act 2013
8. To empower to students with skills to interpret the financial statements in simple and summarized manner for effective decision making process.

### **Depth of the program – Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Skills to be developed</b>
<b>1.</b>	<b>Accounting Standards</b>	<ul style="list-style-type: none"><li>• Standards 5, 10, 14 Accounting and 21</li><li>• Its applicability with Practical Examples.</li></ul>	<ul style="list-style-type: none"><li>• To develop conceptual understanding about various Accounting Standards and its applicability in corporate accounting.</li></ul>

2.	<b>Profit Prior to Incorporation</b>	<ul style="list-style-type: none"> <li>• Introduction to the process on incorporation of a company.</li> <li>• Difference between incorporation and commencement of a company.</li> <li>• Accounting of incomes and expenses during Pre- and Post-Incorporation period.</li> <li>• Basis of allocation and apportionment of income and expenses for the Pre- and Post-Incorporation period.</li> </ul>	<ul style="list-style-type: none"> <li>• To develop Conceptual understating about Pre- and Post-Incorporation period.</li> <li>• To develop analytical skills (by understanding the allocation and apportionment of incomes and expenses for the Pre- and Post-Incorporation)</li> </ul>
3.	<b>Company Final Accounts</b>	<ul style="list-style-type: none"> <li>• Preparation of Company Final Accounts- Forms and contents as per Provisions Schedule III of the Companies Act 2013 ( with the amendments for the relevant academic year)</li> <li>• Related adjustments and their treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• To understand Practical Application of financial statements along with various adjustments.</li> <li>• To understand revised format of company final accounts.</li> </ul>
4.	<b>Valuation of Shares</b>	<ul style="list-style-type: none"> <li>• Concept of Valuation,</li> <li>• Need for Valuation,</li> <li>• Special Factors affecting Valuation of Shares, Methods of Valuation –</li> <li>• Net Assets Method,</li> <li>• Yield Basis Method,</li> <li>• Fair Value Method</li> </ul>	<ul style="list-style-type: none"> <li>• To understand the concept and need of valuation of shares</li> <li>• To understand the methods of valuation of shares.</li> </ul>

**Teaching Methodology:**

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	Use of e-contents, online lectures and quiz, PowerPoint Presentations	Lectures of experts available on YouTube and other digital platforms	Individual assignment report	Developing understanding on applicability of various Accounting Standards

2	12	Use of e-contents, online lectures and quiz, PowerPoint Presentations	Lectures of experts available on YouTube and other digital platforms	---	Knowledge about types of profit and their apportionment
3	18	Use of e-contents, , online lectures and quiz, PowerPoint Presentations	Study of the Final Accounts an Indian Company from its Annual Report	Individual assignment of solving practical problems	Conceptual Clarity and Practical understanding
4	08	Valuation of shares of an Indian company based on Financial statements of latest relevant financial year by a Chartered Accountant / Subject Expert	Lectures of experts available on YouTube and other digital platforms	Group Activity - Project Report on Valuation of shares of an Indian company based on Financial statements of latest 3 relevant financial years	Analytical skills enhancement and Decision making skills of students will be developed

**Method of Evaluation:**

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	MCQ / Small Practical Problems	As per University norms	--
Unit – II	Practical Problems	As per University norms	--
Unit – III	Practical Problems written Test / MCQ	As per University norms	--
Unit – IV	Written Test /Report writing on valuation of shares of a company from its latest annual report	As per University norms	Certificate course on GST

**List of Books Recommended :-**

1. Advanced Accounts: By M.C. Shukla & S.P. Grewal (S.Chand & Co.Ltd.)
2. Advanced Accountancy: By S.P. Jain & K.N. Narang ( Kalyani Publishers)
3. Advanced Accountancy: By R.L.Gupta & M. Radhaswamy (Sultan Chand & Sons)
4. Company Accounts: By S.P. Jain & K.L. Narang
5. Advanced Accounts: By Paul Sr.
6. Corporate Accounting: By Dr. S. N. Maheshwari & S.K. Maheshwari
7. Corporate Accounting: By Mukharji & Hanif
8. Accounting Standards –as issued by Institute of Chartered Accountants of India.

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## CORE COURSE – III

**Subject: BUSINESS ECONOMICS (MACRO)**

**Course Code: 233**

**Total Credits: 03**

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### **Preamble:**

An approach to Macro Economics is to examine the economy as a whole. This paper aims to provide knowledge about macroeconomics that includes macro-economic variables and theories. It also aims to make students familiar about the various concepts of macro-economics, national income, macro-economic theories and its implications in the economy.

### **Scope of the programme –**

Basic Knowledge of Macro Economics

### **Objectives –**

- To familiarize the students to the basic theories and concepts of Macro Economics and their application.
- To study the relationship amongst broad aggregates.
- To impart knowledge of business economics.
- To understand macroeconomic concepts.
- To introduce the various concepts of National Income.

<b>Unit</b>	<b>Name and Content of the Chapter</b>	<b>Purpose &amp; Skills to be Developed</b>
<b>Unit 1</b>	<b>Introduction to Macro Economics</b>	<b>Purpose:</b> To make the students aware of concepts in macroeconomics <b>Skills:</b> Analyze & think critically, develop writing skills.
	1.1 Meaning and Definition of Macro Economics.	
	1.2 Nature of Macro Economics.	
	1.3 Scope of Macro Economics.	
	1.4 Significance of Macro Economics.	
	1.5 Limitations of Macro Economics.	
	1.6 Macro Economic Objectives.	
<b>Unit 2</b>	<b>National Income</b>	<b>Purpose:</b> To make the students aware of basic concepts in national income <b>Skills:</b> Analyze & think critically, quantitative aptitude and develop writing skills.
	2.1 Meaning and Importance of National Income.	
	2.2 Concepts: 2.2.1 Gross National Product ( GNP ) 2.2.2 Net National Product ( NNP ) 2.2.3 Gross Domestic Product ( GDP ) 2.2.4 Per Capita Income ( PCI ) 2.2.5 Personal Income ( PI ) 2.2.6 Disposable Income ( DI )	
	2.3 Measurement of National Income:	

	Methods and Difficulties	
	2.4 Circular Flow of Income: Two sector model	
<b>Unit 3</b>	<b>Theories of Output and Employment:</b>	<b>Purpose:</b> To help the students to understand the concept of Employment and theory Output. <b>Skills:</b> Understanding, writing skills, critical thinking.
	3.1 The Classical Theory of Employment: J.B.Say	
	3.2 Keynes Criticism on Classical Theories of Employment.	
<b>Unit 4</b>	3.3 Keynesian Theory of Employment.	<b>Purpose:</b> To understand the concepts of Multiplier and Accelerator. To impart knowledge of Consumption Function, Saving and Investment Function  <b>Skills:</b> Understanding, ability to analyze, quantitative aptitude and writing skills.
	<b>Consumption, Saving and Investment:</b>	
	4.1 The Consumption Function: 4.1.1 Meaning 4.1.2 Marginal Propensity to Consume (MPC) 4.1.3 Keynes's Psychological Law of Consumption. 4.1.4 Determinants of Consumption.	
	4.2 The Saving Function: 4.2.1 Meaning, 4.2.2 Marginal Propensity to Save (MPS) 4.2.3 Determinants of Savings 4.2.4 Relationship between Consumption and Saving Function (MPC and MPS)	
	4.3 Meaning and Types of Investment: Gross, Net, Induced and Autonomous.	
	4.4 Marginal Efficiency of Capital and its Determinants.	
	4.5 Concepts of Investment Multiplier and Acceleration Principal.	

**Teaching Methodology:**

Unit No.	Total Lectures	Innovative methods to be Used	Film shows and AV Applications	Project	Expected Outcome
1	08	<ul style="list-style-type: none"> <li>Open book discussion</li> <li>Digital lectures</li> <li>Reading</li> <li>Projects</li> </ul>	You tube lectures on macro economics	<ul style="list-style-type: none"> <li>Difference in goals of developed and developing</li> </ul>	Students will understand basic concepts of macroeconomics

				<p>economies</p> <ul style="list-style-type: none"> <li>• Comparison between macro and micro economics</li> </ul>	<p>Will be able to analyze and interpret</p>
2	12	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Case studies</li> <li>• Problem solving based learning</li> </ul>	<p>You tube lectures, Lectures on SWAYAM Portal</p>	<ul style="list-style-type: none"> <li>• Difficulties in estimation of National income in India.</li> <li>• Method of National Income used by India</li> </ul>	<p>Will know various concepts of national income Will understand the methods of calculation of national income and difficulties involved therein.</p>
3	14	<ul style="list-style-type: none"> <li>• Pair learning</li> <li>• Group discussion</li> <li>• Open book discussion</li> </ul>	<p>Teacher oriented PPTs. You tube lectures</p>	<p>Critical evaluation of Classical theory Keynesian theory In present context</p>	<p>Will understand Says law of employment Will understand the difference between classical and Keynesian theory Able to interpret Keynes theory of effective demand.</p>
4	14	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Teacher c</li> <li>• Games and simulation</li> </ul>	<p>You tube lectures Online PPTs</p>	<ul style="list-style-type: none"> <li>• Changing trends of saving and investment in India</li> <li>• Comparison of the trends of saving and investment in India with any other developed or developing country.</li> <li>• Study the impact of multiplier and acceleration by taking an</li> </ul>	<p>Will understand the concept of saving and investment Will know the effect of multiplier and acceleration in the economy.</p>

				hypothetical example.	
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**References:**

1. Economics: Paul A Samuelson and William D Nordhaus. McGRAW – HILL international Edition.
2. Macroeconomics: N. Gregory Makiw, Worth Publishers, New York.
3. Macro- Economic Theory: M L Zingan, Vrinda Publications (P) Limited.
4. Samashti Arthshstriy Vishleshan : Shridhar Deshpande, Vinayak Deshpande, Himalaya Publication House.
5. Theories of value: output and employment - John Eatwell, Thames Polytechnic, 1979
6. Businss Economics, Dr.J.P.Mishra, Sahitya Bhavan Publications, Agra.
7. Macroeconomics: A Global Text, Sampat Mukherjee, New Central Book Agency Private Limited (Latest Edition), New Delhi
  8. Macroeconomics: A Rough Guide, in Macroeconomics: A Reader, (Ed.) Brian Snowden and Howard Vane, Routledge
  9. Business Economics (Macro): Dr. Rasal, Bhadane, Fernandes, Idol Publication, Pune-2
  10. Macroeconomics: Theory and Policy, S. Chand & Company Limited. (Latest Edition)
  11. Ben Fine & Ourania Dimakou, Macroeconomics: A Critical Companion, Pluto Press (Latest Edition)
  12. Michel De Vroey, A History of Macroeconomics: From Keynes to Lucas and Beyond, Cambridge University Press (Latest Edition)
  13. Sampat Mukherjee, Analytical Macroeconomics: From Keynes to Mankiw, New Central Book Agency Private Limited
  14. Macroeconomics- K R Gupta, R.K.Mandal, Amita Gupta, Atlantic Publishers and distributor’s pvt.ltd.
  15. Money, Inflation, and Business Cycles the Cantillon Effect and the Economy, Arkadiusz Sieroń. Abingdon, Routledge, 2019. NewYork
  16. Macroeconomics: N. Gregory Maki Worth Publishersw, New York
  17. Macro Economics: Rudiger Dornbusch, Stanley Fisher & Richard Startz Tata McGraw Hill Education Private Limited (Latest Edition), US
  18. The General Theory of Employment, Interest, and Money- John Maynard Keynes, General Press
  19. An Analysis of John Maynard Keynes's The General Theory of Employment, Interest and Money- John Collins, CRC Press, 2017.

**Suggested Web References**

Sr. No	Lectures	Films	Animation	PPTs	Articles
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1.	<a href="https://www.youtube.com/watch?v=byqiVAk0dk4">https://www.youtube.com/watch?v=byqiVAk0dk4</a>	<a href="https://inomics.com/insight/10-movies-all-economists-will-love-1292886">https://inomics.com/insight/10-movies-all-economists-will-love-1292886</a>	<a href="https://www.youtube.com/watch?v=B2YYwIElg0c">https://www.youtube.com/watch?v=B2YYwIElg0c</a>	<a href="https://www.slideshare.net/hassanmujtaba7547/frame-work-of-macro-economics-ppt">https://www.slideshare.net/hassanmujtaba7547/frame-work-of-macro-economics-ppt</a>	<a href="https://www.journals.elsevier.com/journal-of-macroeconomics/recent-articles">https://www.journals.elsevier.com/journal-of-macroeconomics/recent-articles</a>
2.	<a href="https://www.economicnetwork.ac.uk/teaching/Video%20and%20Audio%20Lectures/Principles%20of%20Macroeconomics">https://www.economicnetwork.ac.uk/teaching/Video%20and%20Audio%20Lectures/Principles%20of%20Macroeconomics</a>	<a href="http://www.studyingeconomics.ac.uk/the-little-bits-we-like/films/">http://www.studyingeconomics.ac.uk/the-little-bits-we-like/films/</a>	<a href="https://www.youtube.co.watch=9q27h9o9gJQ">https://www.youtube.co.watch=9q27h9o9gJQ</a>	<a href="https://sites.google.com/site/davismacroclass/Home/powerpoint-presentations">https://sites.google.com/site/davismacroclass/Home/powerpoint-presentations</a>	<a href="https://www.britannica.com/topic/national-income">https://www.britannica.com/topic/national-income</a>
3.	<a href="http://web.econ.ku.dk/okocg/MATOEK/Mak%C3%98k2/Mak%C3%98k2-2015/Forel%C3%A6sninger/Pensum-M2-i-reen-fil-2015.pdf">http://web.econ.ku.dk/okocg/MATOEK/Mak%C3%98k2/Mak%C3%98k2-2015/Forel%C3%A6sninger/Pensum-M2-i-reen-fil-2015.pdf</a>	<a href="https://www.cambridge.org/core/books/entertainment-industry-economics/movie-macroeconomics/011C12934F13A076CD4B6D89E8351373">https://www.cambridge.org/core/books/entertainment-industry-economics/movie-macroeconomics/011C12934F13A076CD4B6D89E8351373</a>	<a href="https://journals.sagepub.com/doi/pdf/10.1177/056943451105600106">https://journals.sagepub.com/doi/pdf/10.1177/056943451105600106</a>	<a href="https://www.slideshare.net/rarichanm/national-income-42518576">https://www.slideshare.net/rarichanm/national-income-42518576</a>	<a href="https://academic.oup.com/qje/article/73/3/407/1873398">https://academic.oup.com/qje/article/73/3/407/1873398</a>

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## CORE COURSE – IV

**Subject: BUSINESS MANAGEMENT -I**

**Course Code: 234**

**Total Credits: 03**

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1. Objectives of the course
  - a. To provide basic knowledge and understanding about various concepts of Business Management.
  - b. To help the students to develop cognizance of the importance of management principles.
  - c. To provide an understanding about various functions of management.
  - d. To provide them tools and techniques to be used in the performance of the managerial job.
  
2. Depth of the program – fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose / Skills to be developed
1	Management :	<ul style="list-style-type: none"><li>• Meaning definition of Management</li><li>• Need for Management study</li><li>• Process and levels of management</li><li>• Functions of management</li><li>• Contribution of F.W. Taylor, Henry Fayol, Peter Drucker, Mintzberg and Michel Porter in development of management thoughts</li></ul>	<ol style="list-style-type: none"><li>1. Understanding how management works</li><li>2. Developing thought process as a manager</li><li>3. Understanding functions of Management</li><li>4. Understand the role of Management Thinkers in development of modern management process</li></ol>
2	Understanding Management : Planning and Decision Making	<ul style="list-style-type: none"><li>• Meaning, definition and nature of Planning</li><li>• Forms and types of Planning</li><li>• Steps in Planning</li><li>• Limitations of Planning</li><li>• Meaning and techniques of Forecasting</li><li>• Meaning, Types and Steps in Decision Making</li></ul>	<ol style="list-style-type: none"><li>1. How to plan various management activities, programmes and events</li><li>2. Developing of decision making skills to evaluate various alternatives and situations</li><li>3. Understanding the concept of forecasting</li></ol>
Unit No.	Unit Title	Contents	Skills to be developed

3.	Management at Work : The process of organizing and staffing	<ul style="list-style-type: none"> <li>• Meaning, Process and Principles of Organizing</li> <li>• Concept of Authority and Responsibility</li> <li>• Delegation of Authority</li> <li>• Difficulties in Delegation of Authority</li> <li>• Need and importance of Staffing</li> <li>• Recruitment : Sources and Methods</li> </ul>	<ol style="list-style-type: none"> <li>1. Understanding the importance and process of organisation</li> <li>2. Understanding authority and process of delegation of authority</li> <li>3. Understanding process of recruitment</li> </ol>
4.	Result orientation : Direction and Team Work	<ul style="list-style-type: none"> <li>• Meaning, Elements, Principles, Techniques and Importance of Direction.</li> <li>• Concept of Team Work, Group Dynamics and principles regarding interpersonal communication and Group Behaviour</li> </ul>	<ol style="list-style-type: none"> <li>1. How to direct a group / team?</li> <li>2. Team building skills</li> <li>3. Winning confidence of group members</li> <li>4. How to initiate healthy discussions to achieve consensus?</li> </ol>

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	PowerPoint Presentations, YouTube Videos	Films on Process of Management and Films on Management Thinkers	Poster Presentation on Management Thinkers and their role in present business management	Students will get an idea about the basic managerial process
2	12	PowerPoint Presentations, YouTube Videos	Documentaries	Student group activities which involve Planning and Decision Making	Students will get an idea about how planning works in real life.
3	12	PowerPoint Presentations, YouTube Videos	Lectures on industry experts and documentaries on organizing and staffing	Poster Presentation	Students will understand the process of implementation of both the concepts.
4	12	PowerPoint Presentations, YouTube	documentaries	Student group activities which involve direction and team work.	Students will understand importance of proper direction and

		Videos			team work.
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**References :-**

1. Essentials of Management - Horold Koontz and Iteinz Weibrich - McGrawhills International
2. Management Theory & Practice - J.N.Chandan
3. Essential of Business Administration - K.Aswathapa Himalaya Publishing House
4. Principles & practice of management - Dr. L.M.Parasad, Sultan Chand & Sons -New Delhi
5. Business Organization & Management - Dr. Y.K. Bhushan
6. Management: Concept and Strategies By J. S. Chandan, Vikas Publishing
7. Principles of Management, By Tripathi, Reddy Tata McGraw Hill
8. Business organization and Management by Talloo by Tata McGraw Hill
9. Business Environment and Policy – A book on Strategic Management By Francis Cherunilam Himalaya Publishing House
10. Principles & practice of management - Dr. L.M.Parasad, Sultan Chand & Sons -New Delhi
11. Business Organization & Management - Dr. Y.K. Bhushan
12. Management: Concept and Strategies By J. S. Chandan, Vikas Publishing
13. Principles of Management, By Tripathi, Reddy Tata McGraw Hill
14. Business organization and Management by Talloo by Tata McGraw Hill
15. Business Environment and Policy – A book on Strategic Management By Francis Cherunilam Himalaya Publishing House

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## CORE COURSE – V

**Subject: ELEMENTS OF COMPANY LAW**

**Course Code: 235**

**Total Credits: 03**

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### Objectives of the Program

1. To develop general awareness of Elements of Company Law among the students.
2. To understand the Companies Act 2013 and its provisions.
3. To have a comprehensive understanding about the existing law on formation of new company in India.
4. To create awareness among the students about legal environment relating to the company law.
5. To acquaint the students on e-commerce, E governance and e-filing mechanism relating to Companies.
6. To enhance capacity of learners to seek the career opportunity in corporate sector.

Unit No	Unit Title	Contents	Skills
1.	<b>The Companies Act, 2013: Introduction and Concept</b>	<b>Company and its Formation</b> <b>1. Background and Features of company the Companies Act, 2013</b> <b>2. Company:</b> Meaning, Nature and Characteristics of Company. <b>3. Types of Companies:</b> On the basis of mode of formation, Number of members, liability and Control, <b>Public and Private Companies:</b> Distinction, Advantages, Disadvantages, Privileges and their Conversion into each other. <b>Other kinds of Companies:</b> One Person Company, Charitable Companies, Dormant Company, Sick Company, Small Company, Listed Company, Foreign Company and its business in India etc.	Understand the concept of company and Equip the students with knowledge of nature and types of companies.

2.	<b>Formation and Incorporation of a Company</b>	<b>Formation and Incorporation of a Company:</b> Stages in the Formation and Incorporation. 1. Promotion: Meaning of the term ‘Promoter’ / Promoter Group - Legal Position of Promoters, Pre-incorporation contracts. 2. Registration/ Incorporation of a company : - Procedure, Documents to be filed with ROC. Certificate of Incorporation- Effects of Certificate of Registration. 3.Capital Subscription/Raising of Capital 4.Commencement of business	Acquaint the students with the procedure of formation of company.
3.	<b>Principal Documents</b>	<b>Principal Documents:</b> <b>Documents relating to Incorporation and Raising of Capital:</b> 1 <b>Memorandum of Association:</b> Meaning and importance- Form and contents- Alteration of memorandum. 2 <b>Articles of Association:</b> Meaning- Contents and form of Articles- Alteration of articles- Doctrine of constructive notice- Doctrine of Indoor Management. 3 <b>Prospectus:</b> Meaning, contents, Statutory requirements in relation to prospectus- Deemed Prospectus- Shelf prospectus - Statement in lieu of prospectus- Misstatement in a prospectus and Liabilities for Mis-statement.	To make students understand the role and importance of various documents like Memorandum
4.	<b>Capital of the Company</b>	<b>Capital of the Company</b> 1. Various Modes for Raising of Share Capital including private placement, public issue, rights issue, bonus shares, ESOS, Sweat Equity Shares, Buy-back of shares. 2. Allotment of Shares: Meaning- - Statutory provisions for allotment, improper and irregular allotment- Consequences of irregular allotment. 3. Calls On Shares: Meaning- Requisites of a valid call, Calls in advance, Share Certificates: Meaning, Provisions regarding issue of share certificates - Duplicate Share Certificate.	To give Comprehensive insight about the capital of Company and various aspects of shares.

		4. Share Capital: Meaning, Structure (Kinds) – Concept of Securities – Definition, Nature and Kinds of Shares.	
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[Note: Recent amendments in the Acts and relevant Landmark cases decided by courts are expected to be studied]

**Teaching Methodology:**

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	The Companies Act 2013 Document , PPT, Narration, , Survey Analysis Article review	You Tube clips about the Companies Act 2013.	Report Review	Acquaint with knowledge and maturity to understand Company law 2013
2	12	Project making, , jingles, slogan , Quiz Competition,	Use of You tube, Review of Movie on relevant topic.	New Emerging Issues in Principle documents of company	To Acquaint knowledge and application of formation and incorporation of Company
3	12	Case study, Poster making, Interview with Company secretary	Case Analysis, format of principal documents of the company ,	Recent provisions of law and salient feature of principal documents of company.	To understand the knowledge about the principal documents of the company.

4	12	Virtual Learning, Group Discussion, Assignments on share capital, Interview of Corporate lawyer	Film on capital raising procedure, Internet precautions	Project on share capital of the company	To inculcate skills and knowledge about the share capital of the company
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#### Methods of Evaluations

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Evaluation,	Written Exam	Seminar on The Companies Act, 2013
Unit – II	Continuous Evaluation	Written Exam	Awareness program
Unit – III	Continuous Evaluation,	Written Exam	Visit to company secretary's office
Unit – IV	Continuous Evaluation,	Written Exam	Awareness program

#### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	The Companies Act with Rules	Taxmann	Tan Prints (India) Pvt. Ltd. Jhajjar	Chandigarh
2.	The Companies Act, 2013	Bharat	Bharat Law House Pvt. Ltd.	Delhi
3.	Company Law-A Comprehensive Text Book on Companies Act 2013	Dr. G.K. Kapoor & Dr. Sanjay Dhamija	Taxmann Publications Pvt. Ltd	Delhi
4	Company Law	Dr S R Meyani	Asia Law House	Mumbai
5	Company Kaydyachi Olakha	K Shriram	Aarti & Co.	Mumbai
6	Guide to Memorandum, Articles & Incorporation of Companies	Bhandari & Makheeja	Lexis Nexis	Mumbai
7	Elements of Company Law	Arun Gaikawad , Chandrakant Chaudhari & Devendra Bhawari	Bibha	Pune

8 .	Elements of Company Law	Prakash N. Chaudhary	Nirali Prakashan	Pune
9 .	E-Commerce : Legal Compliance	Pratima Narayan	Eastern Book Company	Mumbai

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## SPECIAL ELECTIVE COURSE – VI

**Subject: Business Administration**

**Course Code: 236(A)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### 1. Objectives of the Course:

- a. To provide basic knowledge about various forms of business organizations
- b. To acquaint the students about business environment and its implications thereon.
- c. To make them aware about the recent trends in business.

### 2. Depth of the program – fundamental Knowledge

UNIT No.	Unit title	Contents	Purpose/skills to be developed
1	<b>Introduction to Business Administration</b>	Business-Definition, Characteristics, Scope Objectives of Business-Economic & Social Perspectives. Commerce-Meaning, Concept, Trade & Aids to trade- Meaning & Definition of the Terms-Administration, Management and Organisation, Functions of Administration	To understand the concept of Business To understand the various perspectives to business To know the various functions of Business Administration
2	<b>Types of Business Organisations</b>	Sole Proprietorship, Partnership Firm, Limited Liability Partnership, Joint Stock Company, Non-Profit Joint Stock Company under Section 25 of the Companies Act, NGO, One Person Company, MNC, MSME Unorganised (informal)v/s Organized sector(registered/incorporated ) Entrepreneurship: Meaning, definition and importance, objectives, skills and qualities required of an entrepreneur,case study of a successful local entrepreneur.	To study the various forms of business organisations To understand the meaning and importance of organized and unorganized sector To introduce the concept of Entrepreneurship as a form of business
3	<b>Business Environment</b>	Meaning of Business Environment Constituents of Business Environment-	To understand the concept of Business Environment

		Economic, Social, Legal, Cultural, Educational, Political, Technological, Natural and international. Impact of New Policies on Business Administration	To study the various aspects of business environment To understand its impact on business
4	<b>Business Promotion and development</b>	Business unit- Promotion, Concept, Stages in business promotion, Business development: Concept, process. Business components to be focused for development like markets, customers and relationships.	To study the various stages in business promotion To understand how to develop a business To study the important factors to be emphasized for Business development

### Teaching Methodology

Unit No.	No. of lectures	Innovative method to be used	Project	Expected Outcome
1.	12	PowerPoint Presentations, YouTube Videos	Assignments, poster presentations	Students will get an idea about the basic concepts and functions in administration of business
2.	14	PowerPoint Presentations, YouTube Videos	Assignments, group projects in promotion of a business, generating new ideas of business	Students will get an idea about how different forms of business organisations can be formed and operated.
3.	10	Lectures of industry experts entrepreneurs and documentaries.	Introducing Case studies to understand the impact of the environment on business	Students will understand the impact that various factors operating in external environment can have on business
4.	12	Videos and lectures by experts	Student group activities,	The development strategies of business can be introduced .

### Recommended Books:

- i. Modern Business Organisation & Management-N.Mishra, Allied Publishers-Mumbai

- ii. Essentials of Business Administration- K. Ashwathappa-Himalaya Publication
- iii. Business Administration-S.C.Saxena-Sahitya Bhavan, Agra
- iv. The Administrative Process-Stephen Robbins
- v. Industrial Administration & Management- J.Batty
- vi. Basu, C. (2017). Business Organisation and Management. McGraw Hill Education.

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## SPECIAL ELECTIVE COURSE – VI

**Subject: Banking and Finance-I (Indian Banking System - I) Course Code: 236(B)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### Objectives:

1. To provide the knowledge about Indian Banking System.
2. To create the awareness about the role of banking in economic development.
3. To provide the knowledge about working of Central Banking in India.
4. To know the functioning of private and public sector banking in India.

UnitNo.	Topic	No. of Lectures	Teaching Method	Proposed skills to be developed
1	Indian Banking Structure : 1.1 Evolution of Banking in India 1.2 Structure of Banking in India 1.3. Role of Banking in Economic Development 1.4. Scheduled Banks and Non-scheduled Banks 1.5 Challenges before Banking in India 1.6 Impact of COVID-19 on Banking Sector in India	10	Lecture, PPT, Group and Panel Discussion, Library Work, Assignments	Understanding the structure of Indian Banking. Analyze the role of Banking in Economic Development
2	Central Banking : 2.1 Definition of 'Central Banking' 2.2 Evolution of Reserve Bank of India 2.3 Functions of Reserve Bank of India 2.4 Present currency	10	Lecture, PPT, Group and Panel Discussion, Library Work,	Understanding about the Central Banking in India

	<p>system in India Understanding of concepts : Bank Rate,Cash Reserve Ratio(C.R.R.), Statutory Liquidity Ratio (S.L.R.), Repo Rate – Reverse Repo Rate</p>		Assignments	
3	<p>Private Banking : 3.1 Meaning and features of Private Banking 3.2 Classification of Private Banking : i) Indian Private Banks – Old and New ii) Foreign Banks 3.3 Role of Private Banking in Economic Development 3.4 Performance of Private Banks in India 3.5 Challenges before Private Sector Banks in India</p>	12	Lecture, PPT, Group and Panel Discussion, Library Work, Assignments, Projects	<p>Understanding of role and performance of Private Banking in India Analyze the past and present</p> <p>challenges before Private Banks in India</p>
4	<p>Public Sector Banking: Definition and Features of Public Sector Banks 4.1 Classification of Public Sector Banks 4.2 4.2.1 State Bank of India – Evolution , Functions and Performance 4.2.2 Nationalised Banks – Social control , Meaning of Nationalisation, Arguments for and against Nationalisation – Merger of the Banks 4.2.3 Regional Rural Banks –</p>	16	Lecture, PPT,  Group and  Panel  Discussion, Library Work,  Assignments,  Projects	<p>Understandingabo  ut Public sector  Banking in India  Analyze the challenges before Public Sector Banks</p>

	Objectives , Functions , Capital, Problems before Regional Rural Banks 4.2.4 Lead Bank Scheme 4.3 Challenges before Public Sector Banks in India			
	Total	48		

References:

1. Deb Joyeeta (2019), 'Indian Banking System', Evince Publishing.
2. Desai Vasant (2007), 'Indian Banking-Nature and Problems', Himalaya Publishing House.
3. Gopinath M.N. (2017), 'Banking Principles and Operations', Snow White Publisher.
4. Joshi, Vasant and other (2002), Managing Indian Banks – The Challenges Ahead, Response Books, New Delhi.
5. Mallik, Chaudhury and Sarkar (2018), 'Indian Banking System- Growth, Challenges and Government Initiatives', Kalpaz Publications.
6. Nararajan and Parameswaran (2007), 'Indian Banking', S. Chand Company Ltd. New Delhi.
7. ShahiUjjwala (2013), 'Banking in India: Past, Present and Future', New Century Publications
8. Trivedi, Chaudhary and other (2015), 'Indian Banking System', RBD Publication, Jaipur.
9. Trivedi I.V. and JatanaRenu (2010), 'Indian Banking System', RBSA Publisher.
10. 'Report on Trend and Progress of Banking in India' 2017-18, 2018-19, 2019-20- Reserve Bank of India

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## SPECIAL ELECTIVE COURSE – VI

**Subject: BUSINESS LAWS AND PRACTICE – I**      **Course Code: 236(C)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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### Objectives of the course:

To develop an understanding of the significant provision of selective Business Law.

To gain the ability of students to address a basic business legal application-oriented issues.

### Depth of the program:

Basic & Fundamental

### Objectives of the Subject:

- To impart the students with the fundamental understanding of important business laws.
- To study & acquaint students an application & overview based knowledge of Business Law.
- To familiar the students with legal Business Environment of India.
- To develop & strengthen students through the legal practical knowledge and their implications on Indian Business organizations.

Unit No.	Unit Title	Contents	Purpose skills to be developments
1	Maharashtra agricultural produce marketing (development and regulations) Act 1963	Introduction, Meaning of Agricultural Produce, Agriculturist, Broker, Buyer, bye-laws, Commission Agent, Director, Coolee, Local Authority, Market Area, Market Committee, Processor, Secretary, Retail sales, State Marketing Board. Establishment of National Integrated Produce Market; Direct marketing, establishment of private market	Students will get the basic knowledge of the MAPM Act 1963. Awareness about Marketing of Agricultural Produce

		and farmer-consumer market and redressal of disputes; Contract Farming Agreement (Sec. 5), Marketing of Agricultural Produce (Sec 6 to 10)	
2	General Insurance	Introduction, Meaning & Characteristics of Insurance, Importance of Insurance, Basic Principles of General Insurance, Contract of Insurance, Type of Insurance, Basic Terms – Insured, Insurer, Premium, Policy subject matter of Insurance, Claim, Proposal. Insurance Interest. Double Insurance and Reinsurance, Meaning of Fire Insurance, Marine Insurance & Miscellaneous Insurance	It will help the students to gain insights of General Insurance
3	Information Technology Act,2000	Evolution of the IT Act, Digital Signature and Electronic Signature, Electronic Governance, Attribution, Acknowledgement and Despatch of Electronic Records, Secure Electronic Records And Secure Electronic Signature Introductions. (Sec 1 to 16)	To provide legal recognition to all transactions conducted through electronic data exchange, electronic communication or other means of e-commerce.
4	The Maharashtra Shops and Establishments (Regulation of Employment and Conditions of Service) Act, 2017	Meaning, Introduction, Registration of Establishments, Opening and Closing Hours, Hours of Work, Interval For Rest, Spread-Over, Wages For Overtime and Weekly Off, Leave With Pay and Payment of Wages, Welfare Provision(Sec 1 to 26)	Understanding the process and methods of Registration, understand the regulation of conditions of work and employment in shops, and various establishments

## Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Online Shows and AV Applications	Project	Expected Outcome
1	12	Cases of MAPM to be Studied. Group Discussion Article Reviews	E-Content on MAPM provided by UGC/University/M OOC etc. to be analyzed. Other open E-Content Internet Sources.	Project report shall be prepared on efficiency & effectiveness of MAPM.	Understanding the actual working of MAPM & its legal applications with benefits to the stakeholders.
2	12	Benefits of Insurance to be discussed in Group. Internet Sources. Discussion on Claim Settlement.	E-Content on General Insurance provided by UGC/University/M OOC etc. to be analyzed.	Project report can be prepared on benefits of General Insurance to the beneficiaries.	Understanding general insurance, the way to minimize various types of risk.
3	12	Internet Sources Cases on Information Technology.	Youtube E-Content Sources. E-Content on Cyber security/IT Act provided by UGC/University/M OOC etc. to be analyzed.	Project report can be prepared on Cyber Security Measures & Preventions.	Use of online resources carefully. Measures & presentation while using online platform. Awareness about cyber security etc.
4	12	Benefits of Shop Act to be discussed in Group. Internet Sources. Discussion on Procedure to obtain permission under shopact.	YouTube E-Content Sources. E-Content on Shop Act provided by UGC/University/M OOC etc. to be analyzed.	Project report can be prepared on Procedure & documents required to start small business under shop act.	Make students aware about shop act registration to small business owners. Benefits of shop Act to people etc.

### References

Sr. No.	Title of the Book	Author/s	Publication
1	Labour Laws	Taxmann	Taxmann
2	Labour & Industrial Laws	S N Misra	Central Law Publication
3	General Insurance	Dr. L P Gupta	Dr. L P Gupta

4	Information Technology Act, 2000	Sachdeva Editorial Unit	Sachdeva Law Publishers
5	The Maharashtra Shops and Establishments Act, 2017	S.D.Puri	--
6	Labour and Industrial Laws	M.N. Mishra	Central Publications
7	Business & Commercial Laws	Sen & Mitra	--
8	Business Law for Management	Bulchandani K.R.	--
9	Information Technology Act, 2000	--	Government of India.

### Practical for Semester – III

Topic	Mode of Practical
Marketing of Agricultural Produce	Overview & Presentation can be taken.
Insurance Documents and Policy Terms and Conditions	Group Discussion & Survey can be conducted.
Electronic Governance	Online data analysis with library sources.
Registration of Establishments	Applications to studied.

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## SPECIAL ELECTIVE COURSE – VI

### Subject: Co-operation and Rural Development Special Paper-I

Course Code: 236(D)

Total Credits: 04 (Theory 03 + Practical 01=04)

#### 1. Objectives of the Course:

- a. .To acquaint students with the Concept of Co-operation
- b. .To acquaint students with Co-operative legislation
- c. .To create awareness regarding the role of state government in development of Co-operative sector in Maharashtra
- d. : To acquaint students with the role of Social reformers in rural development
- e. : To understand the role of “Panchayat Raj” in rural development
- f. : To make the students aware about Globalization and its effects on rural development

Unit No.	Unit Title	Contents	Skills to be developed
1	Rural Development	1.1 Definition, Meaning, Scope and Objectives 1.2 Significance of Rural Development 1.3 Role of Co-operative Movement in Rural Development 1.4 Approaches of Rural Development – Individual, Group and Mass Approach	1. To understand the meaning of rural development and its significance 2. To understand the role co-operative movement played in rural development.
2	Thoughts and Work of Social Reformers in Rural Development	2.1 Mahatma Jotiba Phule 2.2 Chhatrapati Shahu Maharaj 2.3 Mahatma Gandhi 2.4 Vaikunthlal Mehta 2.5 Padmashree Vikhe Patil 2.6 Dr. Dhananjayrao Gadgil 2.7 Pandit Dindayal Upadhyay	1. To be acquainted with the thoughts of all the great thinkers
3.	Rural Development and Panchayat Raj System	3.1 Concept, Structure and Importance 3.2 Important provisions of Panchayat Raj Act 3.3 Effects of Panchayat Raj System on Rural Development 3.4 Limitations of Panchayat Raj	1. To know the importance of “Panchayat Raj. 2. To understand the structure of “Panchayat Raj.” 3. To know its limitations



4.	Rural Development – People’s Participation and Impact of Globalization	<p>4.1 Concept and Importance of People’s Participation</p> <p>4.2 Mahatma Gandhi National Rural Employment Guarantee Scheme</p> <p>4.3 Development of Model Villages – Ralegan siddhi -Hivre Bazar Bhagirath Gramvikas Pratishtan, Zarap Pani Foundation Naam Foundation</p> <p>4.4 Globalization – Concept, Merits and Demerits</p> <p>4.5 Impact of Globalization on Rural Development</p>	1. To know and realize the importance of people’s participation in rural development
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**Teaching Methodology:**

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Lecture method & class room discussion Visit to nearby Gram Panchayat.	-----	Report writing on the visit made to Gram Panchayat	Enhanced understanding of the village development
2	12	Class room presentations by the students, Group discussion	AV available on the life of all the great thinkers on ‘You tube’	Writing brief report on the contributions made by all the great thinkers.	Enhanced understanding of the work done by great thinkers
3	12	Class room lecture	-----	-----	Better understanding about rural development and Panchayat raj
4	12	Visit to any of the ongoing projects mentioned in contents	Films available on internet	Writing a report on the project visited	Enhanced level of knowledge

**References:**

- 1) G.S.Kamat –Cases in Co-operative management
- 2) N.L.Ghorpade- Co-operation and Rural Development
- 3) K.K.Taimani- Co-operative Organization and Management
- 4) G.S.Kamat – New Dimensions of Co-operative Management
- 5) Vasant Desai – Fundamentals of Rural Development
- 6) Dr. Dhiraj Zalte &Others –Theory & Practice of Co-operation, Prashant Publication
- 7) V.M.Dandekar and Rath – Poverty in India
- 8) Dr. P.R.Dubhashi – Rural Development and Administration in India
- 9) V.Reddy – Rural Development in India
- 10) S.K. Gopal – Co-operative Farming in India
- 11) B. Mukharji – Community Development
- 12) I.C.A State and C-operative Movement
- 13) <https://www.bhagirathgram.org/>



## SPECIAL ELECTIVE COURSE – VI

**Subject: Cost and Works Accounting -I(BASICS OF COST ACCOUNTING)**

**Course Code: 236(E)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### **Objectives:**

- 1. To prepare learners to know and understand the basic concepts of cost.**
- 2. To understand the elements of cost.**
- 3. To enable students to prepare a cost sheet.**
- 4. To facilitate the learners to understand, develop and apply the techniques of inventory control.**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Skills to be developed</b>
1	Basics of Cost Accounting	a) Concept of Cost, Costing, Cost Accounting and Cost Accountancy. b) Limitations of Financial Accounting. c) Origin of Costing. d) Objectives of Cost Accounting. e) Advantages & Limitations of Costing. f) Difference between Financial Accounting and Cost Accounting. g) Cost Units and Cost Centers.  h) Role of a Cost accountant in an organisation	1. To understand the concept of cost, costing and cost accounting. 2. To trace the cost to cost centres and cost units. 3. To identify role of cost accountant in an organisation
2	Elements of Cost and Cost Sheet	a) Material, Labour and other Expenses. b) Classification of Costs. c) Preparation of Cost Sheet, Tender, Quotation and Estimates.	1. To Understand different elements of cost 2. To be able to prepare a cost sheet
3	Purchase Procedure	a) Need and Essentials of Material Control. b) Functions of the Purchase Department. c) Purchase Procedure. d) Purchase Documentation.	To understand the purchase procedure and its documentation

4	Inventory Control	<p>a) Methods of Inventory control</p> <p>a. Stock Levels.</p> <p>b. Economic Order Quantity (EOQ).</p> <p>c. ABC analysis</p> <p>d. Perpetual and Periodic Inventory Control</p> <p>e. Physical verification</p> <p>b) Inventory Turnover Ratio</p>	<p>. To understand the different methods of inventory control.</p> <p>. To calculate EOQ , stock levels and inventory ratio</p>
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### Teaching Methodology

Unit No	Total Lectures	Innovative Methods to be used	Films Shows and AV Applications	Practical	Expected Outcome
1	16	PowerPoint Presentations, Group discussions	YouTube Lectures and relevant multimedia compact discs(CD)	Poster Presentation	To remember and understand basic concept of cost accounting. Development of an overall outlook of Cost Accounting
2.	16	PPT, Quiz		Visit small industries to develop an understanding of various cost inputs	Ability to prepare a cost sheet
3	10	Invite a purchase manager in the classroom to provide practical knowledge about Purchase procedures and their documentation.		PowerPoint Presentations	1)Ability to understand which procedures are used for purchasing the material 2)Understand the documentation for purchase procedures
4	06	Invite a storekeeper in the classroom to provide practical knowledge about		Visit small units and understand which	Understanding methods used for controlling the

		inventory control		methods are used to control the inventory	inventory
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### Methods of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add-On Course
Unit I	Multiple Choice Questions, Written Test, Internal Examination, PowerPoint Presentations, Orals, Assignments, Tutorials etc.	SPPU	Two industrial visits and subsequently reports on the visits.
Unit II			
Unit III			
Unit IV			

### References

Sr. No	Titles of the Book	Names of Authors	Names of Publisher	Place
01	Cost Accounting-Principles & Practices	Jawahar Lal & Seema Shrivastava	Tata Mcgraw Hill	New Delhi
02	Advanced Cost Accounting And Cost Systems	Ravi M Kishor:	Taxmann	New Delhi
03	Cost Accounting Theory And Problems	S. N. Maheshwari	Mittal Shree Mahavir Book Depot.	New Delhi
04	Advanced Cost Accounting	Jain and Narang	Kalyani Publication	New Delhi
05.	Horngren's Cost Accounting-A Managerial Emphasis	Srikant M Datar & Madhav V Rajan	Pearson	Noida Up
06	Cost Accounting-Principles & Practices	Dr. M.N. Arora	Vikas Publishing House,	New Delhi
07	Advanced Cost Accounting	Dr. D. M. Gujarathi	Idol Publication	Pune
08	Advanced Cost Accounting	Dr. Kishor. M. Jagtap	Tech-Max Publication	Pune
09	Cost Accounting Principles And Practice	Jain and Narang	Kalyani Publication	New Delhi
10	Principles and Practice of Cost Accounting	N.K Prasad	Booksyndicate Private Ltd	Kolkata
11	Cost Accounting: Methods and Problems	B.K.Bhar	Academic Publications	Kolkata

### Web References

Sr. No	Lectures	Films	PPTs	Articles	Others
For	Guest Lectures by	YouTube	Relevant	Articles from the Professional	<a href="https://ic">https://ic</a>

all the units.	Field Personnel such as working executives from industries and of practising Cost and Management Accountants.	films showing the working of different industries .	powerpoint presentations are available on all these topics.	Journals such as The Management Accountant, The Chartered Accountant, The Chartered Secretary, The Institute of Chartered Financial Analyst of India	<a href="http://mai.in">mai.in</a>  <a href="http://www.globalcma.in">www.globalcma.in</a>  <a href="http://eclm.unpune.ac.in">eclm.unpune.ac.in</a>
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**Notes: The breakup of marks in the Examination will be as follows:**

1. 50 % of the Total marks are assigned for Theory purpose whereas rest 50 % of the total marks are allotted for Numerical Problems.
2. Numerical Problems will be of Simple nature only.
3. **Areas Of Practical Problems:**
  - Preparation of Cost Sheet, Tender, Quotation and Estimates.
  - EOQ and Stock level.
  - Inventory Turnover Ratios.

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## SPECIAL ELECTIVE COURSE – VI

**Subject: Business Statistics**

**Course Code: 236(F)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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### Preamble to the syllabus:

Tools and techniques learned in Statistics give a precise way of formulating and analyzing a problem and to make logical conclusions. Concepts and tools introduced in this course are useful to students for higher studies and career in any branch of Economics, Commerce and Management. Professionals working in these fields, wishing to upgrade their knowledge, will also benefit. The stress of the course will be on building the concepts and their applications.

In modern times, Statistics is viewed not as a mere device for collecting numerical data but as a means of developing some techniques for their handling and analysis and drawing valid inferences from them. Statistics provides tools for making decisions when conditions of uncertainty prevail. So it is very useful in various fields like agriculture, business, management, economics, finance, insurance, education, biotechnology and medical science etc.

**Depth of the Course – Basic Knowledge of Elementary Statistics**

### Objective of the Course

1. To understand and Master the concepts, techniques & applications of Statistical Methods.
2. To develop the skills of solving real life problems using Statistical Methods.
3. To make students to understand the art of applying statistical techniques to solve some real life problems.
4. To gain knowledge of Statistical Computations.

Unit No.	Unit Title	Contents	Purpose/Skills to be developed
1	<b>Theory of Attributes (up to order three only)</b>	Introduction, Classification, Notation, dichotomy, types of classes, Order of a class, dot operator to find relation between class frequency (up to order three), Fundamental set of class frequencies, Consistency up to three attributes, Independence and Association of two attributes, Yule's Coefficient of association, example and problems.	. To understand the concept of attributes, independence of attributes and association of attributes . To apply the concept of attributes to real life problems.

2	<b>Multiple Regression, Multiple and Partial Correlation</b>	Introduction, Multiple Regression, Yule's Notation, Statement of equation of plane of regression of $X_1$ on $X_2$ and $X_3$ . Properties of residuals, Coefficients of multiple and partial correlation, Multiple correlation in terms total and partial correlation, Coefficient of regression, Standard Error of Estimate, Advantages and limitations of multiple Correlation Analysis, . example and problems	<ul style="list-style-type: none"> <li>. To understand the multiple and partial correlation.</li> <li>. To understand the concept of multiple regression.</li> <li>. To apply the concept of multiple regression and multiple and partial correlation to real life problems.</li> </ul>
3	<b>Vital Statistics</b>	Introduction, Methods of collecting vital Statistics, Mortality rates : CDR, ASDR, STDR (direct method and indirect method), Fertility rates: CBR, ASFR, TFR,GFR Population Growth rate: GRR and NRR, example and problems	<ul style="list-style-type: none"> <li>. To understand the concept of vital statistics and different methods of collecting vital statistics.</li> <li>. To understand the different types of mortality, fertility and population growth rates.</li> <li>. Apply concepts of vital statistics to real life problems.</li> </ul>
4	<b>Life Tables</b>	Introduction, Construction of life table, functions ( $l_x, d_x, L_x, p_x, q_x, e_x, T_x$ ) and their interpretation, Expectation of life, example and problems.	<ul style="list-style-type: none"> <li>. To understand the concept and construction of life tables.</li> <li>. To compute life expectancy and applications of life table in insurance.</li> </ul>

#### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	14	ICT	NA	NA	Students will be able to understand and apply concepts attributes to real world problems.
2	16	ICT	NA	NA	Students will be able calculate multiple regression, multiple correlation and partial correlation coefficients. Students will be able to fit real life data to regression plane and forecasting.
3	10	ICT	NA	NA	Students will be able to calculate different type of mortality, fertility and population growth rates for real world data and interpret it.
4	08	ICT	NA	NA	Students will be able to construct life tables.



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## SPECIAL ELECTIVE COURSE – VI

**Subject: Business Entrepreneurship (Special Paper-I)**

**Course Code: 236(G)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### Objectives of the course

- To understand the concepts in Business Entrepreneurship and its aspects.
- To make students aware about the entrepreneur and entrepreneurship.
- To study the new age of entrepreneur and to know in details of entrepreneurship.
- To understand the creativity and innovation required or necessary in the entrepreneurship.
- To study the types of ethics and society responsibilities are followed in the conventional and corporate sector in the new edge followed by the rules and regulations.
- To familiarize the students with practical survey or through project work will be able to understand the concepts in the subject thoroughly.
- To create entrepreneurial encouragement through the study of successful entrepreneurs.

Unit No.	Unit Title	Contents	Skills to be developed
1	Entrepreneur and Entrepreneurship	<b>Definition, Meaning- Functions of an Entrepreneur.</b> <b>Need and Importance of Entrepreneurship-</b> Problem of Unemployment, Importance of Wealth Creation, Enterprise V/s Entrepreneurship – Self Employment V/s Entrepreneurship, Entrepreneurial Competencies, Qualities, Kakinada Experiment	To understand the concept Entrepreneur and Entrepreneurship. Students should be able to differentiate and understand the difference between Enterprise and Entrepreneurship. To equip the students with various aspects of entrepreneurship, their competencies like initiative, how to grab the opportunities etc. and qualities with examples.
2	New Age Entrepreneur	<b>The Internet Entrepreneur:</b> Definition, Advantages, How to Become a Successful Internet Entrepreneur (Example: Snap deal). <b>Environmental Entrepreneurs</b>	Students have to develop the ability to involve in positive thinking. Students should be able to understand the critical issues

		<p><b>(E2)-</b> Concept, Importance (Example: Help V/s Green, Ecotemme Green Nerdes, Sustain Earth)</p> <p><b>Social Entrepreneurs-</b> Meaning and Concept- goals of Social Entrepreneurs, Characteristics (Examples: DeAsra Foundation, Aaple Ghar).</p> <p><b>Artistic Entrepreneurs-</b>Concept, Things Artists and Artistic Entrepreneurs Have in Common.</p> <p><b>Motivated Entrepreneurs-</b> Concept and Meaning, ways for entrepreneurs to stay motivated.</p> <p><b>Failed Entrepreneurship-</b>Meaning and Reasons for Failed Entrepreneurship.</p>	<p>affecting the economy and environment.</p> <p>The students should be able to modernize tactics to solving social or environmental problems.</p> <p>To develop students and involve and engages them in new forms of entrepreneurship in the rightest of the world. Students should be able to find the ways to stay motivated as an entrepreneur.</p>
3	Creativity and Innovation	<p><b>Creativity-</b> Meaning, Creativity Process, Techniques and Tools of Creativity.</p> <p><b>Innovation-</b> Meaning, Sources of Innovation- Peter Drucker's Principles of Innovation- Do's and Don'ts of Innovation.</p>	<p>Acquaint knowledge and skills of the entrepreneurial process, it shows that creative thinking of an entrepreneur.</p> <p>Understand the concept of innovation that how it refers to develop effective ideas for successful entrepreneurship in the global edge.</p>
4	Business Ethics and Social Responsibility of Business	<p><b>Business Ethics and Social Responsibility of Business.</b></p> <p>Business goals- Social Responsibility-Business Ethics- Social Responsibility Towards Their Stakeholders: Investors-Owners- Employees-Government and Society at Large. Leadership by Example. Code of Ethics- Ethical Structure- Social Audit. Brief Introduction to Corporate Governance.</p>	<p>Students should be able to understand the business ethics and social responsibility of business w.r.t. practices in entrepreneurship (e.g. corruption, harmful behaviour to the society).</p>

#### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Group discussion and case	Related Videos and PPTs	Distribute personal and group project on	Understanding the difference in Entrepreneur and

		studies		new business creation.	Entrepreneurship.
2	12	Collecting the required information on the new age entrepreneur	Related Videos and PPTs	Ask students to prepare a detailed report on new age entrepreneur.	Understanding the new age entrepreneur and will learn each.
3	12	Business planning models (Product Development, Market Research)	Biographical videos or CDs of entrepreneurs	Assign small business models, product or project(s) to students to understand them with the 360 degree of the business.	Students will be able to do the SWOT analysis of their business model.
4	12	Conducting survey and collecting information of practices followed by the nearby organizations w.r.t. business ethics and social responsibility.	Annual Reports of the companies. Videos, PPTs	Assign small projects in individual or in group.	Students will practically study the practices followed by the organizations.

**References:-**

1. Business Environment, Francis Cherunilam, Himalaya Publishing House, New Delhi.
2. Entrepreneurship Development, Khanna S.S, S. Chand, New Delhi.
3. Entrepreneurship Development, Gupta, Shrinivasan, S. Chand, New Delhi
4. Dynamics of Entrepreneurship, Desai Vasant, Himalaya Publishing House, New Delhi
5. Indian Economy,, Ruddar Datt, K.P.M. Sundharam, S. Chand, New Delhi
6. Udyog,Udyog Sanchalaya, Mumbai
7. Vyawasaya Udyojagata, Dr. S. L. Shiragave, Success Publication, Pune

## **SPECIAL ELECTIVE COURSE – VI**

**Subject: Marketing Management**

**Course Code: 236(H)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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### **Preamble**

As the commercial scenario has totally changed, the need for advanced concepts has increased. Education system also has to change with the rapidly transforming times. Education system is trying to familiarize the students of commerce with advanced concepts in the field so that they are aware of the changing picture.

Marketing Management is an important subject and has been structured to create awareness of the Marketing Management by giving proper insight to the basics of Marketing, so that the foundation of this subject is strengthened for further studies in Marketing.

From this point of view Savitribai Phule Pune University has introduced Choice Based Credit System of course structure. This system will develop the logical independent thinking for accepting the challenges of the changing Business world.

### **Objective of the Course**

1. To introduce the concept of Marketing Management.
2. To give the students the basic knowledge of Marketing Management to be a successful modern marketer.
3. To inculcate knowledge of various aspects of marketing management through practical approach.
4. To interpret the issues in marketing and their solutions by using relevant theories of marketing management.

#### **Depth of the Program - Fundamental Knowledge of Marketing Management**

##### **Objectives of the Program**

- To create awareness and impart knowledge about the basics of Marketing Management which is the basic foundation of Marketing subject.
- To orient the students in Marketing Strategy and Consumer Behaviour.
- To help students understand how to craft Marketing Plan which help the organisation outline their marketing goals and objectives.
- To enable students to apply this knowledge in practicality by enhancing their skills in the field of Marketing.

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose Skills To Be Developed</b>
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1	<b>Elements of Marketing Management</b>	<b>1.1</b> Introduction <b>1.2</b> Meaning of Marketing Management <b>1.3</b> Nature & Scope of Marketing Management <b>1.4</b> Features of Marketing Management <b>1.5</b> Functions of Marketing Management <b>1.6</b> Components of Marketing Management	To give the students the basic knowledge of Marketing Management.
		<b>1.7</b> Problems of Marketing Management <b>1.8</b> Marketing Management Philosophy <b>1.9</b> Marketing Characteristics in Indian Context <b>1.10</b> Marketing Management Process	
2	<b>Marketing Strategy and Consumer Behaviour</b>	<b>2.1 Marketing Strategy</b> <b>2.1.1</b> Introduction <b>2.1.2</b> Concept of Strategy <b>2.1.3</b> Meaning of Marketing Strategy <b>2.1.4</b> Significance of Marketing Strategy <b>2.1.5</b> Aim of Marketing Strategy <b>2.1.6</b> Marketing Strategy Formulation <b>2.1.7</b> Bases of Formulating Marketing Strategy <b>2.1.8</b> Types of Marketing Strategy <b>2.2 Consumer Behaviour</b> <b>2.2.1</b> Introduction <b>2.2.2</b> Meaning of Consumer Behaviour <b>2.2.3</b> Definition of Consumer <b>2.2.4</b> Scope of Consumer Behaviour <b>2.2.5</b> Determinants of Consumer Behaviour <b>2.2.6</b> Concept of Motivation <b>2.2.7</b> Theories of Motivation <b>2.2.8</b> Multivariable Models of Consumer Behaviour <b>2.2.9</b> Buying Motives & Consumer Importance of Buying Motives <b>2.2.10</b> Monadic Models of Consumer	To develop the awareness amongst the students about how marketing strategy plays a vital role in making today's customers want to buy the products and services.

		Behaviour	
3	<b>Marketing Planning</b>	<b>3.1</b> Introduction <b>3.2</b> Meaning of Marketing Planning <b>3.3</b> Definition of Marketing Planning <b>3.4</b> Nature of Marketing Planning <b>3.5</b> Scope of Marketing Planning <b>3.6</b> Elements of Marketing Planning <b>3.7</b> Importance of Marketing Planning <b>3.8</b> Types Marketing Planning <b>3.9</b> Principles behind Successful Planning <b>3.10</b> Steps in Marketing Planning Process <b>3.11</b> Relevance in Marketing Planning <b>3.12</b> Structure of Marketing Plan <b>3.13</b> Constraints to Effective Marketing Planning	To enable the students to plan and make the best possible utilization of all the human and physical resources so that pre-determined marketing objectives of the firm can be achieved.
4	<b>Marketing Research</b>	<b>4.1</b> Introduction <b>4.2</b> Meaning of Marketing Research <b>4.3</b> Definition of Marketing Research <b>4.4</b> Scope of Marketing Research <b>4.5</b> Role of Marketing Research <b>4.6</b> Marketing Research Agencies <b>4.7</b> Marketing Information Vs. Marketing Research <b>4.8</b> Objectives of Marketing Research <b>4.9</b> Marketing Research Procedure <b>4.10</b> Problem Definition <b>4.11</b> Research Design <b>4.12</b> Data Collection <b>4.13</b> Sampling and Sampling Designs <b>4.14</b> Probability Sampling Techniques <b>4.15</b> Data Analysis <b>4.16</b> Method of Reporting Research Findings	To make the students able to explain value of Market Research and its impact in decision making.

## Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	14	Power Point Presentation, Article Review, Survey Analysis	AV Application	Market Survey	Student will get acquainted with the basics of Marketing Management subject
2	07	Group Discussion, Quiz, Poster Making	Short Film about Buyer Behaviour, AV Application	Interviews of the Buyer	It will help students to know the preferences, likes and dislikes of the consumer which lead to the further modernization of the sales strategies by marketer
3	14	Power Point Presentation, Group Discussion, Survey Analysis	AV Application	Market Survey, Interviews of Seller	It will help them to implement this knowledge practical situations by enhancing their skills in the field of Marketing.
4	13	Power Point Presentation, Group Discussion, Field Visit	Short Film, AV Application	Market Survey, Interviews of Marketing Manager or Head	To enable the students to study the effect of external environment on decision- making of the firm.

## Methods of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Quiz, Group Discussion	Examination	Certificate Course in Marketing Management
Unit – II	Practical, Presentation	Examination	Short Course in Sales & Marketing
Unit - III	Presentation, Group Discussion	Examination	E-Learning Training Course
Unit – IV	Project, Presentation	Examination	Marketing Research & Consumer Behaviour

## References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Marketing Management	Philip Kotler	Pearson Publication	
2	Marketing Management	Rajan Saxena	McGraw Hill Education	
3	Principles of Marketing	Philip Kotler	Pearson Publication	
4	Marketing Planning & Strategy	Subhash Jain & George Haley	Cengage Learning India Pvt. Ltd	
5	Marketing Strategy	Anil Mishra & Amit Kumar Mishra	Excel Books	
6	Consumer Behaviour : Insight from Indian Market	Ramanuj Muzumdar	PHI Learning Pvt. ltd. (2009)	
7	Retail Management	Gibson Vedamani	Jayco Publication	
8	Marketing Management	V. S. Ramaswamy & S. Namakumari	Macmillan Publication	
9	Marketing Research	S. L. Gupta	Excel Books India, 2004	
10	Marketing Research	Naresh K. Malhotra	Pearson Publication	

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## SPECIAL ELECTIVE COURSE – VI

**Subject: Agricultural and Industrial Economics**

**Course Code: 236(I)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### Objectives:

1. To understand the basic concepts of Agricultural Economics.
2. To impart adequate knowledge and analytical skills in the field of agricultural economics issues, and enhance expertise in improving the performance.
3. To understand the basic concepts of Agricultural Economics.
4. To expose the students to the concept, significance and uses of Industrial Economics.

**Depth of the program – Fundamental Knowledge.**

Unit No.	Unit Title	Content	Purpose skills to be developed
1	<b>Fundamentals of Agricultural Economics</b>	1.1 Definition, Nature and Scope of Agricultural Economics 1.2 Importance of Agriculture in Indian Economy 1.3 Transition of Agricultural Sector 1.4 Theories of Agricultural Development (Schultz, Mellor)	<ul style="list-style-type: none"><li>▪ To understand the Basic Concept of Agricultural Economics.</li><li>▪ To make the students know about the Place of Agriculture sector in the Indian Economy.</li><li>▪ To impart knowledge about Theories of agricultural development</li></ul>
2	<b>Economics of Agricultural Production</b>	2.1 Basic Concepts in Agricultural Production, 2.2 Agricultural Inputs/ Factors of Production 2.3 Price Behaviour in Agricultural Product, Causes of Price Fluctuation 2.4 Trends in Wholesale Price Index of Food Grains & Commercial Crops 2.5 Trade Cycle in Agriculture: Cobweb Theory 2.6 Large and Small Size of Firm-Advantages & Disadvantages	<ul style="list-style-type: none"><li>▪ To understand the Basic Concept of Agricultural Production Economics.</li><li>▪ To make the students know about various Price Concept of Agricultural Economics</li></ul>
3	<b>Introduction of Industrial Economics</b>	3.1 Definition, Meaning, Nature, Scope and Importance of Industrial Economics. 3.2 Scope and Significance of Industrial Economics 3.3 The Concept of Plant, Firm and Industry.	<ul style="list-style-type: none"><li>▪ To understand the Basic Concept of Industrial Economics.</li><li>▪ Ability to compare Plant, Firm and Industry</li><li>▪ To make the students know about the concept of the</li></ul>

		3.4 Concepts of Private Sector, Large, Medium & Small Scale Industries	various sector in Industrial Economics.
4	<b>Location of Industry</b>	4.1 Factors Affecting the Location of Industries 4.2 Theories of the location of Industries-Weber and Florence. 4.3 Industrial Imbalance, Causes and Measures.	<ul style="list-style-type: none"> <li>▪ Assess the factors affecting on the location of Industries &amp; students know about the Theories of Industrial Location</li> </ul>

### Teaching Methodology:

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project/ Practical	Expected Outcome
1	12	Lecture, PPT/ Group Discussion, Library, Problem solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication- SWF E-Content	<ul style="list-style-type: none"> <li>▪ Evaluate the place of Agriculture Sector in the Indian Economy in Present Era.</li> </ul>	<p>After completing this topic , the student will be able to understand</p> <ul style="list-style-type: none"> <li>▪ The Definition, scope, Nature and Scope of Agricultural Economics.</li> <li>▪ Place of the agriculture sector in Indian Economy.</li> <li>▪ Different Theories of agricultural development</li> </ul>
2	12	Lecture, PPT/ Group Discussion, Library, Problem solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication- SWF E-Content	<ul style="list-style-type: none"> <li>▪ Sector one Agricultural produce and list out inputs and outputs of that produce.</li> <li>▪ Analyse the wholesale price Index of Agriculture selected Agricultural Produce.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Analyse Trade Cycle in Agriculture</li> <li>▪ The Basic Concept of Agricultural Production Economics.</li> <li>▪ Price Concept of Agricultural Economics</li> </ul>
3	12	Lecture, PPT/ Group Discussion, Library, Problem solving based learning,	Relevant videos, Consortium for Educational Communication- SWF E-	<ul style="list-style-type: none"> <li>▪ Evaluate the roll of Public and Privet sector in Indian Economy.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Understand the Basic Concept of Industrial Economics.</li> <li>▪ Ability to compare Plant, Firm and Industry</li> </ul>

		Case study, Jigsaw reading, Practical based learning	Content		<ul style="list-style-type: none"> <li>▪ To make the students know about the concept of various sector in Industrial Economics.</li> <li>▪ The role and importance of industrial sector vis-à-vis public and private enterprises in the economic development of India.</li> </ul>
4	12	Lecture, PPT/ Group Discussion, Library, Problem solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication- SWF E-Content	<ul style="list-style-type: none"> <li>▪ Select one firm in your area and Analyse the factor affecting on localising of that firm</li> </ul>	<ul style="list-style-type: none"> <li>▪ To understand the factors affecting on the location of Industries</li> <li>▪ Analyse Theories of Industrial Location</li> </ul>

**References:**

1. Raju, V. T. Rao VS. (2017) Economic of Farm Production and Management, Oxford & Ibh, New Delhi.
2. Misra S.K. & V.K.Puri, (2017) Indian Economy, Himalaya Publication house Mumbai.
3. Kavimandan Vijay, (2009) KrushiArthshastra, Shri Mangesh Prakshan, Nagpur.
4. Gardner B.L.& Rausser G.C. (2001). Handbook of Agricultural Economics. Vol. I. Agricultural Production. Elsevier
5. Kavimandan Vijay, Krush iArthshastra.
6. Ramesh Singh, Indian Economy, Tata Mc-Graw Hill, Publication
7. Annual Reports, Department of Agriculture, Govt. of India,.
8. Barthwal R.R (2204) Industrial Economics Introductory Text Book, New Age International Limited, Kanpur

**Suggested Web references:**

<https://www.youtube.com/user/cecedusat>

<https://www.swayamprabha.gov.in/>

[http://14.139.13.96:8080/lectures.aspx?pno=Paper05\(O\)-UGC CEC E Contain on Agricultural Economics](http://14.139.13.96:8080/lectures.aspx?pno=Paper05(O)-UGC CEC E Contain on Agricultural Economics)

[http://14.139.13.96:8080/lectures.aspx?pno=Paper06\(O\) -UGC CEC E Contain on Industrial Economics](http://14.139.13.96:8080/lectures.aspx?pno=Paper06(O) -UGC CEC E Contain on Industrial Economics)

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## SPECIAL ELECTIVE COURSE – VI

**Subject: Defense Budgeting, Finance and Management-I**

**Course Code: 236(J)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### Objectives

1. To acquaint various concepts in Defence Economics
2. To create awareness different forms of Defence Programming and Budgets
3. To make the students aware about the structure of India's Defence budget
4. To acquire knowledge of different challenges of India's Defence Management

Unit No.	Topic	No. of Lectures	Teaching Method	posed Skill to be Developed
I	<b>Budgets : Introduction and Background</b> 1.1 Introduction 1.2 Parliamentary Budgets 1.3 Union Budget : India 1.4 Form of the Central Budget	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Field Visit	Students will be able to learn structure and trends in India's defense budget
II	<b>Defense Budgets</b> 2.1 Objectives of Defense Budget 2.2 Types of Budgets 2.3 Basic concepts of Planning, Programming and Budgeting System	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Field Visit	Students will be able to learn importance of defense planning and performance budget
III	<b>Structure of Indian Defense</b> 3.1 Defense v/s Development : a debate over expenditure 3.2 Role of DPSU's and Private Sector in India's Defense 3.3 Role of Ministry of Defense : 3.4 Role of DRDO in Indian Defense	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Field Visit	Students will be able to learn the role of public and private sector in India's defense production

<b>IV</b>	<b>Defense Planning and Management in India</b> 4.1 Defense Management : Meaning, Concept, Nature and Scope 4.2 Application of Management in the Armed Forces 4.3 Industrial Management and Military Management 4.4 Role of Leadership in Defense Management 4.5 Principles of Management	<b>12</b>	Lecture, PPT, Group Discussion, Panel Discussion, Library Work, Assignment, Field Visit	Students will be able to learn importance of leadership in defense management and industrial management.
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**References:**

1. John Downey (1987) , Management in the armed Forces, EBD Educational Pvt Ltd, Dehradun, India
2. Andre Beaufre(1974), Strategy for Tomorrow, Mac Donald Press, London
3. Defence Management, An Annual Journal of College of Defence Managemnet, Secundarbad
4. Mishra H. B. (2000), Defence Management in India, Author Press, New Delhi
5. Venkateshwaran A.L. (1967) , Defence Organization in India, Publication Division, Governemnt of India, New Delhi
6. Ron Mathews(1989), Defence Production in India, ABC, New Delhi
7. Raju G C Thomas(1978), The Defence of India: A Budgetary Perspective of Strategy and politics, MacMillan Publication, New Delhi
8. Sam-C-Sarekesian (1972), The Military Industrial Complex-A Reassessment, Sage publication
9. Maj. Gen Pratap Narain (Retd ) (1998), Indian Arms Bazar, Shilpa Publication, New Delhi,
10. Annual reports of The Ministry of Defence, Government of India
11. Brig. Pramod Sasius (2000), Military Logistics-Third Dimensions, Manaspublication, New Delhi,
12. NISDA Security Conference 8-10<sup>th</sup> October 2006 “Conceptualizing Impediments to National Security” , PROGRAMME BUDGETTING FOR OPTIMISING DEFENCE ALLOCATIONS, Air Marshal (Retd.) Dr. S. Kulkarni

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## SPECIAL ELECTIVE COURSE – VI

**Subject: Insurance Transport and Tourism - I-A(Insurance)**

**Course Code: 236(K)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### Objectives

1. To acquaint the students with basic concepts in insurance.
2. To develop a proper understanding to study various facets of insurance.
3. To make aware about the role and importance of insurance.
4. To understand the legislation for insurance business in India.

Unit No	Topic	No. of Lectures	Teaching Method	Proposed skills to be developed
1	<b>An Introduction to Life Insurance</b> <b>1.1 Life Insurance Business:</b> Components, Human Life Value Approach, Mutuality, Principle of Risk Pooling, Life Insurance Contract, Determinants of Risk Premium. <b>1.2 Life Insurance Plans:</b> <b>1.2.1 Traditional-</b> Term Plans, Whole Life Insurance, Endowment Assurance, Dividend Method of Profit Participation Purpose of plans, Riders in plan - Introduction, Forms and procedures. <b>1.2.2 Non Traditional -</b> Unit Linked Insurance Plan (ULIP) <b>1.2.3 Difference -</b> Traditional and Non Traditional Plan	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Visit to LIC Institutions	Understanding the concept and products of insurance
2	<b>Policy Conditions of Life Insurance</b> <b>2.1 Insurance Document:</b> Proposal form, Policy form, Cover note, Certificate of Insurance, Endorsement, Co-insurance and Renewal receipt, Procedure of taking Life Insurance Policy. <b>2.2 Settlement:</b> Settlement of Claim on Maturity of Policy, Death of Policy	10	Lecture, PPT, Group Discussion, Library Work, Assignments	Understanding The conditions and settlement structure

	holder,			
3	<b>General Insurance:</b> <b>3.1</b> Origin and growth of General Insurance <b>3.2</b> Principles of General Insurance <b>3.3</b> Types of General Insurance- Motor, Accident Insurance, Health, Crop, etc. <b>3.4</b> Laws relating to General Insurance Organization and Management of General Insurance in India <b>3.5</b> Study of Risk factors, Insurance claims <b>3.6</b> Effect of Globalization on Insurance Sector	12	Lecture, PPT, Group Discussion, Library Work, Assignments, tests.	Understanding growth of GIC and effect of globalization
4	<b>Insurance Sector legislation and Regulatory Authority</b> <b>4.1 Insurance Act:</b> Insurance Act of 1938, L. I. C. Act of 1956 and G. I. C. Act of 1972 – objectives, features and provisions. <b>4.2 Fundamentals of Agency Law :</b> Procedure of becoming an agent, Code of conduct, Unfair practices and cancellation of license <b>4.3 Role of IRDA :</b> Insurance Regulatory and Development Authority - Constitution, Objectives, Duties and powers, Role of IRDA in appointing agents.	14	Lecture, PPT, Group Discussion, Library Work, Assignment, Visit to institutions, tests, Interview of agent	Understanding legislation and authority
	<b>Total</b>	<b>48</b>		

**References:Book**

s:

1. Ghorpade Nitin (2015), *Insurance*, Success Publication, Pune.
2. Gupta L.P. (2018), *Insurance Claims Solutions- A Guide to Life and General Insurance Claims*, DR L.P Gupta Publisher.
3. Gupta P.K. (2017), *Principles of Insurance*, Himalaya Publishing House.
4. Gupta R.K. (2017), *Fundamental of Insurance*, Himalaya Publishing House.
5. Haridas R. (2011), *Life Insurance in India*, New Century Publication New Delhi.
6. P. Periasamy (2011), *Principles and Practice of Insurance*, Himalaya Publishing House.
7. Mishra M.N. and Mishra S.B. (2007), *Insurance Principles and Practice*, S. Chand and Company Ltd.
8. Pratchbal Shakti and Dwivedi N.P. (2017), *Principles of Insurance*, Himalaya Publishing House.
9. Taxmann (2014), *Insurance Laws and Manuals, An authorised publication of IRDA*,

14<sup>th</sup> Edition, Taxmann Publication Private Limited.

10. Taxmann (2015), *Insurance products (including Pension Products)*, Indian Institute of Banking and Finance Taxman.

***Reports and Other:***

1. Annual Report- 2016-17, 2017-18, 2018-19, Insurance Regularity and Development Authority of India
2. Annual Report- 2016-17, 2017-18, 2018-19, Life Insurance Corporation of India
3. Annual Report- 2016-17, 2017-18, 2018-19, General Insurance Corporation of India
4. Annual Report (Integrated) 2016-17, 2017-18, 2018-19, SBI Life Insurance
5. Annual Report- 2017-18, ICICI Prudential Life Insurance
6. [https://www.irdai.gov.in/ADMINCMS/cms/frmGeneral\\_NoYearList.aspx?DF=Creport&mid=12](https://www.irdai.gov.in/ADMINCMS/cms/frmGeneral_NoYearList.aspx?DF=Creport&mid=12)
7. [http://www.policyholder.gov.in/IRDAI\\_Annual\\_Reports.aspx](http://www.policyholder.gov.in/IRDAI_Annual_Reports.aspx)
8. <http://www.mospi.gov.in/104-insurance-statistics>
9. <https://www.ibef.org/download/insurance-feb-2019.pdf>
10. [https://nipfp.org.in/media/medialibrary/2013/08/insurance\\_report\\_final.pdf](https://nipfp.org.in/media/medialibrary/2013/08/insurance_report_final.pdf)

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## **SPECIAL ELECTIVE COURSE – VI**

**Subject: Computer Programming and Application Course**

**Course Code: 236(L)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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**Web base application in commerce**

**Objectives:**

- a. To make the students familiar with Internet environment.
- b. . To make the students familiar with the basics of Web base technology and its application tools.
- c. . To make the students familiar with basics of Internet, Website and related concepts.
- d. To make awareness among students about applications of Internet inCommerce.

<b>Unit No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Skills to be developed</b>
1	Introduction to Internet	1.1 Introduction to internet	Learner able to aware with Internet, Web and App with Cyber Ethics
		1.2 Applications of internet (Web and App), Concept of WWW, Types of Website	
		1.2 Web browsers (internet Explorer, firebox,...,etc.)	
		Surfing and searching and Search engines (Google, msn, yahoo)	
		Internet Banking	
		1.6 Introduction to Social media Application (Facebook, whakapapa Instagram)	
		1.7 Use of Social media application in business (Digital marketing, Advertisement, .....,etc)	
		1.8 Cyber Ethics	

2	<p style="text-align: center;"><b>Operating Web Based Applications</b></p>	<p>2.1 Operating Web-based Applications</p> <p>2.2 Online Reservation Systems</p> <p>2.2.1 Advantages of Online Reservation System</p> <p>2.2.2 Precautions while Performing Online Transactions</p> <p>2.2.3 Using Online Reservation Systems</p> <p>2.2.4 Case Study: Book Rail Ticket</p> <p>2.3 E-Governance</p> <p>2.3.1 Initiative</p> <p>2.3.2 E-Governance Sites</p> <p>2.4 Online Shopping and Bill Payments</p> <p>2.4.1 Benefits of Online Shopping</p> <p>2.4.2 How it works</p> <p>2.4.3 Bill Payments</p> <p>2.4.4 Case Study: Online Shopping using Online Shopping Website</p> <p>2.5 Online Courses, Tutorials and Tests</p> <p>2.5.1 Online Educational Sites (Goggle classroom, WebEx, Webinar, Zoom,....etc.)</p> <p>2.6 Project Management - Web Based Application Development</p> <p>2.6.1 Project Essentials and Tips</p>	<p>Learner able to aware with Web-based application with case studies</p>
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3.	<b>Web Based Application Development (HTML</b>	3.1 Introduction to HTML 3.2 HTML Document and Basic Structure 3.3 Working with HTML Text, Heading (Header & Footer), 3.4. Paragraph (Navigation Section), formatting (Article & Aside) 3.5 HTML color link image 3.6 HTML Lists, Tables and Frames 3.7 HTML Forms Block, Layout 3.8 Browser Portability 3.9 Working with Hyperlinks and Multimedia 3.10 Working with Forms and controls. 3.11 Introduction to CSS	Learner able to aware with Web-based application development technologies
4.	<b>Introduction to Web Scripting</b>	4.1 Difference in Client and Server Side Scripting 4.2 JavaScript, ASP.NET (using Visual Basic.NET) 4.3 Web Server Controls 4.4HTML Server Controls 4.5Validation Server Controls 4.6Components and Applications	Learner able to aware with Web-based application development scripting technologies

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	Use ICT or presentation on Internet	U-tube Tutorial on Internet		Familiar with Internet
2	14	Use ICT or presentation on	And ethical use of Internet		And ethical use of Internet
3	16	Web base application	U-tube Tutorial Web base application	One Power point presentation of Use of one Web application	Able to handle web application
4	08	Use ICT or presentation on Web base Technology	U-tube Tutorial Web base Technology		Familiar with Web base application Able to work on Web base application

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation
Unit – I	30	70
Unit – II	30	70
Unit – III	30	70
Unit – IV	30	70

### Guidelines for Examination:

Term End Exam (30 Marks):

To be conducted by college as per rules provided by University of Pune. Semester Exam 70 Marks):

To be conducted by University of Pune at the end of the academic year.

Passing marks for the course are  
40 (Out of which **minimum 32**  
marks are compulsory in Semester  
Examination).

**References :-**

1. HTML, Javascript, DHTML & PHP by Ivan Bayross- (BPB Publication)
2. HTML Black Book by Steven Holzner-(DreamTech Publication)
3. Web Technologies Black Book By Kogent Learning Solution
4. Thomas Powell. 8 January 2010. HTML & CSS: The Complete Reference, Fifth Edition. McGraw Hill Professional. ISBN 9780070701946
5. Kogent Learning Solutions Inc. Html 5 in Simple Steps. Published by Dreamtech Press, 2010. ISBN 10: 9350040867 / ISBN 13: 9789350040867 (Its EBook Free to Download)
6. Bryan Pfaffenberger. HTML, XHTML, and CSS. Fifth Edition. March 2011. Published by Wiley Publishing. Inc. ISBN: 978-1-118- 08130-3
7. Richard York.2005. Beginning CSS: Cascading Style Sheets for Web Design. Published by Wiley Publishing. ISBN:0-7645-7642-9
8. John Duckett.Beginning HTML, XHTML, CSS, and JavaScript. Published by Wiley (2010). ISBN: 9788126525515
9. DT Editorial Services. HTML 5 Black Book, Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and jQuery. Dreamtech Press; 2 edition (13 October 2016). ASIN: B07BFTJQB1.

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**Savitribai Phule Pune University**  
**Faculty of Commerce & Management**  
**S Y B Com (Semester IV)**  
**(Choice Based Credit System)**  
**Revised Syllabus (2019 Pattern)**

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**CORE COURSE – I**

**Subject: BUSINESS COMMUNICATION-II**

**Course Code: 241**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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**1. Objectives of the Course:**

- a. To understand the concept, process and importance of communication.
- b. To acquire and develop good communication skills requisite for business correspondence.
- c. To develop awareness regarding new trends in business communication.
- d. To provide knowledge of various media of communication.
- e. To develop business communication skills through the application and exercises.

**Medium of Instruction: English**

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Report Writing and Internal Correspondence</b>	Meaning and Significance; Structure of Reports; Negative, Persuasive and Special Reporting- 1. Informal Report – Proposals; 2. Formal Reports; 3. Project Report 4. Introduction and Essential elements of Report writing.( Reporting for a meeting) 5. Organization of Press Report. 6. Office Memo (Memorandums) 7. Office Orders 8. Office Circulars 9. Form Memos or Letters 10. Press Releases 11. Import Export Trade	i. To understand the Report Writing and Internal Correspondence. ii. To understand office Correspondence. iii. To study Import Export Trade Correspondence

		Correspondence	
2	<b>Recent Trends in Business Communication</b>	Internet: Email, Websites, <b>Social Media Network</b> (Twitter, Face book, LinkedIn, You tube, WhatsApp) , Google Doc, Google Form, Google Sheet, Google Slide, Google Class Room, Online Conference, Video conferencing, Meeting through Zoom App, Google meet App ,Cisco Webex meetings App.	To understand the Recent Trends in Business Communication
3	<b>Types and Drafting of Business Letters</b>	1) Enquiry Letters 2) Replies to Enquiry Letters 3) Order Letters 4) Credit and Status Enquiries 5) Sales Letters 6) Complaint Letters 7) Collection Letters 8) Circular Letters	i. To acquire the fundamental knowledge about types of Business Letters ii. To create ability among the students for Drafting of Business Letters
4	<b>Writing Formal Mails and Blog writing.</b>	4.1: Essential elements of mail, Format of mail. 4.2: Introduction and meaning of Blog, Writing a blog.	To understand the Writing Formal Mails and Blog writing.

#### Teaching Methodology:

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Project	Expected Outcome
1	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources, case study	Relevant You Tub Videos ,Relevant slide show, online Video Short Film Show	Report writing of students meeting	Understanding of basic knowledge of Report Writing and Internal Correspondence and Import Export Correspondence
2	12	Pre reading, Class discussion, internet resources, Lecture, Expert Lecture, PPT / Poster Presentation, Group Discussion,	Relevant You Tub Videos , Short Film Show, A.V Application	Project Report on types of Social Media	Learning the Recent Trends in Business Communication

		Library /Home Assignment ,Internal Assignment, students Seminar/Workshop	, online Video		
3	<b>16</b>	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources ,case study	Relevant You Tub Videos, PPT , AV Application , Short Film Show , Online Videos	Writing of any one Business letter	To create ability among the students for Drafting of Business Letters
4	<b>08</b>	Guest Lectures of eminent Personalities , Group Discussion, Library visit ,Home Assignment, case study	Online Videos, Relevant slide show	Blog writing	To create ability among the students about Writing Formal Mails and Blog writing.
<b>Total</b>	<b>48</b>	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources	Relevant You Tub Videos ,Relevant slide show,	-	To create ability among the students about Writing and Internal Correspondence. Also understanding the knowledge of Recent Trends in Business Communication.

#### References:

Sr. No	Title of Book	Author/s	Publication	Place
1	Business Communication	K. K.Sinha	Galgotia Publishing Company	New Delhi.
2	Business Correspondence & Report Writing	R. C. Sharma & Krishan Mohan	Tata McGraw Hill Publishing Co. Ltd.	New Delhi.
3	Communication	C.S. Rayudu	Himalaya publication	Mumbai
4	Business Communication	Asha Kaul	Prentice Hall of India	New Delhi.
5	Business Communication	Vasishth Neeru& Rajput Namita	Kitab Mahal	Allahabad
6	Soft Skills	Dr. Alex	S.Chand Publication	Delhi



7	Essentials of Business Communication	Rajendra Pal & Korlahalli	Sultan Chand & Sons	New Delhi.
8	Managerial Communication	P. D. Chaturvedi & Mukesh Chaturvedi	Pearson	Delhi

**Guidelines for completion of Practical's:**

- 1) At least three Practical's should be completed during each semester by students in consultation with subject teacher.
- 2) Practical should be based on visit as well as library assignments, Project based, Activity based.
- 3) A subject teacher has special privileges to make the allotment of practical topics.
- 4) Students should discuss with the subject teacher at the time of selection of practical topics.
- 5) If a student fails to complete minimum number of practical's, then the student shall not be eligible for appearing at the practical examination.

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## CORE COURSE – II

**Subject: CORPORATE ACCOUNTING-II**

**Course Code: 242**

**Total Credits: 03**

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### Preamble

In the modern economic environment the corporate sector is one of the major contributors towards GDP of any country and is also one of the largest and fastest growing sectors for providing employment opportunities. In the last decade the corporate sector has seen a massive growth in economic terms i.e. the volume of turnover, income and expenses etc. and also in terms of expansion of business across the globe. Accounting plays a vital role in this growth and to ensure safeguard of the interest of the stake holders and the society at large. It is therefore important to educate the students of commerce in the accounting practices adopted by the corporate organizations.

### Objectives of the course

1. To acquaint the student with knowledge of corporate policies of investment for expansion and growth through purchase of stake in or absorption of smaller units.
2. To develop the knowledge among the student about consolidation of financial statement with the process of holding.
3. To update the students with knowledge of the process of liquidation of a company
4. To introduce the students with the recent trends in the field of accountancy

### Depth of the program – Fundamental Knowledge

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1.	<b>Holding Company Accounts</b>	Calculation of Capital Profit, Revenue profit, Cost of Control. Preparation of consolidated Balance sheet of Holding Company with one subsidiary only. Adjustment of intercompany transactions, unrealized profit of stock.	<ul style="list-style-type: none"><li>• Conceptual Understanding of Holding Company Accounts</li><li>• Practical Application skills</li><li>• Analytical skills</li></ul>
2.	<b>Absorption of Companies</b>	Introduction , Meaning - Vendor and Purchasing Companies- Purchase Consideration, Accounting entries in the books of vendor Company and Journal entries and Preparation of Balance Sheet after Absorption in the books of	<ul style="list-style-type: none"><li>• Conceptual understanding on the concept of Absorption of companies</li><li>• Practical application skills in the process of</li></ul>

		Purchasing Company	accounting for Absorption
3.	<b>Accounting for Liquidation of Companies</b>	Meaning of Liquidation- Modes of winding up – (a) Preparation of Liquidator final statement of Account (b) Preparation of Statement of Affairs and Deficiency Account.	<ul style="list-style-type: none"> <li>• Conceptual understanding on Liquidation of Companies</li> <li>• Practical application skills</li> </ul>
4.	<b>Forensic Accounting</b>	Introduction , Meaning , Objectives , Types of Forensic Accounting , Nature and key principles of forensic accounting Ethical principles and responsibilities	<ul style="list-style-type: none"> <li>• Conceptual skills</li> <li>• Acquisition of knowledge about forensic accounting and its implication.</li> </ul>

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	14	Case Study	-----	-----	Developing understanding on accounting procedure for Holding companies
2	14	Case Study	You Tube and other online platforms for videos	Case study analysis	Conceptual understanding ,Practical application skills in the process of accounting for Absorption
3	12	Case Study , Simulative approach for mock liquidation of an Indian Company based on financial statements	Online Videos for cases	Individual assignment Preparation of Charts , PPT for the format of Statement of Affairs and Deficiency Account.	Practical understanding on Process of Liquidation on companies

4	08	Case Study	Online Videos on recent cases of Forensic Accounting	Case study Analysis	Updation of Knowledge on recent advances in the field of Accountancy
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**References :**

List of Books Recommended :-

1. Advanced Accounts: By M.C. Shukla & S.P. Grewal (S.Chand & Co. Ltd.)
2. Advanced Accountancy: By S.P. Jain & K.N. Narang ( Kalyani Publishers)
3. Advanced Accountancy: By R.L.Gupta & M. Radhaswamy (Sultan Chand & Sons)
4. Company Accounts: By S.P. Jain & K.L. Narang
5. Advanced Accounts: By Paul Sr.
6. Corporate Accounting: By Dr. S. N. Maheshwari & S.K. Maheshwari
7. Corporate Accounting: By Mukharji & Hanif

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## CORE COURSE – III

**Subject: BUSINESS ECONOMICS (MACRO)-II Course Code: 243**

**Total Credits: 03**

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### Preamble –

An approach to Macro Economics is to examine the economy as a whole. This paper aims to provide knowledge about macroeconomics that includes macro-economic variables and theories. It also aims to make students familiar about the various concepts of macroeconomics like functions of money, trade cycle and macroeconomic policies and also about the concepts used in public finance.

### Scope of the programme –

Basic Knowledge of Macro Economics

### Objectives –

- To familiarize the students to the basic theories and concepts of Macro Economics and their application.
- To understand the theories of money.
- To understand the phases of trade cycle and policy measures to elongate the trade cycle.
- To understand various concepts related to public finance.
- To understand credit creation of banks and money measures of RBI.

Unit	Name and Content of the Chapter	Purpose & Skills to be Developed
Unit 1	<b>Money:</b>	<b>Purpose:</b> To understand the concept of money. To make the students know about Demand, Supply and Value of Money. <b>Skills:</b> Interpretation, comparative analysis, critical thinking, writing skills
	1.1 Meaning and Functions of Money.	
	1.2 Demand for Money: 1.2.1 Classical Approach. 1.2.2 Keynesian Approach.	
	1.3 Supply of Money: 1.3.1 Credit Creation of Commercial Banks 1.3.2 Money Measure of RBI (M1, M2, M3, M4). 1.3.3 Credit Control Methods.	
	1.4 Value of Money: 1.4.1. Quantity Theory of Money. 1.4.2 Cash Balance Approach : Marshall, Pigou, Robertson and Keynes	
<b>Unit</b>	<b>Inflation:</b>	<b>Purpose:</b>

<b>2</b>	2.1 Meaning and Definition	To understand the concept Inflation. To understand the stagflation and Phillips curve. <b>Skills:</b> Understanding, writing skills, critical thinking
	2.2 Causes of inflation	
	2.3 Consequences of Inflation	
	2.4 Demand Pull and Cost Push Inflation	
	2.5 Stagflation: Meaning and Causes	
<b>Unit 3</b>	<b>Trade cycle:</b>	<b>Purpose:</b> To understand the concept and phases of trade cycle. To understand the policy measures <b>Skills:</b> Understanding, writing skills, critical thinking
	3.1 Meaning and Definition of Trade Cycle	
	3.2 Characteristics of Trade Cycle	
	3.3 Phases of Trade Cycle	
	3.4 Control of Trade Cycle: Monetary Measures and Fiscal Measures	
<b>Unit 4</b>	<b>Public Finance:</b>	<b>Purpose:</b> To understand Public Finance. To understand the Procedure of Budget. <b>Skills:</b> Understanding, Critical thinking and writing skills.
	4.1 Meaning and Definitions.	
	4.2 Scope of Public Finance.	
	4.3 Importance of Public Finance.	
	4.4 Meaning and Types of Tax.	
	4.5 Public Expenditure: Meaning and Causes of Increasing Public Expenditure.	
	4.6 Public Debt: Meaning and Importance.	
	4.7 Budget: Meaning and Types.	

### Teaching methodology:

Unit No	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	14	<ul style="list-style-type: none"> <li>Open discussion</li> <li>Casestudies</li> <li>Problem solvingbased learning</li> </ul>	<ul style="list-style-type: none"> <li>You tube lectures</li> <li>Films</li> </ul>	<ul style="list-style-type: none"> <li>Implication of liquidity trap.</li> <li>Credit control methods used by India.</li> </ul>	<ul style="list-style-type: none"> <li>Students will understand concept and theories of money.</li> <li>Will be able to critically evaluate supply of money in the economies.</li> </ul>

2	10	<ul style="list-style-type: none"> <li>• Digital lectures</li> <li>• Jigsaw reading</li> <li>• Project based learning</li> </ul>	<ul style="list-style-type: none"> <li>• You tube lectures</li> <li>• Online PPTs</li> </ul>	<ul style="list-style-type: none"> <li>• Inflation trends in developed and developing countries</li> <li>• Trends of agricultural prices in India</li> </ul>	<ul style="list-style-type: none"> <li>• Will understand the causes and consequences of inflation</li> <li>• Will understand the concept of stagflation</li> </ul>
3	10	<ul style="list-style-type: none"> <li>• Game oriented classes</li> <li>• Pair learning</li> <li>• Group discussion</li> <li>• Games and simulation</li> </ul>	<ul style="list-style-type: none"> <li>• Films</li> <li>• You tube lectures</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-cyclical policy measures used by various countries</li> <li>• Effect of US recession on the world economy</li> <li>• Implication of these measures</li> </ul>	<ul style="list-style-type: none"> <li>• Will understand phases of trade cycle</li> <li>• Will understand the types of policies</li> <li>• Able to interpret effect of anti-cyclical policies on the economy</li> </ul>
4	14	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Teacher driven</li> </ul>	<ul style="list-style-type: none"> <li>• You tube lectures</li> <li>• Online PPTs</li> </ul>	<ul style="list-style-type: none"> <li>• Trend of developed and non-developed expenditure in Indian economy</li> <li>• Types of taxes in India</li> <li>• Study of Indian budget</li> </ul>	<ul style="list-style-type: none"> <li>• Will understand public revenue and public expenditure concept</li> <li>• Will be able to analyze, interpret and criticize public policies with theoretical base</li> </ul>

### References:

1. Economics: Paul A Samuelson and William D Nordhaus. McGRAW – HILL international Edition.
2. Macroeconomics: N. Gregory Makiw, Worth Publishers, New York.
3. Macro- Economic Theory: M L Zingan, Vrinda Publications (P) Limited.
4. Samashti Arthshstriy Vishleshan : Shridhar Deshpande, Vinayak Deshpande, Himalaya Publication House.
5. Theories of value: Output and Employment - John Eatwell, Thames Polytechnic, 1979

6. Business Economics, Dr.J.P.Mishra, Sahitya Bhavan Publications, Agra.
7. Macroeconomics: A Global Text, Sampat Mukherjee, New Central Book Agency Private Limited (Latest Edition), New Delhi
8. Macroeconomics: A Rough Guide, in Macroeconomics: A Reader, (Ed.) Brian Snowdon and Howard Vane, Routledge
9. Paisa, Mahagaie Aani Rajasva: Dr. Rasal, Shelar and Bhadane, Idol Publications, Pune.
10. Macroeconomics: Theory and Policy, S. Chand & Company Limited. (Latest Edition)
11. Ben Fine & Ourania Dimakou, Macroeconomics: A Critical Companion, Pluto Press (Latest Edition)
12. Michel De Vroey, A History of Macroeconomics: From Keynes to Lucas and Beyond, Cambridge University Press (Latest Edition)
13. Sampat Mukherjee, Analytical Macroeconomics: From Keynes to Mankiw, New Central Book Agency Private Limited
14. Macroeconomics- K R Gupta, R.K.Mandal, Amita Gupta, Atlantic Publishers and distributor's pvt.ltd.
15. Money, Inflation, and Business Cycles The Cantillon Effect and the Economy, Arkadiusz Sieroń. Abingdon, Routledge, 2019. New York
16. Macroeconomics: N. Gregory Maki Worth Publishersw, New York
17. Macro Economics: Rudiger Dornbusch, Stanley Fisher & Richard Startz Tata McGraw Hill Education Private Limited (Latest Edition),US
18. The General Theory of Employment, Interest, and Money- John Maynard Keynes, General Press
19. An Analysis of John Maynard Keynes's The General Theory of Employment, Interest and Money- John Collins, CRC Press,2017

### Suggested Web

#### References:

Sr. No.	Lectures	Films	Animation	PPTs	Articles
1.	<a href="https://www.economicsnetwork.ac.uk/teaching/Video%20and%20Audio%20Lectures/Public-sector%20Economics%20and%20Public%20Choice%20Theory">https://www.economicsnetwork.ac.uk/teaching/Video%20and%20Audio%20Lectures/Public-sector%20Economics%20and%20Public%20Choice%20Theory</a>	<a href="http://www.studyinternational.com/the-little-bits-we-like/films/">http://www.studyinternational.com/the-little-bits-we-like/films/</a>	<a href="https://ed.ted.com/lessons?category=macroeconomics">https://ed.ted.com/lessons?category=macroeconomics</a>	<a href="https://www.slideshare.net/NayanVaghela/trade-cycle-chapter-4">https://www.slideshare.net/NayanVaghela/trade-cycle-chapter-4</a>	<a href="https://theconversation.com/global-topics/inflation-645">https://theconversation.com/global-topics/inflation-645</a>



2.	<a href="https://www.youtube.com/watch?v=Ac_i3GEhMF54">https://www.youtube.com/watch?v=Ac_i3GEhMF54</a>	<a href="https://economic.stackexchange.com/questions/9781/what-are-some-exceptional-movies-documentaries-on-macroeconomics">https://economic.stackexchange.com/questions/9781/what-are-some-exceptional-movies-documentaries-on-macroeconomics</a>	<a href="https://www.ufs.ac.za/econ/unlisted-pages/microeconomics-animations">https://www.ufs.ac.za/econ/unlisted-pages/microeconomics-animations</a>	<a href="https://www.slideshare.net/NayanVaghela/public-finance-chapter-7">https://www.slideshare.net/NayanVaghela/public-finance-chapter-7</a>	<a href="https://journals.sagepub.com/toc/pfr/current">https://journals.sagepub.com/toc/pfr/current</a>
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## CORE COURSE – IV

**Subject: BUSINESS MANAGEMENT-II**

**Course Code: 244**

**Total Credits: 03**

Unit No.	Unit Title	Contents	Skills to be developed
1.	Improving peoples' performance : Motivating the staff	<ul style="list-style-type: none"><li>• Meaning, Importance and Theories of motivation</li><li>• Maslow's Need Hierarchy Theory</li><li>• Herzberg's Two Factor Theory</li><li>• Douglas MC Gregor's Theory of X and Y</li><li>• Ouchi's Theory Z</li><li>• McClelland's Theory</li></ul>	<ol style="list-style-type: none"><li>1. Skills regarding how to motivate staff and other members of the team.</li><li>2. Skills regarding retaining motivational level</li><li>3. Understanding needs and expectations of group members and meeting them effectively.</li></ol>
2.	Organizing from front-Leadership Skills	<ul style="list-style-type: none"><li>• Meaning, Importance, Qualities and Functions of a leader</li><li>• Leadership styles for effective management</li><li>• Contribution of Mahatma Gandhi, Dr. Babasaheb Ambedkar and Pt. Jawaharlal Nehru in leadership.</li></ul>	<ol style="list-style-type: none"><li>1. How to lead group</li><li>2. Understanding followers and their views on various organizational matters.</li><li>3. Conflict Management</li></ol>
3.	Achieving success at work : Coordination and Control	<ul style="list-style-type: none"><li>• Meaning and need of coordination and control</li><li>• Techniques and difficulties in establishing coordination and control</li><li>• Steps in the process of control and it's techniques</li></ul>	<ol style="list-style-type: none"><li>1. How to coordinate group efforts</li><li>2. Minimizing resource waste</li><li>3. Skills to establish coordination between departments.</li></ol>
4.	Emerging trends in Business management	<ul style="list-style-type: none"><li>• Corporate Social Responsibility,</li><li>• Corporate Governance And Corporate Citizenship,</li><li>• Disaster Management And</li><li>• Management of Change</li></ul>	<ol style="list-style-type: none"><li>1. How to introduce change</li><li>2. Significance of Disaster Management</li><li>3. Importance and implementation of CSR</li><li>4. Importance of Corporate Citizenship</li></ol>

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be Used	Film shows and AV Applications	Project	Expected Outcome
1	12	PowerPoint Presentations, YouTube Videos	Films how to motivate staff and various theories of motivation available on various digital platforms.	Poster Presentation on motivation theories.	Students will get an idea about the basic motivational tools used in the field of management.
2	12	PowerPoint Presentations, YouTube Videos	Documentaries and movies on leadership. Videos of great leaders in the field of trade and commerce available on various digital platforms.	Student group activities which involve leadership skills and qualities.	Students will get an idea about how leadership influences organizational success.
3	12	PowerPoint Presentations, YouTube Videos	Documentaries and movies on coordination and control available on various digital platforms.	Poster Presentation on coordination and control	Students will understand the significance of coordination and control in modern business management.
4	12	PowerPoint Presentations, YouTube Videos	documentaries and movies emerging trends in management available on various	Projects on various emerging trends in management	Students will come across various emerging trends in management.

### References :-

- Management Theory & Practice - J.N.Chandan
- Essential of Business Administration - K.Aswhatha Himalaya Publishing House
- Principles & practice of management - Dr. L.M.Parasad, Sultan Chand & Sons - New Delhi
- Business Organization & Management - Dr. Y.K. Bhushan

- Management: Concept and Strategies By J. S. Chandan, Vikas Publishing
- Principles of Management, By Tripathi, Reddy Tata McGraw Hill
- Business organization and Management by Talloo by Tata McGraw Hill Business Environment and Policy – A book on Strategic Management By Francis Cherunilam Himalaya Publishing House
- Essentials of Management - Horold Koontz and Itenz Weibrich - McGrawhills International
- Management Theory & Practice - J.N.Chandan
- Essential of Business Administration - K.Aswathapa Himalaya Publishing House
- Principles & practice of management - Dr. L.M.Parasad, Sultan Chand & Sons - New Delhi
- Business Organization & Management - Dr. Y.K. Bhushan
- Management: Concept and Strategies By J. S. Chandan, Vikas Publishing
- Principles of Management, By Tripathi, Reddy Tata McGraw Hill
- Business organization and Management by Talloo by Tata McGraw Hill
- Business Environment and Policy – A book on Strategic Management By Francis Cherunilam Himalaya Publishing House

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## CORE COURSE – V

**Subject: ELEMENTS OF COMPANY LAW-II Course Code: 245**

**Total Credits: 03**

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Depth of the program – Fundamental Knowledge

### Objectives of the Program

1. To develop general awareness among the students about management of company
2. To have a comprehensive understanding about Key managerial Personnel of company and their role in Company administration.
3. To acquaint the students about E Governance and E Filing under the Companies Act, 2013.
4. To equip the students about the various meetings of Companies and their importance.
5. To make students capable of becoming good human resource of the corporate sector.

Unit No	Unit Title	Contents	Purpose Skills to be developed
1	Management of Company	<b>Management of Company:</b> 1. Board of Directors: Definition, Powers, Restrictions, Prohibition on Board. 2. Director: Meaning and Legal position of Directors,. Types of Directors, Related Party Transactions(Sec.188) 3. Appointment of Directors, Qualifications and Disqualifications, Powers, Duties, Liabilities of Directors, Loans to Directors, Remuneration of Directors	To Equip the students with procedure and practices

2	<b>Key Managerial Personnel (KMP)</b>	<b>Key Managerial Personnel (KMP) (U/S 203)</b> 1. Meaning, Definition and Appointments of Managing Director, Whole Time Director, Manager, CS 2. Company Secretary (CS)- Term of office/ Tenure of appointment, Role of Company secretary 3. Distinction between Managing Director, Manager and Whole Time Director - Role (Powers, Functions of above KMP) 4. Corporate Social Responsibility (CSR) [U/S 135] – Concept who is Accountable, CSR Committee, Activities under CSR,	To have Comprehensive understanding about the Key Managerial Persons and CSR
3.	<b>Company Meetings</b>	<b>Company Meetings:</b> 1. Board Meeting – Meaning and Kinds 2. Conduct of Meetings - Formalities of valid meeting [Provisions regarding agenda, notice, quorum, proxies, voting, resolutions (procedure and kinds) minutes, filing of resolutions, Virtual Meeting] 3. Meeting of Share Holders General Body Meetings, Types of Meetings A. Annual General Meeting (AGM), (Ss.96 to 99) B. Extraordinary General Meeting (EOGM).(Sec.100) 4. Provisions regarding convening, constitution, conducting of General Meetings contained in Ss.101 to 114	To acquaint students about
4.	<b>E Governance and Winding up Company</b>	<b>E Governance and Winding up of a Company</b> 1. E Governance –meaning, Importance of E Governance 2. E Filing – Basic concept of MCA, E Filing 3. Winding –up: Meaning of winding-up, Dissolution of company, Conceptual understanding of winding-up by the Tribunal, 4. Compulsory winding-up, Members’ voluntary winding-up, Creditors’ voluntary winding-up	To be able to appreciate the emerging E Governance and E- filing under the Companies Act, 2013. Learn the winding up of company.

[Note: Recent amendments in the Acts and relevant Landmark cases decided by courts are expected to be studied]

#### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome

1	12	Document , PPT, Narration, , Survey Analysis, Article review	You Tube about Company Management	Report, Review on management of company	To Acquaint knowledge and maturity to understand Company management.
2	12	Project making, , jingles, slogan , Quiz Competition, , Interview with Company secretary	Use of You tube, Review of Movie	Article review on new Emerging issues in CSR of company	To Acquaint with knowledge and role of key managerial person of the Companies and Rules about CSR.
3	12	Street play, Case study, Poster making, Mock AGM.	Case Analysis, valid meetings	Recent Laws and salient features of meetings of company.	To get training in to various types of meeting and procedure.
4	12	Group Discussion, Assignments on e-governance and e-filing, Interview of lawyer	Film on E-governance procedure and case study of winding up	Project on winding – up of company and E-governance	To enhance skills and knowledge about the E- governance of the company and winding-up of the company

### Methods of Evaluations

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Evaluation,	Written Exam	Seminar on legal aspects on starting Business

Unit – II	Continuous Evaluation	Written Exam	Awareness program
Unit – III	Continuous Evaluation,	Written Exam	Visit to IPR Websites
Unit – IV	Continuous Evaluation,	Written Exam	Awareness program

1	12	PowerPoint Presentations, YouTube Videos	Films how to motivate staff and various theories of motivation available on various digital platforms.	Poster Presentation on motivation theories.	Students will get an idea about the basic motivational tools used in the field of management.
2	12	PowerPoint Presentations, YouTube Videos	Documentaries and movies on leadership. Videos of great leaders in the field of trade and commerce available on various digital platforms.	Student group activities which involve leadership skills and qualities.	Students will get an idea about how leadership influences organizational success.
3	12	PowerPoint Presentations, YouTube Videos	Documentaries and movies on coordination and control available on various digital platforms.	Poster Presentation on coordination and control	Students will understand the significance of coordination and control in modern business management.
4	12	PowerPoint Presentations, YouTube Videos	documentaries and movies emerging trends in management available on various	Projects on various emerging trends in management	Students will come across various emerging trends in management.

**References :-**



<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1.	The Companies Act with Rules	Taxmann	Tan Prints (India) Pvt. Ltd. Jhajjar	Chandigarh
2.	The Companies Act, 2013	Bharat	Bharat Law House Pvt. Ltd.	Delhi
3.	Company Law-A Comprehensive Text Book on Companies Act 2013	Dr. G.K. Kapoor & Dr. Sanjay Dhamija	Taxmann Publications Pvt. Ltd	Delhi
4.	Company Law	Dr S R Meyani	Asia Law House	Mumbai
5.	Company Kaydyachi Olakha	K Shriram	Aarti & Co.	Mumbai
6.	Guide to Memorandum, Articles & Incorporation of Companies	Bhandari	Lexis Nexis	Mumbai
7.	Elements of Company Law	Arun Gaikwad Devendra Bhawari	Bibha	Pune
8.	Elements of Company Law	Prakash N. Chaudhary	Nirali Prakashan	Pune
9.	E-Commerce : Legal Compliance	Pratima Narayan	Eastern Book Company	Mumbai

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## SPECIAL ELECTIVE COURSE – VI

**Subject: BUSINESS ADMINISTRATION-II**

**Course Code: 246(A)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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Unit No.	Unit Title	Contents	Purpose/Skills to be developed
1	<b>Legal Aspects (Recent Trends)</b>	Compliance of legal requirements in promoting business unit, Licensing, Registration, Filing returns and other documents	To develop a better understanding of the legal compliances in business
2	<b>Productivity</b>	Meaning, Importance & measurements of productivity, Factors affecting productivity, Role of National Productivity Council-Product Quality Control	To understand the term productivity and its importance in business administration
3	<b>Business liasoning</b>	Interface between business and government, society ,and natural environment; etc Business strategy -- meaning and importance and steps in developing strategies.	To develop an understanding of the various forms of liasoning required in business administration
4	<b>Business Alliances (growth strategies)</b>	Mergers & Acquisition, Franchising, Outsourcing-concept and characteristics, Public Private Partnership, Business Engineering	Getting acquainted with the growth strategies of business

### Teaching Methodology

Unit No.	No. of lectures	Innovative method to be used	Project	Expected Outcome
1.	12	PowerPoint Presentations, YouTube Videos	Assignments, poster presentations	Students will get an idea about the legal environment of business

2.	12	PowerPoint Presentations, YouTube Videos	Assignments, group presentations	Provide first - hand account of how productivity can be improved
3.	12	Lectures of industry experts entrepreneurs and documentaries.	Interviews /interaction with Business leaders to get a deeper insight on the environment and its impact on business	Help students understand the importance of various stake holders of business and the efficient way of establishing a rapport with them for business development
4.	12	Videos and lectures by experts	Interactions by experts with the students on various cases . Assignments/ presentations by student teams based on such interaction.	Greater insight on mergers , acquisitions and other strategies.

**Recommended Books:**

- i. Modern Business Organisation & Management-N.Mishra, Allied Publishers-Mumbai
- ii. Essentials of Business Administration- K. Ashwathappa-Himalaya Publication
- iii. Business Administration-S.C.Saxena-Sahitya Bhavan, Agra
- iv. The Administrative Process-Stephen Robbins
- v. Industrial Administration & Management- J.Batty
- vi Basu, C. (2017). Business Organisation and Management. McGraw Hill Education.

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## SPECIAL ELECTIVE COURSE – VI

**Subject: BANKING & FINANCE-II      Course Code: 246(B)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### Objectives:

1. To provide the knowledge of Cooperative Banking in India
2. To analyze the functioning of Development Banking
3. To create the awareness about Banking Sector Reforms
4. To understand the role of various committees on Banking Sector Reforms.

UnitNo.	Topic	No. of Lectures	Teaching Method	Proposed skills to be developed
1.	Co-operative Banking in India: Meaning, significance and 1.1 principles of Cooperation  1.2 Evolution of Cooperative Baking in India. 1.3 Structure of Co-operative Banking in India  Role of Co-operative Banking in Economic 1.4 Development 1.5 Challenges before Co-operative Baking in India	12	Lecture, PPT, the  Group and  Panel Discussion,  Library Work, Assignment	Understanding  Co-operative Banking Structure in India
2.	Development Banking in India: 2.1 Meaning and Features of Development Banking 2.2 Functions of Development Banks in India  Role of Development Banks in Economic 2.3 Development  Challenges before the Development Banking in 2.4 India	12	Lecture,PPT, the Group and Panel  Discussion,  Library Work, Visit to Banks	Understanding Functions and analyze the Role  of Development  Banking in India
3.	Selective Important Concepts of Banking 3.1 Central Banking , 3.2 Commercial Banking 3.3 Branch Banking , 3.4 Unit Banking	10	Lecture, PPT, the Group Discussion,	Understanding various concepts of Banking

3.5 Wholesale Banking, 3.6 Retail banking 3.7 Social Banking , 3.8 Islamic Banking 3.9 Merchant Banking, 3.10 Digital Banking		Library Work, Projects	
4. Banking Sector Reforms  Historical approach, Meaning and Goals of 4.1 Banking Sector Reforms in India 4.2 Banking Reform Measures  i) Cash Reserve Ratio (C.R.R.) and Statutory Liquidity Ratio (S.L.R.) ii) Prudential Norms (NPA) iii) Capital Adequacy Norms iv) Credit Deposit Ratio (C.D.Ratio)  Framework of Basel Committees on Banking 4.3 Supervision i) Basel – I ii) Basel – II iii) Basel – III iv) Basel – IV  M. Narsimhan Committee 4.4 Recommendations of – I (1991) 4.5 Recommendations of M. Narsimhan Committee- II (1998)	14	Lecture, PPT, Group and Panel Discussion, Library Work, Assignment, Projects	Understanding the Goals and Measures of Banking Reforms in India  Analyze the role of various committees on Banking Sector Reforms
Total	48		

### References:

1. Debaprosanna Nandy (2010), 'Banking Sector Reforms in India and Performance Evaluation of Commercial Banks, Universal Publishers
2. Deb Joyeeta (2019), 'Indian Banking System', Evince Publishing.
3. Desai Vasant (2007), 'Indian Banking-Nature and Problems', Himalaya Publishing House.
4. Gopinath M.N. (2017), 'Banking Principles and Operations', Snow White Publisher.

5. Joshi, Vasant and other (2002), Managing Indian Banks – The Challenges Ahead, Response Books, New Delhi.
6. Mallik, Chaudhury and Sarkar (2018), 'Indian Banking System- Growth, Challenges and
7. Nararajan and Parameswaran (2007), 'Indian Banking', S. Chand Company Ltd. New Delhi.
8. ShahiUjjwala (2013), 'Banking in India: Past, Present and Future', New Century Publications
9. Singh Sultan (2008), 'Banking Sector Reforms in India', Kanishka Publishing House
10. Thirunarayanan R., 'Co-operative Banking in India', Mittal Publication
11. Trivedi, Chaudhary and other (2015), 'Indian Banking System', RBD Publication, Jaipur.
12. Trivedi I.V. and Jatana Renu (2010), 'Indian Banking System', RBSA Publisher.
13. 'Report on Trend and Progress of Banking in India' 2017-18, 2018-19, 2019-20- Reserve Bank of India

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## **SPECIAL ELECTIVE COURSE – VI**

**Subject: BUSINESS LAW & PRACTICE-II      Course Code: 246(C)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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### **Objectives of the course:**

To develop an understanding of the significant provision of Industrial and Labour Laws.

To gain the ability of students to address a basic business legal application- oriented issues.

### **Depth of the program:**

Basic & Fundamental

### **Objectives of the Subject:**

- To impart the students with the fundamental understanding of important Industrial and Labour laws.
- To study & acquaint students an application & overview based knowledge of Industrial and Labour Laws.
- To familiar the students with legal Business Environment of India.
- To develop & strengthen students through the legal practical knowledge and their implications on Indian Business organizations.
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<b>Unit. No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose skills to be developments</b>
1	Maharashtra Cooperative Societies Act, 1960	Definition and Features of a Co-operative Society. Types of Co-operative Societies. Restriction on the society - Registration, Cancellation of Registration and De- registration of a Society. Bye Laws and Amendments of bye-laws.	Understanding the order and laws for development of co-operative societies in the state of Maharashtra.

2	Life Insurance	Meaning, Definition of Life Insurance, Features of Life Insurance, Importance of life Insurance. Basic Principles of Life Insurance. Advantages of Life Insurance, Type of Life Insurance Policy, Procedure of Life Insurance Policy. Settlement of Claims of Life Insurance of Policy, Nomination of Policy. LIC Object, Constitution & Functions, Challenges before LIC, Social Responsibility of LIC.	It will help the students to gain insights of Life Insurance
3	Competition Act 2002	Introductions, definitions, scope, objectives, Prohibition of Certain Agreements, Abuse of Dominant Position and Regulation of Combinations, Competition Commission of India, Duties, Powers And Functions of Commission. (Sec 1 to 39)	To create more awareness about prevented practices that adversely affect competition, and to maintain competition in markets and protect the interests of consumers.
4	Industrial Disputes Act, 1947	Introductions, definitions, scope, objectives, Industrial Disputes, Strikes, Lock-out, lay-off, Standing orders, Rules, Causes of Industrial Disputes. Consequences of Industrial Disputes. Works committee.	Understanding the concepts of dispute, Disputes that relate to the terms and conditions of employment or non-employment or employment of a person.



## Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	<ul style="list-style-type: none"> <li>➤ Cases to be discussed in Group.</li> <li>➤ Internet Sources.</li> </ul>	<ul style="list-style-type: none"> <li>➤ You tube videos on Success stories of cooperative movement in India.</li> <li>➤ E-Content on Cooperative societies provided by UGC/University/MOOC / You tube etc. to be studied.</li> </ul>	Project report should be prepared on Various successful cooperative ventures in .India & Outside the India	Understanding the legal requirements of Cooperative Business Model in India. Understanding the cooperative law & its applications.
2	12	<ul style="list-style-type: none"> <li>➤ Benefits of Insurance to be discussed in Group.</li> <li>➤ Internet Sources.</li> <li>➤ Discussion on Claim Settlement.</li> </ul>	<ul style="list-style-type: none"> <li>➤ E-Content on Life Insurance provided by UGC/University/MOOC etc. to be studied &amp; analyzed.</li> </ul>	Project report can be prepared on benefits of Life insurance to the people.	Legal framework of Life insurance. Insights & benefits to be understood to minimize life risk.
3	12	<ul style="list-style-type: none"> <li>➤ Internet Sources.</li> <li>➤ Presentation can be taken.</li> <li>➤ Applications of this law to be understood.</li> </ul>	<ul style="list-style-type: none"> <li>➤ E-Content on Competition Act 2002 provided by UGC/University/MOOC/ You Tube etc. to be Watched &amp; analyzed.</li> </ul>	Project report can be prepared on Applications of Competition Act 2002.	Understanding the fair & healthy business competition in India.

4	12	<ul style="list-style-type: none"> <li>➤ Observation or Survey about Industrial disputes can be conducted and discussed in detail.</li> <li>➤ PPT Method can be used.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Various cases on Industrial Disputes can be studied.</li> <li>➤ E-Content on Industrial Disputes act 1947 provided by UGC/University/MOOC/ You Tube etc. to be Studied &amp; analyzed.</li> </ul>	Project report can be prepared on various dispute cases happened in India & solved under Industrial Disputes Act 1947.	Application & benefits of Industrial Disputes Act 1947. Insights & benefits of the same to the business organizations in India.
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### References

Sr. No.	Title of the Book	Author/s	Publication
1	Labour Laws	Taxmann	Taxmann
2	Labour & Industrial Laws	S N Misra	Central Law Publication
3	Maharashtra Cooperative Societies Act, 1960	Current Publications	Current Publications
4	Competition Act 2002	Agarwal V. K.	Bharat Law House Pvt Ltd
5	Industrial Disputes Act, 1947	Lawmann's	Kamal Publishers
6	Labour and Industrial Laws	M.N. Mishra	Central Publicaions

### Practical for Semester – IV

Topic	Mode of Practical
Types of Cooperative Society	Case Study Method.
Settlement of Claims of Life Insurance of Policy	Real life examples, Applications with library sources.
Competition Commission of India	Library Assignment.
Strikes, Lock-out, lay-off, Standing orders, Rules, Causes of Industrial Disputes	Review of Research Papers/Articles, News Paper Articles etc.

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## SPECIAL ELECTIVE COURSE – VI

### Subject: CO-OPERATION AND RURAL DEVELOPMENT -II

Course Code: 246(D)

Total Credits: 04 (Theory 03 + Practical 01=04)

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Co-operative Laws in India</b>	1.1 History of Co-operative Legislation 1.2 Co-operative Societies Act 1904, Objectives and Features 1.3 Co-operative Societies Act 1912 ,Objectives and Features 1.4 Bombay Provisional Co-operative Societies Act 1925, Main Provisions, 1.5 Benefits of Co-operative Legislations	1. To understand progress of co-operative legislation 2. To be acquainted with various co-operative enactments 3. 3. To know the benefits of co-operative legislations
2	<b>Multi-state Co-operative Societies Act</b>	2.1 Need and objectives 2.2 Procedure for Registration of Societies 2.3 Documents required for registration 2.4 Central Registrar – Appointment, Functions, Duties	1. To know the process of registration. 2. To know the various documents essential for registration of societies 3. To understand the rights and functions of Registrar.
3	<b>Maharashtra State Co-operative societies Act, 1960</b>	3.1 Need and objectives of the Act 3.2 Registration of Co-operative Societies 3.3 Privileges of Co-operative Societies 3.4 Membership of Co-operative Societies 3.5 Provisions Regarding Management of Co-operative Societies 3.6 Registrar Appointment, Functions, Duties and Jurisdiction 3.7 Provisions Regarding Audit of Co-operative Societies 3.8 Amendments made in Maharashtra Co-operative Societies, Act in 2013	1. To understand provisions of co-operative societies Act-1960. 2. To know and understand provisions of amendment act 2013. 3. To know the provisions pertaining the audit of co-operative societies.

4	<b>Co-operative Entities – Functions, Problems and Progress</b>	4.1 Present Situation of Agricultural Credit Co-operatives- Primary District and State Co-operative Banks 4.2 Co-operative Sugar Factories 4.3 Contemporary conditions of Non Agricultural Credit Co-operatives 4.4 Dairy Co-operatives 4.5 Co-operative Housing Societies 4.6 Consumer Co-operative Societies 4.7 Urban Co-operative Banks	1. To create understanding about agricultural credit banks. 2. To know the problems of co-operative societies. 3. To know the functions of various co-operative societies.
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### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Theory lectures, group discussion.	----	-----	Concept of co-operation & how co-operative societies act progressed.
2	12	Theory lecture, class room discussion	----	-----	Student should become aware about registration, its benefits & importance.
3	12	Theory lecture, Visit to co-operative registrar's office	AV available on 'You tube'	Collection of Memorandum of Association, Article of Association, Form 'A' & Form 'B'.	Understanding pertaining to registration process, documents & audit of co-operative societies
4	12	Theory lecture, visit to co-operative credit Bank	-----	Preparing Detailed report of the visit.	Understanding about functioning of credit co-operative banks/ Societies

### References:

- 1) G.S.Kamat –Cases in Co-operative management
- 2) N.L.Ghorpade- Co-operation and Rural Development
- 3) K.K.Taimani- Co-operative Organization and Management
- 4) G.S.Kamat – New Dimensions of Co-operative Management
- 5) Vasant Desai – Fundamentals of Rural Development

- 6) Dr. Dhiraj Zalte & Others – Theory & Practice of Co-operation, Prashant Publication
- 7) V.M.Dandekar and Rath – Poverty in India
- 8) Dr. P.R.Dubhashi – Rural Development and Administration in India
- 9) V.Reddy – Rural Development in India
- 10) S.K. Gopal – Co-operative Farming in India
- 11) B. Mukharji – Community Development
- 12) I.C.A State and C-operative Movement
- 13) <https://www.bhagirathgram.org/>

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## SPECIAL ELECTIVE COURSE – VI

### Subject: COST & WORKS ACCOUNTING-II

Course Code: 246(E)

Total Credits: 04 (Theory 03 + Practical 01=04)

#### Objectives:

1. To know the documents that are used in stores and how to calculate the issuing price of material.
2. To provide knowledge to students on classification and codification.
3. To equip students with knowledge regarding the ascertainment of labour cost.
4. To understand the concept of payroll.
5. To know the concepts of labour turnover and merit rating.
6. To understand recent trends in cost accounting.

Unit No.	Unit Title	Contents	Skills to be developed
1	Material Accounting	Store Location and Layout. Classification and Codification of Material. Stores and Material Records. Bin Card & Store Ledger etc. Issue of Material and Pricing Methods for Issue of Material: FIFO. LIFO. Simple Average Methods. Weighted Average Methods. Use of computer in store Accounting.	1. To understand different pricing methods used for issuing the material. 2. To gain knowledge about the documents used in store departments.
2	Labour cost and Payroll	Meaning and definition of wages. Difference Between Wages and Salary Records and methods - time keeping and time booking. Methods of Wage Payment Time rate system. Piece rate system. Taylor's differential piece rate system. Incentive Plan. Halsey Plan. Rowan Plan. Group Bonus scheme. Performance based incentive plan. Payroll meaning and components	To Understand the difference between salary and wages. To know the methods of time keeping and time booking. To enable the student to calculate wages and incentives. To understand meaning and components of payroll
3	Other Aspects of Labour	a. Labour Turnover. b. Job Analysis & Job Evaluation. c. Merit Rating.	To understand the labour turnover, job analysis and evaluation
4	Direct Cost and	Direct Cost Concept and its accounting	To understand the concept of

Introduction to JIT, CAM and ERP.	treatment Introduction to- Just In Time(JIT) CAM( Computer Aided Manufacturing) Enterprise Resource Planning (ERP)	direct cost and recent trends in cost and management accounting
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### Teaching Methodology

Unit No.	Total Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1	16	Invite a storekeeper in the classroom to provide practical knowledge about which records are to be maintained in the store department and pricing methods for issue of material	Youtube Lectures and relevant multimedia compact discs(CD)	Visit small industries for understanding which records are to be maintained in store department	Understanding various methods used in the pricing of the issue of materials
2.	16	Powerpoint presentation and guest lecture	You Tube clippings of methods of remuneration, time keeping and time booking and their methods	1)Calculation of wage payment and incentives. 2)Preparation of a specimen of pay slip.	Enabling to calculate wage payment and incentives.
3	10	Powerpoint presentation and group discussion.	You Tube clippings of Labour turnover, Job Analysis & Job Evaluation Merit Rating.	Analysis and evaluation of jobs in any organisation.	Understanding the process of job analysis, job evaluation and merit rating.
4	6	Guest lecture, powerpoint presentation and group discussion.	You Tube clippings of Labour turnover, Job Analysis & Job Evaluation Merit Rating.	Read articles on the recent trends in cost accounting from Journals, e-journals and web resources.	Insight into recent processes used for cost reduction.

### Methods of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add-On Course
Unit I	Multiple Choice Questions, Written Test, Internal Examination, Powerpoint Presentations, Orals, Assignments, Tutorials etc.	SPPU	Two industrial visits and subsequently reports on these visits.
Unit II			
Unit III			
Unit IV			

### References

Sr. No	Titles of the Book	Names of Author	Name of Publisher	Place
01	Cost Accounting-Principles & Practices	Jawahar Lal & Seema Shrivastava	Tata Mcgraw Hill	New Delhi
02	Advanced Cost Accounting And Cost Systems	Ravi M Kishor:	Taxmann	New Delhi
03	Cost Accounting Theory And Problems	S. N. Maheshwari	Mittal Shree Mahavir Book Depot.	New Delhi
04	Advanced Cost Accounting	Jain and Narang	Kalyani Publication	New Delhi
05.	Horngren's Cost Accounting-A Managerial Emphasis	Srikant M Datar & Madhav V Rajan	Pearson	Noida Up
06	Cost Accounting-Principles & Practices	Dr. M.N. Arora	Vikas Publishing House,	New Delhi
07	Advanced Cost Accounting	Dr. D. M. Gujarathi	Idol Publication	Pune
08	Advanced Cost Accounting	Dr. Kishor. M. Jagtap	Tech-Max Publication	Pune
09	Cost Accounting Principles And Practice	Jain and Narang	Kalyani Publication	New Delhi
10	Principles and Practice of Cost Accounting	N.K Prasad	Booksyndicate Private Ltd	Kolkata
11	Cost Accounting: Methods and Problems	B.K.Bhar	Academic Publications	Kolkata

### Web References

Sr. No	Lectures	Films	PPTs	Articles	Others
For all the units.	Guest Lectures by Field Personnel such as working executives from industries and of practising Cost and Management Accountants.	YouTube films showing the working of different industries.	Relevant powerpoint presentations are available on all these topics.	Articles from the Professional Journals such as The Management Accountant, The Chartered Accountant, The Chartered Secretary, The Institute of Chartered Financial Analyst of India	<a href="https://icmai.in">https://icmai.in</a> <a href="http://www.globalcma.in">www.globalcma.in</a> <a href="http://eclm.unipune.ac.in">eclm.unipune.ac.in</a>

### Notes: The breakup of marks in the Examination will be as follows:

- 50 % of the marks are assigned for Theory whereas rest 50 % of the total marks are allotted for Numerical Problems.
- The Numerical Problems will be of simple nature only.
- Areas of numerical problems:
  - Pricing Methods Of Issue Of Material.
  - Methods Of Wage Payment and Incentive Plan.
  - Measurement Of Labour Turnover.

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## SPECIAL ELECTIVE COURSE – VI

**Subject: BUSINESS STATISTICS**

**Course Code: 246(F)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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### Preamble to the syllabus:

Tools and techniques learned in Statistics give a precise way of formulating and analyzing a problem and to make logical conclusions. Concepts and tools introduced in this course are useful to students for higher studies and career in any branch of Economics, Commerce and Management. Professionals working in these fields, wishing to upgrade their knowledge, will also benefit. The stress of the course will be on building the concepts and their applications.

In modern times, Statistics is viewed not as a mere device for collecting numerical data but as a means of developing some techniques for their handling and analysis and drawing valid inferences from them. Statistics provides tools for making decisions when conditions of uncertainty prevail. So it is very useful in various fields like agriculture, business, management, economics, finance, insurance, education, biotechnology and medical science etc.

**Depth of the Course – Basic Knowledge of Elementary Statistics**

### Objective of the Course

1. To understand and Master the concepts, techniques & applications of Statistical Methods Operations Research.
2. To develop the skills of solving real life problems using Statistical Methods and Operations Research.
3. To make students to understand the art of applying statistical techniques to solve some real life problems.
4. To gain knowledge of Statistical Computations

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>Time Series</b>	Introduction, Definition, Components of Time Series, : The Trend, Seasonal variation, Cyclical variation, Irregular variation, Additive Model, Multiplicative Model, Methods of estimating Trends, Moving averages (with periods 3,4,5), Fitting of trend line and second degree curve, Exponential smoothing, Example and problems.	<ol style="list-style-type: none"><li>1. To understand the concept time series and its components.</li><li>2. To understand the interpretation of time series.</li><li>3. To understand the various data fitting methods for time series.</li></ol>
2	<b>Simplex Method</b>	Definition of Linear programming problem, Canonical and standard form duality relation between primal and dual, example and problems on simplex	<ol style="list-style-type: none"><li>1. To understand the simplex method algorithm.</li><li>2. To understand and</li></ol>

		method, meaning of unbounded solution, basic feasible solution, alternate solution, degenerate solution	analyze simplex tables.
3	<b>Transportation Problem</b>	Transportation Problem of minimization type objective function, Introduction, balanced and unbalanced TP, Initial Basic Feasible Solution (IBFS) using NWCR, MMM, VAM, Optimal solution using MODI method. Example and problems.	1. To understand the concept of transportation problems. 2. To understand the methods to obtain IBFS and optimal solution of TP.
4	<b>Assignment Problem</b>	Introduction, concept minimization and maximization, Hungarian method example and problems	1. To understand the concept of assignment problem. 2. To understand the method to obtain optimal solution of AP.

#### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	14	ICT	NA	NA	Students will be able to apply time series techniques to problems from finance and economics.
2	13	ICT	NA	NA	Students will be able to apply simplex algorithm and analysis the solution of LPP.
3	14	ICT	NA	NA	Students will be able to solve transportation problems and obtain optimal solutions. Students will be able to apply TP techniques to real world problems.
4	07	ICT	NA	NA	Students will be able to solve assignment problems. Students will be able to apply AP techniques to real world problems.

#### Method of Evaluation

Subject	Internal Evaluation	External Evaluation
Unit – I	30%	70%
Unit – II	30%	70%
Unit – III	30%	70%
Unit – IV	30%	70%
Total		

Notes: -

1. Internal evaluation is continuous assessment.
2. Internal evaluation shall have following components: -
  - a. At least one test of 20 marks involving objective questions of following type: - multiple choice, true or false, state definitions/concepts, one line answer etc.
  - b. At least one assignment of 05 marks.
  - c. If time and resources permit then there can be power point presentation of group or individual (this component is not compulsory).
  - d. Final score will be average score of all components.

**Text Books:**

1. Unit I – Time Series - Bhowal M. K. and Pronob Barua, Statistics Vol. 1, Asian Books Pvt. Ltd., New Delhi and Cheng-Few Lee, John C. Lee and Alice C. Lee, Statistics for Business and Financial Economics, Springer, New York
2. Unit II – Simplex Method - Hamdy A. Taha, Operations Research: An Introduction, Pearson, New Delhi
3. Unit III – Transportation Problems - Hamdy A. Taha, Operations Research: An Introduction, Pearson, New Delhi
4. Unit IV – Assignment Problems - Hamdy A. Taha, Operations Research: An Introduction, Pearson, New Delhi

**References:**

Sr. No.	Title of the Book	Author/s	Publication	Place
1.	Business Mathematics and Statistics	N.G. Das & Dr. J.K. Das	McFraw Hill	New Delhi
2.	Fundamentals of Business Mathematics	M. K. Bhowal	Asian Books Pvt. Ltd	New Delhi
3.	Operations Research	P. K. Gupta & D. S. Hira	S. Chand Publishing	New Delhi
4.	Mathematics for Economics and Finance: Methods and Modeling	Martin Anthony and Norman Biggs	Cambridge University Press	Cambridge
5.	Fundamentals of Mathematical Statistics	Gupta S. C. and Kapoor V. K.:	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002
6.	Statistical Methods	Gupta S. P.:	Sultan Chand and Sons	23, Daryaganj, New Delhi 110002
7.	Applied Statistics	Mukhopadhyaya Parimal	New Central Book Agency Pvt. Ltd.	Calcutta.
8.	Fundamentals of Statistics	Goon A. M., Gupta, M. K. and Dasgupta, B.	World Press	Calcutta.
9.	Fundamentals of	Gupta S. C. and Kapoor V. K.:	Sultan Chand and Sons	23, Daryaganj, New Delhi

	Applied Statistics			110002
10.	Statistics for Business and Financial Economics	Cheng-Few Lee, John C. Lee and Alice C. Lee	Springer	New York
11.	<i>Operations Research</i>	<i>Kanti Swarup, P. K. Gupta, Man Mohan</i>	Sultan Chand & Sons,	New Delhi

### Suggested references

#### Web reference for Semester I & II

1. [www.freestatistics.tk](http://www.freestatistics.tk)(National Statistical Agencies)
2. [www.psychstat.smsu.edu/sbk00.htm](http://www.psychstat.smsu.edu/sbk00.htm)(Onlinebook)
3. [www.bmj.bmjournals.com/collections/statsbk/index.shtml](http://www.bmj.bmjournals.com/collections/statsbk/index.shtml)
4. [www.statweb.calpoly.edu/bchance/stat-stuff.html](http://www.statweb.calpoly.edu/bchance/stat-stuff.html)
5. [www.amstat.org/publications/jse/jse-data-archive.html](http://www.amstat.org/publications/jse/jse-data-archive.html)(International journal on teaching and learning of statistics)
6. [www.amstat.org/publications/chance](http://www.amstat.org/publications/chance)(Chancemagazine)
7. [www.statsci.org/datasets.html](http://www.statsci.org/datasets.html)(Datasets)
8. [www.math.uah.edu/stat](http://www.math.uah.edu/stat)(Virtual laboratories in Statistics)
9. [www.amstat.org/publications/stats](http://www.amstat.org/publications/stats)(STATS : the magazine for students of Statistics)
10. [www.stat.ucla.edu/cases](http://www.stat.ucla.edu/cases)(Case studies in Statistics).
11. [www.statsoft.com](http://www.statsoft.com)
12. [www.statistics.com](http://www.statistics.com)
13. [www.indiastat.com](http://www.indiastat.com)
14. [www.unstat.un.org](http://www.unstat.un.org)
15. [www.stat.stanford.edu](http://www.stat.stanford.edu)
16. [www.statpages.net](http://www.statpages.net)
17. [www.wto.org](http://www.wto.org)
18. [www.censusindia.gov.in](http://www.censusindia.gov.in)
19. [www.mospi.nic.in](http://www.mospi.nic.in)
20. [www.statisticsofindia.in](http://www.statisticsofindia.in)
21. <https://swayam.gov.in/>

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## SPECIAL ELECTIVE COURSE – VI

**Subject: BUSINESS ENTREPRENEURSHIP (SPECIAL PAPER-I)**

**Course Code: 246(G)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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Unit No.	Unit Title	Contents	Skills to be developed
1	Group Entrepreneurship	<b>Concept-</b> Meaning and Significance- Individual Entrepreneurship V/s Group Entrepreneurship. Advantages and Disadvantages of Group Entrepreneurship. <b>Self Help Group-</b> Definition, Meaning and Evolution- Nature- Scope of SHG, Administration Functions and Operation of SHG's , Do's and Don'ts with suitable illustration of Self Help Group	<ol style="list-style-type: none"><li>1. To understand the concept Individual Entrepreneurship and Group Entrepreneurship along with their significance.</li><li>2. Students should be able to understand its advantages and disadvantages.</li><li>3. To make aware of the concept Self Help Group with its functions to enhance the knowledge in entrepreneurship.</li><li>4. To equip the students with various aspects of entrepreneurship, their competencies like initiative, how to grab the opportunities etc. and qualities with examples.</li></ol>
2	Various Entrepreneurial Opportunities	<b>Role of Service Sector in National Economy-</b> Types of Service Ventures, Service-Industry Management, Success Factors in Service Ventures- Opportunities to Service Industry in Rural and Urban Areas, Distinction Between Service Industry and Manufacturing Industries.	<ol style="list-style-type: none"><li>1. Students should know to service sector and its role in National Economy also have to detail knowledge of benefits of industries in rural and urban areas.</li><li>2. Students should be able to differentiate in service industry and manufacturing conventional industry.</li><li>3. Information on role of each industry will help the students to develop their interest in entrepreneurship.</li></ol>

3.	Study of Entrepreneurs or Enterprises	1. Mr. Radhakishan Damani (D Mart) 2. Mr. Ritesh Agarwal (OYO Hotels) 3. Mr. Sanjeev Bhikchandani (Naukri.com) 4. Mumbaiche Dabewale 5. Mr. Ratan Tata.	1. To study the real life well known examples of entrepreneurs and enterprises in India, to motivate the students to enhance their competencies and create interest in, to become an enterprisers or to be an entrepreneurs.
4.	Challenges in Entrepreneurship Development	<b>Challenges-</b> Social, Cultural, Educational, Political, Economical, International Situation, Cross Cultural Aspects. Measures and Challenges of Globalization and Entrepreneurship Development in India. Effect of Corona Virus on Entrepreneurship.	1. Students should be able to understand the challenges in entrepreneurship development and how these environmental factors affect the business so the students should be known how to overcome on these factors or challenges.

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Collecting information through available literature.	Related Videos and PPTs	Asked students to prepare detailed report.	Understanding the basics difference in Individual Entrepreneur and Group Entrepreneurship and details in SHG.
2	12	Small research on field market survey.	Related Videos and PPTs	Assign small projects (Product Specific) to students in individual or group research to find the requirement of the society. (Product	Students will identify the opportunities of entrepreneurship in the present market, in terms of production, trading or by providing services

				Specific)	to the society.
3	12	Collecting detail information of entrepreneurs and enterprise through available literature, news, reports, etc.	Biographical videos or CDs of entrepreneurs and enterprises	Prepare a small project on at least one entrepreneur to study its 360 degree.	Students will be able to study and investigate the entrepreneur or enterprise on micro level.
4	12	Conducting survey and collecting information of the challenges (internal and external) in the entrepreneurship development.	Interviews of entrepreneurs videos, PPTs	Assign small projects in individual or in group.	Students will practically study the Challenges in entrepreneurship development.

**References:-**

- 1..Business Environment, Francis Cherunilam, Himalaya Publishing House, New Delhi.
- 2..Entrepreneurship Development, Khanna S.S, S. Chand, New Delhi.
- 3.Entrepreneurship Development, Gupta, Shrinivasan, S. Chand, New Delhi
- 4..Dynamics of Entrepreneurship, Desai Vasant, Himalaya Publishing House, New Delhi
- 5..Indian Economy,, Ruddar Datt, K.P.M. Sundharam, S. Chand, New Delhi
- 6 .Udyog,Udyog Sanchalaya, Mumbai
- 7.Vyawasaya Udyojagata, Dr. S. L. Shiragave, Success Publication, Pune

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## SPECIAL ELECTIVE COURSE – VI

**Subject: -MARKETING MANAGEMENT -II Course Code: 246(H)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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### 1. Preamble

As the commercial scenario has totally changed, the need for advanced concepts has increased. Education system also has to change with the rapidly transforming times. Education system is trying to familiarize the students of commerce with advanced concepts in the field so that they are aware of the changing picture.

Marketing Management is an important subject and has been structured to create awareness of the Marketing Management by giving proper insight to the basics of Marketing, so that the foundation of this subject is strengthened for further studies in Marketing.

From this point of view Savitribai Phule Pune University has introduced Choice Based Credit System of course structure. This system will develop the logical independent thinking for accepting the challenges of the changing Business world.

### 2. Objective of the Course

1. To create awareness and impart knowledge about the basics of Marketing Management which is the basic foundation of Marketing subject.
2. To orient the students in recent trends in marketing management.
3. To understand the concept of Green Marketing.
4. To enable students to apply this knowledge in practical by enhancing their skills in the field of Marketing.

Unit No.	Unit Title	Contents	Purpose Skills To Be Developed
1	Green Marketing	<b>1.1</b> Introduction <b>1.2</b> Meaning of Green Marketing <b>1.3</b> Definition of Green Marketing <b>1.4</b> Objectives of Green Marketing <b>1.5</b> Importance of Green Marketing <b>1.6</b> Strategies of Green Marketing <b>1.7</b> Role of Marketing Manager in Green Marketing	To understand the core principles required to create competitive advantage in the marketplace by implementing innovative green



		<p><b>1.8</b> Marketing mix of green marketing</p> <p><b>1.9</b> Principles of success of green products</p> <p><b>1.10</b> Case studies</p>	marketing strategies.
<b>2</b>	<b>E-Marketing</b>	<p><b>2.1</b> Introduction</p> <p><b>2.2</b> Meaning of E-Marketing</p> <p><b>2.3</b> Definition of E-Marketing</p> <p><b>2.4</b> Utility of E-Marketing</p> <p><b>2.5</b> Advantages of E-Marketing</p> <p><b>2.6</b> Limitations of E-Marketing</p> <p><b>2.7</b> Challenges before E-Marketing</p> <p><b>2.8</b> Online and Offline Marketing</p> <p><b>2.9</b> Present status of E-Marketing in India</p> <p><b>2.10</b> Scope for E-Marketing in Indian scenario Online Marketing Strategies</p>	To understand Professionals working in E-Marketing to design and implement Internet marketing plans.
<b>3</b>	<b>Digital Marketing</b>	<p><b>3.1</b> Introduction</p> <p><b>3.2</b> Meaning of Digital Marketing</p> <p><b>3.3</b> Definition of Digital Marketing</p> <p><b>3.4</b> Difference between Traditional Marketing &amp; Digital Marketing</p> <p><b>3.5</b> Digital Marketing Channels</p> <p>3.5.1 Search Engine Optimisation (SEO) Off-page Optimisation On-Page Optimization</p> <p>3.5.2 Social Media Marketing Facebook Marketing Twitter Marketing Google Marketing Video Promotion YouTube Marketing Pinterest Marketing Instagram Marketing</p> <p>3.5.3 Online Paid</p>	To understand how and why to use digital marketing for multiple goals within a larger

		<p>advertisement Google AdWords Facebook Ads Twitter Ads</p> <p>3.5.4 Email Marketing 3.5.5 Mobile App Marketing 3.5.6 Web Analytics 3.5.7 Content Marketing 3.5.8 Affiliate Marketing</p>	
<b>4</b>	<b>Introduction to International Marketing</b>	<p><b>4.1</b> Introduction <b>4.2</b> Meaning of International Marketing <b>4.3</b> Definition of International Marketing <b>4.4</b> Scope of International Marketing <b>4.5</b> Objectives of International Marketing <b>4.6</b> Facets of International Marketing <b>4.7</b> Benefits of International Marketing <b>4.8</b> Limitation of International Marketing <b>4.9</b> Forces influencing International Marketing <b>4.10</b> Forces restraining International Marketing</p>	To expand student's knowledge of significant strategic marketing techniques which will give them great advantage to develop their career in marketing.

#### Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film shows and AV Applications	Project	Expected Outcome
<b>1</b>	<b>14</b>	Power Point Presentation, Article Review, Survey Analysis	AV Application	Market Survey	Students will understand how Green Marketing is necessary for marketers to use resources efficiently, so that organizational objectives are achieved without waste of resources.

2	07	Group Discussion, Quiz, Poster Making	Short Film about Buyer Behaviour, AV Application	Interviews of the Buyer	It will help the student to apply the various techniques and methods of E- Marketing practically.
3	14	Power Point Presentation, Group Discussion, Survey Analysis	AV Application	Market Survey, Interviews of Seller	It will help them to implement the knowledge of Digital Marketing in practical by enhancing their skills in the field of Marketing.
4	13	Power Point Presentation, Group Discussion, Field Visit	Short Film, AV Application	Market Survey, Interviews of Marketing Manager or Head	It will help them to gain a solid understanding of the theoretical and conceptual knowledge of International marketing.

#### Methods of Evaluation

	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit - I	Quiz, Group Discussion	Examination	Environmental Marketing
Unit - II	Practical, Presentation	Examination	Advanced Digital Marketing
Unit - III	Presentation, Group Discussion	Examination	E-Learning Training Course
Unit - IV	Project, Presentation	Examination	Workshop on International Marketing

#### References

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Marketing Management	Philip Kotler	Pearson Publication	
2	Marketing Management	Rajan Saxena	McGraw Hill Education	
3	Principles of Marketing	Philip Kotler	Pearson Publication	
4	Sales & Distribution Management	Tapan K Panda	Oxford Publication	

<b>5</b>	Advertising Management	Rajiv Batra	Pearson Publication	
<b>6</b>	Retail Management	Swapna Pradhan	McGraw Hill Publication	
<b>7</b>	Retail Management	Gibson Vedamani	Jayco Publication	
<b>8</b>	Marketing Management	V. S. Ramaswamy & S. Namakumari	Macmillan Publication	
<b>9</b>	Supply Chain Management	Sunil Chopra, Peter Meindl & D. V. Karla	Pearson Publication	

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## SPECIAL ELECTIVE COURSE – VI

### Subject: AGRICULTURAL AND INDUSTRIAL ECONOMICS -II

Course Code: 246(I)

Total Credits: 04 (Theory 03 + Practical 01=04)

Unit No.	Unit Title	Content	Purpose skills to be developed
1	<b>Economics of Farm Management</b>	3.1 Farm Management, Meaning, Scope, Objectives 3.2 Management of Farm input and Output, Types of Farming 3.3 Economies and Diseconomies of Scale 3.4 Recent Changes in Farm Management- (Farmer Collectives/ Producer Organisation)	<ul style="list-style-type: none"><li>▪ To understand the Concept of Farm Management</li><li>▪ Ability to compare Plant, Firm and Industry</li></ul> To make the students know about the concept of various sector in Industrial Economics.
2	<b>Risk and Uncertainty in Agriculture</b>	2.1 Nature of Risk and Uncertainty in Agriculture 2.2 Types of Risk and Uncertainty (Climatic Variability & Change, Production Risks, Technological) 2.3 Risk and Uncertainty Management Strategies in Agricultural 2.4 Risk Management Through Agricultural Insurance Price	<ul style="list-style-type: none"><li>▪ To get acquainted with Nature and Type of uncertainty in agricultural</li><li>▪ To Equip the students with a measure to control risk and uncertainty in Agriculture</li></ul>
3	<b>Industrial Finance</b>	3.1 Meaning, Scope, Importance of Industrial Finance 3.2 Sources of Industrial Finance: Shares, Debentures, Bonds, Deposits, Loan Role of IDBI, SIDBI, ICICI, State Finance Corporations 3.3 Foreign Capital: Need for Foreign Capital, Foreign Direct Investment, Foreign Institutional Investment, GDR, ADR, External Commercial Borrowings.	<ul style="list-style-type: none"><li>▪ To get acquainted with meaning scope and Importance on Industrial Finance.</li><li>▪ To gain knowledge of various industrial financing institution</li></ul>
4	<b>Industrial Productivity &amp; Efficiency</b>	4.1 Productivity - Norms and Measurement 4.2 Factors Affecting Productivity and Capacity Utilization 4.3 Importance of Productivity in the Competitive Environment. 4.4 Measures Required for Improving	<ul style="list-style-type: none"><li>▪ To understand the Concept productivity</li><li>▪ To make the students know about the Factors affecting Productivity and Measures required for Improving Productivity and efficiency</li></ul>

**Teaching Methodology:**

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project/Practical	Expected Outcome
1	12	Lecture, PPT/ Group Discussion, Library, Problem solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication-SWF E- Content	<ul style="list-style-type: none"> <li>Visit farmer Producer Company and analyse the opportunities and threats of FPO.</li> </ul>	<p><b>After completing this topic , the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>Assess and evaluate the New methods of Collective Farming</li> <li>Identify and choose the newer methods</li> </ul>
2	12	Lecture, PPT/ Group Discussion, Library, Problem solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication-SWF E- Content	<ul style="list-style-type: none"> <li>List of out the Indian Government measure to Control risk and uncertainty in Agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate the effects of Risk and uncertainty in agricultural</li> <li>Different measures to overcome risk and uncertainty in the Agricultural Sector</li> </ul>
3	12	Lecture, PPT/ Group Discussion, Library, Problem solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication-SWF E- Content	<ul style="list-style-type: none"> <li>Information of various Industrial Financial Institution</li> </ul>	<ul style="list-style-type: none"> <li>Analyse the importance and roll of Industrial Financial Institution</li> </ul>
4	12	Lecture, PPT/ Group Discussion, Library, Problem solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication-SWF E- Content	<ul style="list-style-type: none"> <li>Analyse the factor affecting on Industrial Productivity and Efficiency</li> </ul>	<ul style="list-style-type: none"> <li>Describe the Industrial Productivity and Efficiency.</li> <li>Analyse the factor affecting industrial Productivity and Efficiency</li> </ul>

**References:**

1. Raju, V. T, RaoVS. (2017) Economic of Farm Production and Management, Oxford & Ibh, New Delhi.
2. Misra S.K. &V.K.Puri, (2017) Indian Economy, Himalaya Publication house Mumbai.
3. Kavimandan Vijay, (2009) Krushi Arthshastra, Shri Mangesh Prakshan, Nagpur.
4. Barthwal R.R. (1985), Industrial Economics, Wiley Eastern Ltd., New Delhi.
5. Barthwal R.R.(2004) Industrial Economics Introductory Text Book, New Age International Limited, Kanpur.
6. W. Stewart Howe, Industrial Economics An Applied Approach, Springar Link, Switzerland.
7. Singh, A and A.N. Sandhu (1988), Industrial Economics, Himalaya Publishing House, Bombay.
- 8.Jain S.C. Industrial Economics, (Edition: First, 2019), Publisher: Kailash Pustak Sadan, 30 Shah Building, Hamidia Road, Bhopal (M.P.)

**Suggested Web references:**

<https://www.youtube.com/user/cecedusat>

<https://www.swyamprabha.gov.in/>

[http://14.139.13.96:8080/lectures.aspx?pno=Paper05\(O\)](http://14.139.13.96:8080/lectures.aspx?pno=Paper05(O))  
Economics

-UGC CEC E Contain on Agricultural

[http://14.139.13.96:8080/lectures.aspx?pno=Paper06\(O\)](http://14.139.13.96:8080/lectures.aspx?pno=Paper06(O))  
Economics

-UGC CEC E Contain on Industrial

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## SPECIAL ELECTIVE COURSE – VI

**Subject: DEFENSE BUDGETING, FINANCE AND MANAGEMENT-II**

**Course Code: 246(J)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### Objectives:

1. To understand the relationship between economy and defence expenditure
2. To create awareness about recent trends in India's Defence Expenditure
3. To understand the importance of War Finance and defence management
4. To create awareness about different challenges to India's defence management.

Unit No.	Topic	No. of Lectures	Teaching Method	Proposed Skill to be Developed
I	<b>Defence Expenditure</b> 1.1 Salient features of Indian Economy 1.2 Analysis of India's Defence Spending from 1947 to till date. 1.3 Determinants of Defence Expenditure 1.4 Recent Trends in India's Defence Expenditure	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Field Visit	The learners will be able to analyse the methodology of defence spending in India.
II	<b>War Potential</b> 2.1 Concept of War Potential 2.2 Industrial Power 2.3 Elements of War Potential 2.4 Cost of War 2.5 Importance of DRDO in War	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Field Visit	The learners will be able to understand the role of Industrial Power and their relationship to national security.
III	<b>War Finance</b> 3.1 Sources of Finance (Domestic and Foreign) 3.2 Peace Time Economy (Merits and Demerits) 3.3 War Time Economy (Merits and Demerits) 3.4 Rationing 3.5 Inflation	12	Lecture, PPT, Group Discussion, Library Work, Assignment, Field Visit	The learners will be able to know the importance and methodology of War Finance



<b>VI</b>	<b>Rationale of Arms Production in the Third World Countries</b> 4.1 Third World Countries : Meaning & Concept 4.2 Relevance of the Arms Production to the Third World Countries 4.3 Military Industrialization	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignment, Field Visit	The learners will be able to understand the rationale of armament production in third world countries
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**Reference:**

1. Laxmi Y, Trends in Defence Expenditure, New Delhi, ADS 1988
2. Ron Mathew, Defence Production in India, New Delhi, ABC-1989
3. Alok Ghosh, Indian Economy; Its Nature & Problem, New Book Hall-Kolkata-1994
4. S. K. Mishra & V.K. Puri , Indian Economy, Himalaya Publishing House-1998, New Delhi.
5. K.Subramanyam. Perspectives in Defence Planning, Abhinav Publishing Company, New Delhi-1972
6. Raju G. C.Thomas, The Defence of India –A budgetary perspective of strategy and politics, The Macmillan Company of India, New Delhi
7. A. N. Agarwal Economic Mobilization of National Defence ,Asia Publishing House, London 1968 V. N. Shrinivas, Budgeting for Indian Defence, New Delhi, K W Publishers, 2008
8. Amiya Kumar Ghosh, Defence Budgeting & Planning in India: The Way Forward, New Delhi, 2006
9. Alain C. Einthoven & K. Wayne Smith, How much is Enough ?, Shaping the Defence Budget 1961-1969s ,New Delhi, RAND Corporation
10. H.C. Bhatia, Public Finance (Ed), Vikas Publishing House, New Delhi -2006
11. S. P. Ganguly, Fundamentals of Government Budgetary in India, 3rd Ed ,New Delhi, Concept Publishing Co.-2007
12. Jaswant Sing, Defending India, Chennai, MacMillan India Ltd, 1999
13. H. B. Mishra, Defence Programmes of India, Delhi, Author press, 2000
14. Laxmi Y, Trends in Defence Expenditure, New Delhi, ADS 1988
15. Ron Mathew, Defence Production in India, New Delhi, ABC-1989
16. Alok Ghosh, Indian Economy; Its Nature & Problem, New Book Hall-Kolkata-1994
17. S. K. Mishra & V.K. Puri , Indian Economy, Himalaya Publishing House-1998, New Delhi.
18. K.Subramanyam. Perspectives in Defence Planning, Abhinav Publishing Company, New Delhi-1972
19. Raju G. C.Thomas, The Defence of India –A budgetary perspective of strategy and politics, The Macmillan Company of India, New Delhi
20. A. N. Agarwal Economic Mobilization of National Defence ,Asia Publishing House, London 1968 V. N. Shrinivas, Budgeting for Indian Defence, New Delhi, K W Publishers, 2008

21. Amiya Kumar Ghosh, Defence Budgeting & Planning in India: The Way Forward, New Delhi, 2006
22. Alain C. Einthoven & K. Wayne Smith, How much is Enough ?, Shaping the Defence Budget 1961-1969s ,New Delhi, RAND Corporation
23. Jaswant Sing, Defending India, Chennai, MacMillan India Ltd, 1999
24. V. N. Shrinivas, Budgeting for Indian Defence, New Delhi, K W Publishers, 2008
25. H.C. Bhatia, Public Finance (Ed), Vikas Publishing House, New Delhi -2006
26. S. P. Ganguly, Fundamentals of Government Budgetary in India, 3rd Ed ,New Delhi, Concept Publishing Co.-2007
27. K. Subramanyam , Perspective in Defence Planning, New Delhi, Abhinav Publishing , 1972
28. Jaswant Sing, Defending India, Chennai, MacMillan India Ltd, 1999
29. H. B. Mishra, Defence Programmes of India, Delhi, Author press, 2000

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## SPECIAL ELECTIVE COURSE – VI

**Subject: INSURANCE, TRANSPORT AND TOURISM - II (TOURISM)**

**Course Code: 246(K)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

### Objectives:

1. To acquaint students with the concepts of tourism.
2. To create awareness about different forms of tourism.
3. To make the students aware of career opportunities in the field of tourism.
4. To aware the students about the growth, scope and challenges of tourism in India.

Unit No.	Topic	No. of Lectures	Teaching Method	Proposed skills to be developed
1.	<b>Introduction</b> 1.1 Concept of Tourism 1.2 Types of Tourism 1.3 Factors affecting Demand for Tourism 1.4 Nature of Tourism 1.5 Significance of Tourism 1.6 Inter-regional and Intra-regional Tourism 1.7 Role of Government in Tourism Development	12	Lecture, PPT, Group Discussion, Library Work, Assignment	Understandi ng the concept of tourism
2.	<b>Forms of Tourism</b> 2.1 Agritourism 2.3 Health Tourism 2.4 Heritage Tourism 2.5 Eco Tourism 2.6 Cultural Tourism 2.7 Religious Tourism 2.8 Educational Tourism 2.9 Business Tourism 2.10 Sports Tourism 2.11 Family Tourism 2.12 Sea Tourism	12	Lecture, PPT, Group Discussion, Library Work, Study Visit to Tourism centre	Understandi ng the forms of tourism
3.	<b>Impact of Tourism</b> 3.1 Globalization and Tourism 3.2 The Economic Impact of Tourism 3.3 The Socio-cultural Impact of Tourism 3.4 Environmental Impact of Tourism 3.5 Career Opportunities in Tourism	10	Lecture, PPT, Group Discussion, Library Work,	Understandi ng the impacts of tourism

4.	<b>Tourism in India</b> 4.1 Growth of Tourism in India 4.1.1 Contribution to Gross Domestic Product 4.1.2 Employment Generation 4.1.3 Foreign Tourist Arrivals (FTAs) 4.1.4 Share of India in International Tourist Arrivals (ITAs) in World 4.1.5. Foreign Exchange Earnings (FEEs) from Tourism in India 4.2 Tourism Infrastructure Development in India 4.3 Scope of Tourism in India 4.4 Challenges before Indian Tourism Sector 4.5 Measures adopted by Government for Development of Tourism in India	14	Lecture, PPT, Group Discussion, Panel Discussion, Library Work, Assignment	Understanding the Tourism growth and career opportunities in tourism sector in India
	<b>Total</b>	<b>48</b>		

### References:

#### Books:

1. Arora S. (2007), *Adventure Tourism and Sports Issues and Perspectives*, Cyber Tech Publications, New Delhi.
2. A Satish Babu (2008), *Tourism Development in India*, APH Publishing, New Delhi.
3. Badan B. S. and Bhatt H. (2007), *Eco-Tourism*, Common Wealth Publishers, New Delhi
4. Batra G.S. and Agarwal R.C. (2002), *Tourism Promotion and Development*, Deep & Deep Publications Pvt. Ltd. Delhi
5. Jaypalan N. (2001), *An Introduction to Tourism*, Atlantaic Publishers and Distributers, New Delhi.
6. Leonard J. Lickorish & Carson L. Jenkins (2011), *An Introduction- Tourism*, Routledge, New York.
7. Nickerson N. (1996), *Foundations of Tourism*, Prentice Hall, New Delhi.
8. Peter Mason (2003), *Tourism Impacts, Planning and Management*, Butterworth-Heinemann, Burlington.
9. Selvam M. (1989), *Tourism Industry in India*, Himalaya Publishing House, Mumbai.
10. Shelly L. (1991), *Tourism Development in India*, Arihant Publishers, Jaipur.

#### Reports and Other:

1. Annual Report 2017-18, 2018-19 and 2019-20, Ministry of Tourism Government of India.
2. Government of India, Economic Survey 2019-20.
3. India Tourism Statistics at a Glance, 2019, Ministry of Tourism, Government of India.
4. Working Paper, Services Sector: Challenges, Issues and Policy Suggestions with special focus on (IT-BPM, Tourism, Shipping, Real Estate Services and Project Exports), December 2017 Government of India, Ministry of Finance, Department of Economic Affairs, Economic Division.
5. <https://destinationreporterindia.com>
6. <http://tourism.gov.in>

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## SPECIAL ELECTIVE COURSE – VI

**Subject: - COMPUTER PROGRAMMING AND APPLICATION II**

**Course Code: 246(L)**

**Total Credits: 04 (Theory 03 + Practical 01=04)**

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### Relational Database Management System (Semester – IV)

1. Objectives of the course: To aware principles of databases, database management operations, fundamental concepts of RDBMS.

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Introduction to Database management Systems</b>	1.1 Introduction Information, Data and file 1.2 Need and Importance of Database management System 1.3 Definition of DBMS and Types (DDBMS, RDBMS) 1.4 Keys( Super key, Candidate, Primary, Foreign Key) 1.5 Working with tables (create and Manage table) 1.6 Introduction to DML, TCL, DDL, DCL 1.7 Introduction to RDBMS 1.8 Advantages and Disadvantages of RDBMS	1. Learner able to aware with Information, Data and file 2. Learner able to aware with Data base Management System ,its Type and need 3. Learner able to aware and able to working with table by specifying Key 4. Learner able to aware with Relational database management systems with advantages and Disadvantages

2	<b>Introduction to SQL (Structure Query Language)</b>	2.1 Introduction to SQL 2.2 SQL Language Elements 2.3 Classification of SQL commands 2.4 Applying Constraints 2.5 Aggregate Functions 2.6 Group by Having Clause 2.7 Creating Other Database Objects (Views, Indexes, Sequences, Synonyms)	1. Learner able to aware with Structure Query Language and its Functionality. 2. Learner able to aware and able working with view ,Index Sequence and Synonyms of Table or data
3	<b>Introduction to (Sub queries, SET Operators, Date time Functions)</b>	3.1 Enhancements to GROUP BY function (ROLLUP and CUBE Operator) 3.2 SET OPERATORS (INTERSECT, UNION, UNION ALL, MINUS Operator) 3.3 DATETIME FUNCTIONS (Parsing Date and Time) 3.4 JOINS ( Inner Join, Equi-Join, Non Equi, Self- join, Outer Joins)	Learner able to aware and able to handle to (Sub queries, SET Operators, Date time Functions)
4	<b>Advanced Sub-queries Security Privileges, and Introduction Database connectivity</b>	4.1 Advanced Sub queries 4.1.1. Introduction 4.1.2 Multiple Column Sub queries ( Coding Sub queries in the FROM clause) 4.1.3 Scalar Sub queries 4.1.4 Correlated Sub query 4.1.5 WITH clause (Functions of the WITH clause) 4.1.5 Hierarchical Queries 4.2 Controlling User Access 4.2.1. System privileges 4.2.3 User Privileges (GRANT/REVOKE PRIVILEGES) 4.3 Introduction to Data base connection (Open Database Connectivity, ADO, ADO.NET , ODBC, JDBC)	1. Learner able to aware and able to handle to (Sub queries with multiple Columnar, Correlated contains and with clause for prepare report form multiple Table. 2. Learner able to aware and able to handle to user access control

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Use ICT or presentation on DBMS /RDBMS	U-tube Tutorial on DBMS /RDBMS		Familiar with DBMS /RDBMS
2	12	Use ICT or presentation on SQL	U-tube Tutorial SQL	One case study on SQL Queries	Familiar with SQL
3	12	Use ICT or presentation on SQL Queries	U-tube Tutorial SQL Queries		Familiar with SQL Queries
4	12	Use ICT or presentation SQL Privileges and	U-tube SQL Privileges and	Prepare mini project (Paper work) on online	

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation
Unit – I	30	70
Unit – II	30	70
Unit – III	30	70
Unit – IV	30	70

### Guidelines for Examination:

[5].Term End Exam (30 Marks):

[6].To be conducted by college as per rules provided by University of Pune. Semester Exam 70 Marks):

[7].To be conducted by University of Pune at the end of the academic year.

[8].Passing marks for the course are 40 (Out of which **minimum 32** marks are compulsory in Semester Examination).

**References:-**

1. Fundamentals of Database Systems (4th Ed) By: Elmasri and Navathe
2. Database System Concepts (4th Ed) By: Korth, Sudarshan, Silberschatz Practical PostgreSQL O'REILLY
3. Beginning Databases with PostgreSQL, From Novice to Professional, 2nd edition By Richard Stones , Neil Matthew, Apress
4. SQL: THE COMPLETE REFERENCE 3rd Edition Author: James Groff, Paul
5. Weinberg, Andy Opper Tata Mc-graw Hill Publishing Co.ltd.-New Delhi ISBN : 9781259003882
6. SQL, PL/SQL: The Programming Language Of Oracle (With CD-ROM) 4th RevisedEdition Author: Ivan Bayross BPB PUBLICATIONS ISBN-13 9788176569644
7. Oracle Database 11G: The Complete Refere 1st Edition Author: KEVIN LONEY Tata Mcgraw Hill Education Private Limited ISBN-13 9780070140790
8. MySQL, The Complete Reference By Vikram Vaswani, ISBN 0-07-222477-0, Tata McGraw Hill The Complete Reference in Microsoft Access 2007, Andersen, ISBN13:9780070222854
9. Learning MySQL by O'reilly, Seyed M.M Tahaghogi, Hugh E. Williams, Oreilly Media

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**Savitribai Phule Pune University, Pune**  
**Revised syllabi (2019 Pattern) for three years B. Com. Degree course**  
**Credit Base Choice System (CBCS)**

**Syllabus for T.Y.B. Com. Semester –V**

**Subject Name: Business Regulatory Framework**

**Course code: - 351**

**Credit - 3**

**Depth of the program – Fundamental Knowledge**

**Preamble**

Savitribai Phule Pune University and UGC has initiated several measures to bring efficiency and quality education to the students. The important measures taken to enhance academic standards and quality in higher education include innovation and improvements in curriculum, teaching-learning process, examination and evaluation systems, besides governance and other matters.

The Business Regulatory framework course provides the student with basic information about the Indian legal system and dispute resolution, and their impact on business. The understanding of legal system is a prerequisite for better decision making. The course gives exposure to students in the areas of legal principles of business contract, aspects in the formation, running and winding up of partnership and LLP, the scope and the issues associated with partnerships, application of sale of goods act and E Contract regulations in India. This course focuses on orientation of students to legal studies from the point of view of basic concepts of business law and legal system in India. The course will be useful to the commerce students to understand and apply the business laws in commercial situations.

**Objectives of the Program**

1. To provide conceptual knowledge about the framework of business Law in India.
2. To orient the students about the legal aspect of business.
3. To create awareness among the students about legal environment relating to the Contract Law, Partnership Act, Sale of Goods Act in India.
4. To understand the emerging issues relating to e-commerce, e-transaction issues and E Contracts

5. To seek the career opportunity in corporate sector relating to business law in India.
6. To acquaint students with the basic concepts, terms & provisions of Mercantile and Business Laws.

### Course Contents

nit No	Unit Title	Contents	Purpose Skills to be developed
1	The Indian Contract Act, 1872	1. The nature of the contract, General Principles 2. Definitions and elements of Contract- consideration, other essential elements of a valid contract, 3. Legality of object and consideration. , Void Agreements. , Discharge of contract. 4. Performance of the contract and breach of contract and remedies (Including damages, meaning, kinds and rules for ascertaining damages)	Understand the concept of Contract and its contents. Equip the students with knowledge of nature and performance and breach of Contracts.
2	The Indian Partnership Act, 1932	1. General Nature of Partnership , Rights, and duties of partners, Types of partner 2. Registration and dissolution of a firm 3. Limited Liability Partnership Act 2008: Limited Liability Partnership (LLP); Concept, Nature and Advantages, Difference between LLP and Partnership Firm, Difference between LLP and company 4. Incorporation of LLP, Partners and their relations, Liability of LLP and Partners (Section 27). Financial Disclosure by LLP, Contributions (Section 32), Assignments and Transfer of Partnership Rights (Section 42) Conversation to LLP (Section 55), Winding-up and dissolution (Section 63 & 64)	Understand the nature of partnership ,Rights and duties of Partner Handling the registration and dissolution of the partnership. Acquint Knowledge about LLP

3	The Sale of Goods Act, 1930	<ol style="list-style-type: none"> <li>1. Formation of the contract of sale , Concept and Essentials. Sale and agreement to sale.</li> <li>2. Goods – Concept and kinds ,Conditions and Warranties</li> <li>3. Transfer of ownership and delivery of goods</li> <li>4. Unpaid seller and his rights and Remedial Measures.</li> </ol>	Compressive understanding about the sale of Goods Act. Acquaint knowledge about ownership and delivery of goods.
4.	<b>Arbitration and Conciliation:</b>	<ol style="list-style-type: none"> <li>1. Concept of Arbitration &amp; Conciliation.</li> <li>2. Definition &amp; Essentials of Arbitration Agreement. Power and Duties of Arbitration. Conciliation proceeding. (Provisions of Arbitration &amp; Conciliation Act,1996 in nutshell with Amendment of 2021 to be covered.)</li> </ol>	To give Comprehensive insight about the emerging trend of Arbitration and conciliation and its regulatory mechanism

**[Note: Recent amendments in the Acts and relevant Landmark cases decided by courts are expected to be studied]**

### Teaching Methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	20	Indian Contract Act , Document , PPT, Narration, Case Study	You Tube about Contract Act	Report Review	Acquaint knowledge and maturity to understand Contract Law.
2	09	Project making, Street play, slogan , Quiz Competition,	Use of You tube, Review of Movie	New Emerging Issues in Principle documents of Partnership Deed	To Acquaint knowledge and application of Partnership Deed.

3	14	Case study, Poster making, jingles, Survey Analysis Article review	Case Analysis, Mute court	Recent amendments and silent feature Sale of Goods Law	To get training to face emerging issues relating Sale of Goods Act.
4	05	Virtual Learning, Group Discussion, Assignments on E signature Interview of Arbitrator.	Film on Arbitration and conciliation	Project on Arbitration and conciliation	To give Comprehensive insight about the emerging trend of Arbitration and conciliation and its regulatory mechanism

### Methods of Evaluations

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	Continuous Evaluation,, MCQ, Assignment, Oral examination	As per University Guidelines	Seminar on Contract Act and Case study
Unit – II	Written examination, Qui, Presentations, Projects , Assignments , Tutorials g. Oral examination	As per University Guidelines	Awareness program

Unit – III	Continuous Evaluation, MCQ, Assignment.	As per University Guidelines	Visit to company secretary's office
Unit – IV	Continuous Evaluation, Case Study, Literature Review , E procedure, Oral examination.	As per University Guidelines	Seminar on Arbitration and conciliation

## References

- 1) Business and Corporate Law: - Dr. Kaur Harpreet, Lexis Nexis (2013)
- 2) Laws for Business, Sulphery M.M.&Basheer, PHI Learning Pvt. Ltd., Delhi. (2013)
- 3) Business Laws: - Kuchhal M.C.&KuchhalVivek, Vikas Publishing House (2013)
- 4) Business and Commercial Laws:-Sen And Mitra , The World Press Pvt. Ltd.(2018)
- 5) An Introduction to Mercantile Laws:-N.D.Kapoor , Sultan Chand and Sons,(2014)
- 6) Business Laws: - N.M.Wechlekar , Everest Publishing House (2016)
- 7) Business Regulatory Law, Chaudhari,Zalte, Bhawari,Dagade, Prashant Publication (2021)
- 8) Arbitration & Conciliation Act, 1996 (Lawmann's), Kamal Publishers (2017)
- 9) <https://www.indiacode.nic.in/bitstream/123456789/2187/1/A1872-9.pdf>
- 10) [https://legislative.gov.in/sites/default/files/A1930-3\\_0.pdf](https://legislative.gov.in/sites/default/files/A1930-3_0.pdf)
- 11) [https://www.mca.gov.in/Ministry/actsbills/pdf/Partnership\\_Act\\_1932.pdf](https://www.mca.gov.in/Ministry/actsbills/pdf/Partnership_Act_1932.pdf)
- 12) <https://egazette.nic.in/WriteReadData/2021/225832.pdf>

**Revised Syllabus (2019 Pattern) for three years B. Com. Degree Course (CBCS)**

**T. Y. B. Com. (Semester- V)**

**Paper: ADVANCED ACCOUNTING – I**

**Code: 352**

**No. of lectures: 48**

**Preamble**

In today's modern age, the Corporate, Banking and Investment sectors are the major contributors towards development of Indian Economy. In the last two decades, these sectors have seen the largest and fastest growing sectors and enormous growth in Indian economy. In this growth, accounting plays an energetic role and to ensure safeguard of the interest of the stakeholders and the society. It is, therefore, important to educate the students of commerce in the accounting practices adopted by different organizations. It helps stakeholders make better business decisions and deal with problems by providing them with accurate financial information. By studying the Learning Path in Accounting – Advance Concepts you will gain a deeper understanding of the accounting process and what it involves.

**Objectives of the course**

1. To acquaint the student with knowledge about various concepts, objectives, and applicability of some important accounting standards.
2. To develop the knowledge among the students about reorganization of business regarding restructuring the capital.
3. To update the students with knowledge for preparation of final accounts of a Banking Companies with the provisions of Banking Regulation Act 1949.
4. To empower to students with skills to prepare the investment account in simple and summarized manner.

**Objectives of the Program**

1. To instill the knowledge about accounting procedures, methods and techniques.
2. To impart students' knowledge of various Advanced Accounting Concepts.

**Depth of the program – Fundamental Knowledge**

## CONTENTS

Unit No.	Unit Title	Contents	Purpose skills to be developed
1	<b>Accounting Standards &amp; Financial Reporting</b>	<ul style="list-style-type: none"> <li>- Brief Review of Indian Accounting Standards</li> <li>- Introduction to AS- 3, AS-12 and AS-19 with simple numerical.</li> <li>- Introduction to IFRS - Fair Value Accounting.</li> </ul>	<ul style="list-style-type: none"> <li>- To develop conceptual understanding about various Accounting Standards and its applicability and also introduce the students about IFRS – Fair Value Accounting.</li> </ul>
2	<b>Accounting for Capital Restructuring (Internal Reconstruction)</b>	<ul style="list-style-type: none"> <li>- Meaning and Concept of Capital Restructuring, Types of Capital Restructuring, Meaning &amp; of Internal Reconstruction</li> <li>- Accounting Entries: Alteration of Share Capital, Reduction of Share Capital, Reduction in Liabilities, Cancellation of Expenses, Losses etc.</li> <li>- Preparation of Balance Sheet after Internal Reconstruction</li> </ul>	<ul style="list-style-type: none"> <li>- To develop conceptual understanding about accounting for capital restructuring in the form of internal reconstruction.</li> <li>- To develop the skill &amp; upgrade the knowledge regarding reorganization of venture capital and it's recording.</li> </ul>
3	<b>Final Accounts of Banking Companies</b>	<ul style="list-style-type: none"> <li>- Introduction of Banking Company, Legal Provisions regarding Non-Performing Assets (NPA) - Reserve Fund - Acceptance, Endorsements &amp; Other Obligations - Bills for Collection – Rebate on Bills Discounted – Provision for Bad and Doubtful Debts</li> <li>- Vertical form of Final Accounts as per Banking Regulation Act 1949.</li> <li>- Simple Numerical on Preparation of Profit &amp; Loss A/c and Balance Sheet in vertical form.</li> </ul>	<ul style="list-style-type: none"> <li>- To understand the various legal provisions regarding banking companies.</li> <li>- To understand the procedure regarding preparation of final accounts of banking companies.</li> </ul>
4	<b>Investment Accounting</b>	<ul style="list-style-type: none"> <li>- Meaning &amp; Introduction, Classification of Investments,</li> <li>- Meaning &amp; Calculation of the Concept of Acquisition Cost &amp; Carrying Cost of Investment,</li> <li>- Calculation of Profit/loss on disposal of investments.</li> </ul>	<ul style="list-style-type: none"> <li>- To understand the meaning of different costs incurred in investment business.</li> <li>- To develop the knowledge and skill regarding Investment Accounting.</li> </ul>

## Teaching Methodology

Unit No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	Use of e- contents, online lectures and PowerPoint Presentations	Lectures of experts available on YouTube and other digital platforms	Individual assignment report	Developing understanding on applicability of various Accounting Standards
2	12	Use of e- contents, online lectures and MCQ based Quiz, PowerPoint Presentations	Lectures of experts available on YouTube and other digital platforms	Individual assignment of solving practical problems	Knowledge about of the Accounting for Capital Restructuring
3	16	Use of e- contents, online lectures, MCQ based Quiz, PowerPoint Presentations	Study of the Final Accounts of Banking companies from its Annual Report	Individual assignment of solving practical problems	Conceptual Clarity and Practical understanding of preparation of final accounts of banking companies.
4	10	Use of e- contents, online lectures and PowerPoint Presentations	Lectures of experts available on YouTube and other digital platforms	Individual assignment of solving practical problems	Developing knowledge about Investment Accounting

## Method of Evaluation

Unit	Internal Evaluation	External Evaluation	Suggested Add on Course
1	MCQ / Small Practical Problem	As per University norms	--
2	Practical Problem	As per University norms	--
3	Practical Problems written Test / MCQ	As per University norms	--
4	MCQ / Small Practical Problem	As per University norms	Certificate Course on Share Trading



## References:

### ❖ List of Books Recommended:

1. Advanced Accounts: By M.C. Shukla & S.P. Grewal (S.Chand & Co. Ltd.)
2. Advanced Accountancy: By S. P. Jain & K.N. Narang (Kalyani Publishers)
3. Advanced Accountancy: By R. L. Gupta & M. Radhaswamy (Sultan Chand & Sons)
4. Company Accounts: By S.P. Jain & K.L. Narang
5. Advanced Accounts: By Paul Sr.
6. Corporate Accounting: By Dr. S. N. Maheshwari & S.K. Maheshwari
7. Corporate Accounting: By Mukharji & Hanif
8. Accounting Standards –as issued by Institute of Chartered Accountants of India

### ❖ List of Videos Recommended:

Unit	Topic Name	Links
1	Accounting Standards & Financial Reporting	<a href="https://youtu.be/zxSaR3JNQzE">https://youtu.be/zxSaR3JNQzE</a> <a href="https://youtu.be/d8QaGSKWkuU">https://youtu.be/d8QaGSKWkuU</a> <a href="https://youtu.be/HmAzVMIYf5U">https://youtu.be/HmAzVMIYf5U</a> <a href="https://youtu.be/g40Po3TbHcM">https://youtu.be/g40Po3TbHcM</a> <a href="https://youtu.be/6d7wrVPmaPs">https://youtu.be/6d7wrVPmaPs</a> <a href="https://youtu.be/OVNO8qHIs?list=TLQOMDEwNjIwMjGQcgyNjkn5tw">https://youtu.be/OVNO8qHIs?list=TLQOMDEwNjIwMjGQcgyNjkn5tw</a> <a href="https://youtu.be/mvbpTW9WUPk">https://youtu.be/mvbpTW9WUPk</a>

2	<b>Accounting for Capital Restructuring (Internal Reconstruction)</b>	<a href="https://youtu.be/MWca2VO8D7o">https://youtu.be/MWca2VO8D7o</a> <a href="https://youtu.be/6ZBxQJobApI">https://youtu.be/6ZBxQJobApI</a> <a href="https://youtu.be/Ta2tUaTJ5t4?list=RDCMUCILLZnneWNoJYW8iSqbuECw">https://youtu.be/Ta2tUaTJ5t4?list=RDCMUCILLZnneWNoJYW8iSqbuECw</a>
3	<b>Final Accounts of Banking Companies</b>	<a href="https://youtu.be/nF_P5dxGZCI">https://youtu.be/nF_P5dxGZCI</a> <a href="https://youtu.be/TVrj-tJo3qs">https://youtu.be/TVrj-tJo3qs</a>
4	<b>Investment Accounting</b>	<a href="https://youtu.be/pMe8ymUs2gc">https://youtu.be/pMe8ymUs2gc</a> <a href="https://youtu.be/ghCZzJCgFd8">https://youtu.be/ghCZzJCgFd8</a>

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**Savitribai Phule Pune University, Pune**  
**Third Year, B.Com. (Core Course)**  
**Revised Syllabi for Three Years B. Com. Degree Course**  
**(CBCS-2019 Pattern) (w.e.f. 2021-22)**

**Semester - V**

**Course Code: 353**

**Subject: Indian & Global Economic Development**

**Total Credits: 3**

**Preamble:**

An approach to Indian and Global Economic Development is to examine the Indian economic development policies in context with global economies. This paper aims to provide knowledge about economic development of India, economic development policies that are applied for development of economy in general and development of various sectors in particular. It also aims to develop ability of the students to analyze the development of Indian economy as compared to global economies through the comparison of different sectors like agriculture, Industry, service and availability of resources and its quality.

**Scope of the Programme –**

Knowledge related to development policies of Indian Economy as compared to World Economies.

**Objectives:**

1. To develop ability to analyze economic development process of India.
2. To impart knowledge about the relevance of economic practices in modern competitive world.
3. To help the students develop a sound theoretical foundation for their future academic ventures.

**Course Outcomes:-**

1. Students will be able to understand present Economic Scenario of Indian Economy as well as World Economy.
2. Students will be able to understand the various aspects of development in Agricultural, Industrial and service sector in India.
3. Student will be able to critically evaluate the role of India in international economy.
4. Students will be able to evaluate the working of international financial organization and institutions.

Unit No.	Topic	Purpose & Skills to be Developed
Unit 1	<b>Indian and Global Economy</b>	<p><b>Purpose:</b> To make the students aware of concept of Development. To help the students compare Indian Economy with other developed and competitive economies.</p> <p><b>Skills:</b> Analyze &amp; think critically, develop writing skills.</p>
	1.1 Economic Development: Meaning and Indicators	
	1.2 Developed and Developing Countries: Meaning	
	1.3 Characteristics of Indian Economy as an Emerging Economy	
	1.4 Comparison of the Indian Economy with World Economy with reference to: National Income, Population, Agriculture, Industry and Service Sector	
Unit 2	<b>Agricultural Development In India</b>	<p><b>Purpose:</b> To give the knowledge about varied aspects of agricultural sector in India.</p> <p><b>Skills:</b> Analyze &amp; think critically, developing critical and analytical writing skills.</p>
	2.1 Indian Agriculture: Role and Progress	
	2.2 Low Productivity of Indian Agriculture: Causes and Measures	
	2.3 Agricultural Finance: Need and Sources	
	2.4 Agricultural Marketing: Problems and Measures	
	2.5 New Farm Act 2020	
	2.6 Organic Farming and Contract Farming: Meaning and Advantages	
Unit 3	<b>Industrial Development in India</b>	<p><b>Purpose:</b> To give the knowledge about importance and status of Industrial Development in Indian Economy. To update the students about the latest policies for Industrial development in India.</p> <p><b>Skills:</b> Analyze &amp; think critically, developing critical writing skills.</p>
	3.1 Role of Industrialization in Indian Economic Development	
	3.2 New Industrial Policy 1991	
	3.3 Role of Micro, Small and Medium Scale Enterprises (MSMEs) in India	
	3.4 Role and Problems of Public Sector Enterprises in India	

	<b>3.5 New Schemes for Industrial Development: Make in India, Start- up India and Stand up India</b>	
<b>Unit 4</b>	<b>Service Sector and Infrastructural Development in India</b>	<p><b>Purpose:</b>To provide the knowledge about importance and status of Service Sector and Infrastructure Development in Indian Economy</p> <p><b>Skills:</b> Analyze &amp; think critically, developing critical writing skills.</p>
	<b>4.1 Role and Growth of Service Sector in India</b>	
	<b>4.2 Meaning and Effects of Digital Economy, E Commerce and E-Finance</b>	
	<b>4.3 Role of Infrastructure in Economic Development of India</b>	
	<b>4.4 Role of Public and Private Sector in Infrastructural Development</b>	

### Teaching Methodology:

Unit No.	No. of Lectures	Innovative methods to be used	Film Shows and AV Applications	Project	Expected Outcome
1	10	<ul style="list-style-type: none"> <li>Open Book discussion</li> <li>Digital lectures</li> <li>Reading</li> <li>Projects</li> </ul>	You Tube lectures on Development Theories and Indian Economic Development	Difference in goals of developed and developing economies	<ul style="list-style-type: none"> <li>Students will understand basic concepts of Development.</li> <li>Will be able to analyze and interpret critically</li> </ul>
2	14	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Case studies</li> <li>Problem solving based learning</li> </ul>	<ul style="list-style-type: none"> <li>You Tube lectures,</li> <li>Lectures on SWAYAM Portal</li> </ul>	<ul style="list-style-type: none"> <li>Difficulties in Agricultural development in India.</li> <li>Features of Agricultural Policy</li> </ul>	<ul style="list-style-type: none"> <li>Will know Difficulties in agricultural development in India.</li> <li>Will understand the sources of agro finance marketing</li> </ul>
3	12	<ul style="list-style-type: none"> <li>Pair learning</li> <li>Group discussion</li> <li>Open book</li> </ul>	<ul style="list-style-type: none"> <li>Teacher oriented PPTs.</li> <li>You tube lectures</li> </ul>	<ul style="list-style-type: none"> <li>Critical evaluation of Industrial Policy</li> <li>Analysis of Indian Industrial sector</li> </ul>	<ul style="list-style-type: none"> <li>Will understand New Industrial Policy</li> <li>Able to interpret the features of Indian Industrial Sector</li> </ul>

		discussion			
4	12	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Teacher driven power point presentation</li> </ul>	<ul style="list-style-type: none"> <li>You tube lectures</li> <li>Online PPTs</li> </ul>	<ul style="list-style-type: none"> <li>Changing trends of Service Sector</li> <li>Role of Infrastructure Development in economic development</li> </ul>	<ul style="list-style-type: none"> <li>Will understand the Role of service sector in economy</li> <li>Will know the importance of Infrastructural Development in Indian Economy</li> </ul>

### Recommended Books:

- Misra S.K. and Puri V.K. Indian Economy, Himalaya Publishing House, Delhi.
- Black and Sundaram, International Business Environment, Prentice Hall India.
- Tayebmonis H., The Global Business Environment, Sage Publication, New Delhi.
- Charles Hill, International Business, Competing in the Global Market place, Arunkumar Jain, Tata McGraw Hill.
- Gupta K.R, Sharma Manoranjan, Indian Economic Policies and Data, Atlantic Publishers and Distributers (P) Ltd.
- Ann Larkin Hansen, The Organic Farming Manual, Storey Publishing, North Adams.
- Jhingan M.L., International Economics, Vrinda Publications, Delhi.
- RuddarDatta and K.P.M. Sundaram, Indian Economy, S. Chand and Co., New Delhi.
- Agarwal A.N., Indian Economy, Problems of Development and Planning, New Age International Publishers.
- Bhole, L.M., impacts of Monetary Policy, Himalaya Publishing House, New Delhi.
- Kayndepatil, G.V, Agricultural Economies: Theory & Policy, Chaitanya Publi. Nasik
- Bajpai A.D.N., Caubey S.K. et al, Leading Issues of Indian Economy, Atlantic Publishers and Distributers.
- Brics development bank launched, first president to be from India, Times of India July 16, 2014
- Ministry of Finance, Government of India (Oxford Press), Economic Survey 2020.
- Arun Kumar, International Business- competing in the Global Marketplace- Charles Hill.
- World Bank, World Development Report
- Magazines / Journals Reports,
- Web sites:
  - [www.mospi.gov.in/national-sample-survey-office-nssso](http://www.mospi.gov.in/national-sample-survey-office-nssso) (Ministry of Statistics and Programme Implementation, GoI)
  - <https://www.toppr.com/ask/question/economic-development-is-characterized-by-which-of-the-following/>
  - <https://www.economicdiscussion.net/economic-development/role-of-agriculture-in-the-economic-development>
  - <https://www.iedunote.com/foreign-trade>
  - <https://www.vedantu.com/commerce/liberalisation>
  - <https://ncert.nic.in/textbook/pdf/keec103.pdf>

**OR**

**Savitribai Phule Pune University, Pune  
Third Year, B.Com. (Core Course)  
Revised Syllabi for Three Years B. Com. Degree Course  
(CBCS-2019 Pattern) (w.e.f. 2021-22)**

**Semester - V**

**Course Code: 353**

**Preamble:**

An approach to International Economics is to examine the International Trade on the basis of trade theories. International Economics is subject that is ever dynamic and relevant in the current context. International Economics provides a framework on international trade and finance in the theoretical context, along with economic analysis as well as practical applications. This paper aims to provide knowledge about International Economics that includes trade theories, trade practices and their implications. It also aims to make students familiar about the various concepts of international economics, international trade and other concepts related to international economics

**Scope of the Programme:**

Knowledge of trade theories, trade policies and other subject matters related to international economics.

**Objectives:**

1. To acquaint the students with the basic theories of international trade and international economics.
2. To help the students evaluate the working and functions of international organizations and institutions.
3. To develop a foundation in the subject that will help the students in their future academic and professional ventures.

**Course Outcomes:-**

1. Students will be able to understand present Economic Scenario of Indian Economy as well as World Economy.
2. Students will understand the working of foreign trade market and foreign exchange market.
3. Students will be able to comprehend trade policies and concepts related to trade policies.

4. Students will be able to use the subject knowledge in their future academic and professional ventures.

Unit No.	Topic	Purpose & Skills to be Developed
Unit 1	<b>International Economics</b>	<p><b>Purpose:</b> To make the students aware of concepts in international economics</p> <p><b>Skills:</b> Analyze &amp; think critically, developing writing skills.</p>
	1.1 Meaning and Scope of International Economics	
	1.2 Importance of International Economics	
	1.3 Inter-regional Trade and International Trade	
	1.4 Role of International Trade in Economic Development	
1.5 Trade Problems Facing LDC's		
Unit 2	<b>Theories of International Trade</b>	<p><b>Purpose:</b> To give the knowledge to students about trade theories in international economics</p> <p><b>Skills:</b> understand theories of international trade, developing writing skills.</p>
	2.1 Theory of Absolute Cost Advantage	
	2.2 Theory of Comparative Cost Advantage	
	2.3 Theory of Factor Endowment (Heckscher-Ohlin)	
	2.4 Leontief Paradox	
2.5 Recent Development in Theories- 2.5.1 New Trade Theory (Zeala- Harrison) 2.5.2 Product Life Cycle Theory (Vernon)		
Unit 3	<b>Trade Policy</b>	<p><b>Purpose:</b> To give the knowledge about trade policies.</p> <p><b>Skills:</b> Analyze &amp; think critically, developing writing skills.</p>
	3.1 Free Trade Policy – Meaning, Arguments for and Against	
	3.2 Protection Policy – Meaning, Arguments for and Against	
	3.3 Tools of Protection: Meaning and Types 3.3.1 Tariffs 3.3.2 Quotas	
	3.4 Dumping: Concept and its Effects	
Unit 4	<b>Terms of Trade</b>	<p><b>Purpose:</b> To make the students aware of concept of terms of trade.</p>
	4.1 Meaning and Importance of Terms of Trade	



	<b>4.2 Types of Terms of Trade</b> A) Gross Barter Terms of Trade B) Net Barter Terms of Trade C) Income Terms of Trade D) Single Factorial Terms of Trade	<b>Skills:</b> Analyze & think critically, developing writing skills.
	<b>4.3 Factors affecting Terms of Trade</b>	
	<b>4.4 Causes of Unfavourable Terms of Trade to Developing Countries</b>	

**Teaching Methodology:**

Unit No.	No. of Lectures	Innovative methods to be used	Film Shows and AV Applications	Project	Expected Outcome
1	10	<ul style="list-style-type: none"> <li>• Open book discussion</li> <li>• Digital lectures</li> <li>• Reading</li> <li>• Projects</li> </ul>	You tube lectures on International economics	Difference in Inter-regional and International trade  Role of international trade in economic development of country	<ul style="list-style-type: none"> <li>• Students will understand concepts of international economics</li> <li>• Will be able to analyze and interpret</li> </ul>
2	14	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Case studies</li> </ul>	You tube lectures, Lectures on SWAYAM Portal	<ul style="list-style-type: none"> <li>• Critical evaluation of trade theories.</li> <li>• Comparison between different trade theories</li> <li>• Recent development in trade theories</li> </ul>	Will know various theories of international trade.  Will understand the difference between classical and modern approaches of trade theories
3	12	<ul style="list-style-type: none"> <li>• Pair learning</li> <li>• Group discussion</li> <li>• Open book</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher oriented PPTs.</li> <li>• You tube</li> </ul>	<ul style="list-style-type: none"> <li>• Critical evaluation of</li> <li>• Free Trade Policy</li> <li>• Protection policy</li> </ul>	Will understand the difference between Free Trade Policy

		discussion	lectures	• In present context	Protection policy  Able to interpret means of protection and free trade
4	12	<ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Teacher driven</li> <li>• Games and simulation</li> </ul>	<ul style="list-style-type: none"> <li>• You tube lectures</li> <li>• Online PPTs</li> </ul>	<ul style="list-style-type: none"> <li>• Different concepts of terms of trade</li> <li>• Causes of unfavourable terms of trade for India</li> </ul>	Will understand the concept of terms of trade  Will know the factors affecting on terms of trade

### Recommended Books:

1. Dr.D.M.Mithani – International Economics (Himalaya Publishing house ltd)
2. Bo Sodersten, Geoffrey Reed, International Economics (3<sup>rd</sup> Edition) Publisher Red Globe Press
3. Z.M.Jhingan : International Economics (Vrinda Publication)
4. Robert Feenstra, Alan M Taylor, International Trade (5<sup>th</sup> Edition) Publisher Worth
5. Dr.Mrs.NirmalBhalerao&S.S.M.Desai – International Economics (Himalaya Publishing house ltd)
  1. Kenan, P.B. (1994), The International Economy, Cambridge University Press, London.
  2. Kindlberger, C.P. (1973), International Economics, R.D. Irwin, Homewood.
  3. Krugman, P.R. and M. Obstgeld (1994), International Economics: Theory and Policy, Glenview, Foresman.
  4. Salvatore, D.L. (1997), International Economics, Prentice-Hall, Upper Saddle River, N.J.
  5. Sodersten, Bo (1991), International Economics, Macmillan Press Ltd., London.
  6. International Economics , M.L. Jhingan
  7. Bhagwati, J. (Ed.) (1981), International Trade, Selected Readings, Cambridge University Press, Mass.
  8. Greenaway, D. (1983), International Trade Policy, Macmillan Publishers Ltd., London.
  9. Joshi V. and I.M.D. Little (1998), India's Economic Reforms, 1999-2001, Oxford University Press, Delhi.
  10. Panchmukhi, V.R. (1978), Trade Policies of India: A Quantitative Analysis, Concept Publishing Company, New Delhi.
  11. Patel, S.J. (1995), Indian Economy towards the 21st Century, University Press Ltd., India.
  12. DeminicSalvatove – International Economics
  13. Francis Cherunilam – International Economics, McGraw Hill publications
  14. Francis Cherulliom - International Economics (Prentice hall)
  15. L.M.Bhole – Financial Institutions Markets (Tata McGraw Hill)
  16. H.R.Macharaju – Internat[https://saylordotorg.github.io/text\\_international-trade-theory-and-policy/s07-01-factor-mobility-erview.html](https://saylordotorg.github.io/text_international-trade-theory-and-policy/s07-01-factor-mobility-erview.html)l Financial

Markets and India (Wheeler Publication)

17. <https://princonkedi.files.wordpress.com/2015/08/international-economics-francis-cherunilam-pdf.pdf>
18. <https://www.emerald.com/insight/content/doi/10.1108/00251749710160214/full/html>
19. [https://www.economicsonline.co.uk/Global\\_economics/Terms\\_of\\_trade.html](https://www.economicsonline.co.uk/Global_economics/Terms_of_trade.html)
20. [https://en.wikipedia.org/wiki/Main\\_Page](https://en.wikipedia.org/wiki/Main_Page)
21. [https://saylordotorg.github.io/text\\_international-trade-theory-and-policy/s07-01-factor-mobility-overview.html](https://saylordotorg.github.io/text_international-trade-theory-and-policy/s07-01-factor-mobility-overview.html)
22. <https://www.worldbank.org/en/publication/global-economic-prosp>[https://www.academia.edu/23377962/International\\_Trade\\_and\\_Factor\\_Mobility\\_Theorissects](https://www.academia.edu/23377962/International_Trade_and_Factor_Mobility_Theorissects)
23. <https://openknowledge.worldbank.org/handle/10986/2140>
24. <https://www.imf.org/en/About#:~:text=The%20IMF%20was%20established%20in,staff%20drawn%20from%20150%20nations.>
25. <https://infobrics.org/>

**Faculty of Commerce & Management**  
**T Y B Com (Semester V)**  
**(Choice Based Credit System)**  
**Revised Syllabus (2021-22)**

**CORE COURSE – I**

**Course Code: 354**

**Subject: Auditing**

Total Credits: 04 (Theory 03 + Practical 01=04)

**Objectives of the Course:**

1. To acquaint themselves about the Definition, Nature, Objectives and Advantages of Auditing, Types of Audit, Errors and Fraud, Audit Program, Notebook, Working Paper, Internal Control, Check.
2. To get knowledge about concept of Checking, Vouching, Verification and Valuation, Types of Audit Report and Auditing Assurance Standard.
3. To understand the provision related Qualification, Disqualification, Appointment, Removal, Rights, Duties and Liability of Company Auditor and Provisions regarding Tax Audit as per Income Tax Act 1961 (Section 44 AA to 44AE).
4. To know the various new concepts in computerized system and Forensic Audit.

Unit No	Unit Title	Contents	Skills to be developed
1.	<b>Introduction to Principles of Auditing and Audit Process</b>	Definition, Nature-objects-Advantages of Auditing-Types of errors and frauds Various Classes of Audit. Audit programme, Audit Note Book, Working Papers, Internal Control-Internal Check-Internal Audit.	i) Understanding the concept of Auditing, Various type of Audit ii) Help to Find out Errors frauds and help to improve internal control system in business organization.
2.	<b>Checking, Vouching and Audit Report</b>	Test checking-Vouching of Cash Book-Verification and Valuation of Assets and Liabilities. Types of Audit Report-Audit Certificate-Difference between Audit Report and Audit Certificate. Auditing and Assurance Standards. (AAS- 1,2,3,4,5)	i) Know the procedure of vouching, Verification, and Valuation use for audit. ii) To know the terms used in Audit Report, Certificate and Auditing Assurance Standard.
3.	<b>Company Audit and Tax Audit</b>	<b>Company Audit</b> Qualification, Disqualifications, Appointment, Removal, Rights, Duties and liabilities of Company Auditor	i) Understanding provisions for Work as Company Auditor as per Companies Act 2013. ii) Enhance Provisions under Income Tax Act 1961 used

		<p><b><u>Tax Audit</u></b> Provisions under Income Tax Act 1961 (Sec 44AA, 44AB, 44AD, 44ADA,44AE) Recent Amendment made as applicable as per Income Tax Act 1961</p>	for Conduct Tax Audit.
4.	<b>Audit of Computerized Systems &amp; Forensic Audit</b>	<p><b><u>Auditing in an EDP Environment</u></b> General EDP Control – EDP Application Control- Computer Assisted Audit Techniques (Factors and Preparation of CAAT)</p> <p><b><u>Forensic Audit</u></b> Definition, Importance of Forensic Auditor, Services Render by Forensic Auditor, Process of Forensic Auditing and Forensic Audit Techniques and Forensic Audit Report</p>	<p>i) Enhance the knowledge of Computerized Systems ii) Forensic Audit used for new techniques applicable for new business trends.</p>

**Teaching Methodology:**

Unit No	Total lectures	Innovative Methods to be used	Film Shows and A.V. Applications	Projects / Practical's	Expected Outcome
1	16	<b>Introduction to Principles of Auditing and Audit Process</b>	Lectures of experts available on You Tube About Errors, Frauds, Types of Audit.	Individual assignment of solving practical problems, report review	Acquaint with knowledge and maturity to understand concept of Auditing, types of Audit and Audit Process.
2	12	<b>Checking, Vouching and Audit Report</b>	Lectures of experts available on YouTube and other digital platforms.	Individual assignment of solving practical problems, report review	Conceptual Clarity and Practical understanding of Vouching Verification and valuation and Types of Audit Report.

3	10	<b>Company Audit and Tax Audit</b>	Lectures of experts available on YouTube and other digital platforms. Website Review	Individual assignment of solving practical problems, report review	Practical knowledge about appointment, reappointment and other related provision. Practical knowledge about Tax Audit as per I.T. Act 1961 (Form 3CA, 3CB & 3CD)
4	10	<b>Audit of Computerized Systems &amp; Forensic Audit</b>	Lectures of experts available on YouTube and other digital platforms.	Individual assignment of solving practical problems, report review	Understanding new concepts under Audit of Computerized Systems & Forensic Audit

**Method of Evaluation:**

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit-I	MCQ/ Assignment/ Written test/PPT	As per University norms	--
Unit-II	MCQ/ Quiz/ Written test	As per University norms	--
Unit-III	Practical Problems/ written Test/MCQ/PPT	As per University norms	--
Unit-IV	MCQ/ Assignment/ Written test/PPT	As per University norms	--

**Reference books:**

Sr. No	Title of Book	Author/s	Publication
1	Practical Auditing	Spicer and Peglar	Allied, 1975, H.F.L., 1978
2	A Handbook of Practical Auditing	B.N. Tondon	S Chand & Co Ltd

3	Auditing assurance standards	The Institute of Chartered Accountants of India	ICAI
4	Company Accounts & Audit	The Institute of Cost Accountants of India	ICMAI
5	Fundamentals of Accounting and Auditing	The Institute of Company Secretaries of India	ICSI

**Guidelines for completion of Practical's:**

<b>Sr. No</b>	<b>Title of Practical</b>	<b>Objective of the Practical</b>	<b>Outcomes</b>	<b>Methodology</b>
1	A study of Audit Procedure of organisation	i) To study the meaning & Definition of Audit ii) To study the nature, scope & objective of Audit iii) To study the Audit Procedure of Organisation.	Acquaint with knowledge and maturity to Understand concept of Auditing, Know the concept of Audit Process.	Report based on visit to Individual assessee and collection of documents know the audit process
2	A study of Procedure of Vouching in Auditing	i)To study the concept of voucher and its contain ii) To study the concept of vouching and precautions to be taken by Auditor while vouching iii) To conduct vouching of representative vouchers	ConceptualClarity and Practicalunderstanding of Vouching	Report based on visit to a Businessman or professionals and documents collected
3	A study of Audit Report	i)To study the concept of Audit report ii)To study the types and features of Audit Report iii) To study forms of Audit Report	Understand concept of Audit Report and its types Know the various forms of Audit Report	Report based on visit to a Businessman or professionals and documents collected

4	A Study of Tax Audit	i) To study the meaning of Tax Audit ii) To Study scope of Auditor's Role under Income Tax Act iii) To Study criteria for Compulsory Tax Audit iv) To study Formats for Tax Audit (Form 3CA, Form 3CB, Form 3CE & Form 3CD)	Acquaint Practical knowledge about Tax Audit as per I.T. Act 1961 (Form 3CA, 3CB & 3CD)	Practical example in Guest Lecture /seminar / workshop and Report based on visit to a Businessman or professionals and documents collected
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1. For each semester minimum three practicals should be completed.
2. Two practicals are compulsory from the above table.
3. Teachers are allowed to choose one practical according to the situation in their local area.
4. If a student fails to complete minimum number of practical's, then the student shall not be eligible for appearing at the practical examination.



## Revised syllabi (2019 Pattern) for three years B.Com. Degree course (CBCS)

Semester : - V ( T.Y.B.Com)

Subject Code :- 355 (a)

Subject : - Business Administration – II ( Human Resource Management)

### Preamble

Human resource management is centered around developing a strategic approach to find, train, recruit and retain the right professionals, for the right job, and at the right time, such that they become future leaders to further the organizational goals, keeping in mind the company's most important asset – IT'S PEOPLE.

This is possible if the organization embraces the idea of building effective management of its human resource management department. As such, human resources enables institutions and businesses to create a well-structured team with a distinctive organizational culture. With this, the workforce stands a high chance of getting engaged or developed with whatever activity they are doing. In simple language, effective human resource management helps the organization to enhance productivity. Study of Human Resource Management not only helps you work on the theory but also enables you to discover your own style of managing people.

Human resource management plays a crucial role in any organization and has a range of functions that it undertakes. The scope of HR is vast and diverse, as well as hugely impactful. To comprehensively know about its entire scope, all the disciplines and subdisciplines, one must pursue any of the credible human resource management courses. Going through those will give you insights not only into the theories that define the human resources framework but also the application of those concepts

### Objectives of the course

1. To acquaint the student with knowledge about various Concepts , Objectives of the Human Resource Function , to identify the difference between Human Resource Management and Human Resource Development
2. To update the students on the emerging trends in the area of Human Resource Management
3. To develop understanding among the students the process of Recruitment and Selection, understanding the various means and methods associated with the Recruitment and Selection function
4. To educate the students on the importance of Training and Development and its impact on Career Planning and Development

5. To acquaint the students on the concept of Performance Appraisal ,d the process for effective Performance appraisal and imbibe the values of Ethical Performance appraisal among the students

**Depth of the program – Fundamental Knowledge**

Unit No	Unit Title	Contents	Skills to be developed
1	Introduction to Human Resource Function of Management	<p>1.1 Meaning, Objectives and Functions of Human Resource , , Difference between Human Resource Management and Human Resource Development</p> <p>1.2 Organization, Scope and functions of Human Resource Department in Modern Business.</p> <p>1.3 Human Resource Planning – Nature and Scope, Job analysis - Job description - Job specification.</p> <p>1.4 Human Resource Planning – Role of Human Resource Planning, Steps in Human Resource Planning , Factors influencing Human Resource Planning. Essentials of a Good Human Resource Planning , Job Analysis – Process , Tools and Techniques , Job Description &amp; Job Specification – Meaning and Distinguish between Job Description &amp; Job Specification.</p> <p>1.5 Emerging Concept of H.R.D.</p> <p>Quality Circles ,Kaizen ,Talent Management and Leadership Development ,HRD as a Business Partner ,Visionary and Transforming Leadership, E- Learning: Integration of IT and HR , HRIS (Human Resource Information Systems) ,Incorporation of career development ,Internal consultancy and Linkage to knowledge management</p>	<p>Conceptual Understanding</p> <p>Critical thinking skills</p> <p>Accessing and analyzing information skills</p> <p>Imaginative thinking</p> <p>Awareness on the latest in the trends</p>

2	Recruitment and Selection	<p>1.1 Recruitment – Meaning, Purpose/ Importance, Sources of Recruitment, and Factors Governing Recruitment Process</p> <p>1.2 Selection – Meaning, Importance of selection procedure, Tools of Selection and selection Process</p> <p>1.3 Distinguish between Recruitment and Selection</p> <p>1.4 Types of Employment tests, Types of Interviews</p>	<p>Conceptual Understanding</p> <p>Analytical skills</p> <p>Accessing and analyzing information</p> <p>Imaginative thinking</p>
3	Training and Development	<p>1.1 Meaning ,Need , Objectives of Training and Development, Benefits/ Importance of Training to the organisation and employees.</p> <p>1.2 Types of Training , Methods of Training and Development, Process/ Procedure for effective Training.</p> <p>1.3 Career Development , Steps in Career Development , Stages of Career Development , Advantages and Limitations of Career Development, Career Development Cycle , Career Counselling and Self Development</p>	<p>Conceptual Understanding</p> <p>Analytical Skills</p> <p>Technical skills</p> <p>Critical thinking</p>
4	Performance Appraisal Management	<p>1.1 Introduction, Meaning, Need and Importance of Performance Appraisal</p> <p>1.2 Process of Performance Appraisal</p> <p>1.3 Merits and Limitations of Performance Appraisal</p> <p>1.4 Methods and Techniques of Performance Appraisal</p> <p>1.5 Ethical Performance Appraisal</p>	<p>Conceptual Understanding</p> <p>Analytical skills</p> <p>Accessing and analysing information</p> <p>Value Education</p>

<b>Topic No.</b>	<b>Total Lectures</b>	<b>Innovative methods to be used</b>	<b>Film shows and AV Applications</b>	<b>Project</b>	<b>Expected Outcome</b>
1	10	PPT , Lectures by experts from Industry experts,	Online Videos of Human Resource Managers. Live online session by Industry Experts	Interview Report of Human Resource Manager/s of business of various sizes and sectors	Developing Conceptual understanding and Conceptual Clarity Learning of the Latest development in Human Resource
2	12	PPT , Lectures by experts from Industry experts and Placement Agency Managers, Role Play , Mock Interview , Demonstrations	Online Videos	Interview Report of Placement Agency Personnel , Detailed Project report on any 3 Sources of Recruitment	Conceptual Clarity and Practical understanding Hands on Experience Technical Knowledge
3	18	PPT, Videos of Various Products from inception till date , Demonstration	Videos of various Multi Product Line Manufacturers	Creation of Short Video of Innovative Product Development, Pricing, Market Launch Strategy	Conceptual Clarity and Practical understanding Creative and Imaginative Skills Innovation
4	08	PPT , Lectures by Experts from the field of Media , Comparative Case study of Ethical and unethical Performance Appraisal Practices	Online Videos of Tata Group of Industries	Study of Performance Appraisal System of various organisations And Study of Performance Appraisal System of Domestic, Multinational and International companies	Analytical skills Decision making skills Creative and Imaginative Skills I

## Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	MCQ, Field Visit Report , Interview Report	As per University norms	Certificate Course in Best Practices in Human Recourse Development
Unit – II	MCQ, Assignments, PPT	As per University norms	Certificate course in Ethical Leadership Development
Unit – III	MCQ, Interview Report with Placement Agencies, Case Study , Project on Need and Importance of Campus Placement Office and Campus Interviews	As per University norms	Certificate Course in Ethics in Human Resource Management
Unit – IV	MCQ , Case study , Project	As per University norms	

## References:

### List of Books Recommended: -

- Personnel and Human Resource Management – A M Sharma (Himalaya Publishing House)
- Personnel Management and Industrial Relations- R S Davar (Vikas Publishing House)
- Human Resource Development and Management- Biswanath Ghosh (Vikas Publishing House)
- Personnel Management – C.B. Mamaria, S V Gankar (Himalaya Publishing House)
- Human Resource Management – AShwathappa
- Human Resource Management - *Gary Dessler*
- HR from the Outside In: Six Competencies for the Future of Human Resources - Dave Ulrich, Jon Younger, Wayne Brockbank, Mike Ulrich
- The HR Scorecard - *Brian Becker, Mark Huselid, Dave Ulrich*
- Victory Through Organization - ***Dave Ulrich, David Kryscynski, Wayne Brockbank, Mike Ulrich***
- Investing in people. Financial Impact of Human Resource Initiatives - *KirsWayne Cascio, John Boudreau*
- Work Rules! -*Laszlo Bock*
- HR Rising!!: From Ownership to Leadership -***Steve Browne***
- The Practical Guide to HR Analytics: Using Data to Inform, Transform, and Empower HR Decisions - ***Shonna D. Waters, Valerie N. Streets, Lindsay McFarlane, and Rachael Johnson-Murray***

**Revised syllabi (2019 Pattern) for T.Y.B. Com Degree course (CBCS)**  
**SPECIAL ELECTIVE COURSE (Special Course – II)**  
**Banking and Finance-Special Paper II (Semester-V)**  
**(Financial Markets and Institutions in India – I Course code: 355-B)**  
**Total Credits: 04 (Theory 03 + Practical 01=04)**

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- **Objectives:**
- 1. To acquaint the students with Indian Financial System and its various segments.
- 2. To make the students aware about Indian Money Market.
- 3. To analyse and understand the functions of Indian Capital Market.
- 4. To enable the students the functioning of Foreign Exchange Market.

Unit No.	Topic	Number of Lectures	Teaching Method	Proposed skills to be developed
<b>01</b>	<b>1. Indian Financial System:</b> 1.1 Meaning and Definition of Financial System in India. 1.2 Structure of Indian Financial System 1.3 Functions of financial system in India 1.4 Role of financial system in Economic Development 1.5. Indicators of Financial Development	<b>10</b>	Lecture, PPT, Group and Panel Discussion, Library Work, Assignments	Understanding the Indian Financial System. Understanding the meaning, structure and role of Financial System in India.
<b>02</b>	<b>Indian Money Market :</b> 2.1 Meaning and definition of Indian Money Market 2.2 Functions of Indian Money Market 2.3 Participants in Indian Money Market 2.4 Credit Instruments used in Indian Money Market 2.5 Deficiencies of Indian Money Market. 2.6 Recent development in Indian Money Market	<b>14</b>	Lecture, PPT, Group and Panel Discussion, Library Work, Assignments	Understanding the meaning, functions, credit instruments, deficiencies and recent development in Money Market in India.

<b>03</b>	<b>Indian Capital Market:</b> 3.1 Meaning and definition of Indian Capital Market 3.2 Functions of Indian Capital Market 3.3 Participants in Indian Capital Market 3.4 Credit Instruments used in Indian Capital Market 3.5 Deficiencies of Indian Capital Market. 3.6 Recent development in Indian Capital Market	<b>12</b>	Lecture, PPT, Group Discussion, Library Work Book Assignment, Use of internet	Understanding the meaning, definition functions, credit instruments, deficiencies and recent development in Capital Market in India
<b>04</b>	<b>Foreign Exchange Market:</b> 4.1. Meaning and definition of foreign exchange market 4.2. Functions of Foreign Exchange Market 4.3 Participants in Foreign Exchange Market 4.4. Determination of Exchange Rate 4.5 Recent development in Foreign Exchange Market	<b>12</b>	Lecture, PPT, Group and Panel Discussion, Library Work, Assignments	Understanding the meaning, definition functions, participants and recent development in Foreign Exchange Market.
<b>Total</b>		<b>48</b>		

- **References:**

- 1. Avadhani V.A. (2019), 'Investment and Securities Markets in India', Himalaya Publishing House
- 2. Bhole L.M. (2004), 'Financial Institution and Markets' McGraw Hill Education
- 3. Khan M.Y. (2019), 'Indian Financial System' 11<sup>th</sup> Edition, McGraw Hill Education
- 4. Kohok Mukund, 'Business Finance and Financial Services'
- 5. Kumar, Gupta and Kaur (2021), 'Financial Markets and Institutions' Taxmann
- 6. Meir Kohn (2000), 'Financial Institutions and Markets', Tata MC Graw-Hill Publication
- 7. Michael Brandl (2016), 'Money, Banking, Financial Markets and Institutions', CENGAGE Learning Custom
- 8. Mittal Anand (2003), 'Economic Reforms and Capital Markets in India', Galgotia Publishing Company, New Delhi.
- 9. Pathak Bharti V. (2018), "The Indian Financial System", Pearson Education [India] Ltd.

**SYLLABUS FOR T.Y.B.COM UNDER CBCS PATTERN 2019**  
**SEMESTER-V**  
**PAPER- II**  
**SUBJECT NAME: - BUSINESS LAWS AND PRACTICE PAPER II (BLP-II)**

**COURSE CODE - 355-(c)**

**Objectives of the course:**

To develop an understanding of the significant provision of selective Business & labour Laws.

To acquaint the students to address a basic business legal application-oriented issues.

**Depth of the program:**

Basic to application based knowledge.

**Objectives of the Subject:**

- To impart the students with the fundamental understanding of important business laws.
- To study & acquaint students an application based knowledge of various Business & Labour Laws.
- To familiar the students with legal Business Environment of India.
- To develop & strengthen students through the legal practical knowledge and their importance to the Indian Business organizations.

<b>Unit . No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose skills to be developments</b>
1	<b>An Introduction to Labour Laws in India</b>	1.1 History and Evolution of Labour Laws in India 1.2 Labour Policy of India 1.3. Classification of Labour Laws and an overview of labour laws. 1.4 Unfair Labour Practices	Understanding of evolution & historical legal framework of Labour Laws in India.



		1.5 Labour Laws in the unorganized sector 1.6 Authorities under the Labour Laws in India (Ministry of Labour & Employment –Government of India, Chief Labour Commissioner Labour Courts / Industrial Tribunals, (Appointment, Qualification, Disqualification, Rights & duties)	
2	<b>The Factories Act, 1948 (Sections 1-50)</b>	1.1 Introduction, Objectives & Key Definitions, Approval, 1.2 Licensing and Registration of Factories, 1.3 The Inspecting Staff, Provisions Regarding Worker's Health, 1.4 Provisions Regarding Safety and Welfare of Workers. Recent amendments (If any)	Students will get the basic knowledge about various provisions under factories Act 1948.
3	<b>The Employees State Insurance Act,1948</b>	3.1 Scope, Application and Definitions 3.2 Chapter II of the Act(ESI Corporation, Standing Committee, Medical Benefit Council, Principle Officers) 3.3 Chapter III of the Act(Finance & Audit) 3.4 Chapter IV-(Contributions, Recovery of Contribution,) 3.5 Chapter V(Benefits) 3.6 Chapter VI(Adjudication of Disputes & Claims) 3.7 Chapter VII(Punishment)	It will help the students to gain insights of the Employees State Insurance Act,1948.
4	<b>The Employees Provident funds and Miscellaneous Provisions Act, 1952</b>	5.1 Introduction, Objectives and scope of the Act, 5.2 Applicability and Constitutional validity of the Act., 5.3 Definitions, Employees' Provident Fund Scheme, 5.4 Employees' pension scheme and Employees Deposit Linked Insurance scheme Authorities - Under the Act, and their workings, penalties, offences and protection.	To learn various provisions & applications of the Employees Provident funds & Miscellaneous Provisions Act, 1952.

## Teaching Methodology

Topic No.	Total Lectures	Innovative Methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	<ul style="list-style-type: none"> <li>➤ Group Discussion</li> <li>➤ Article Reviews</li> </ul>	<ul style="list-style-type: none"> <li>➤ E-Content on Evolution of Labour laws provided by UGC/University/MOO C etc. to be analyzed.</li> <li>➤ Other open E-Content Internet Sources.</li> </ul>	Project report shall be prepared on Development of labour laws as per their necessity.	Understanding the actual requirement of legal framework in India.
2	08	<ul style="list-style-type: none"> <li>➤ Benefits of Factories Act to be discussed in Group.</li> <li>➤ Internet Sources.</li> <li>➤ Discussion on legal requirements.</li> </ul>	<ul style="list-style-type: none"> <li>➤ E-Content on Factories Act provided by UGC/University/MOO C etc. to be analyzed.</li> </ul>	Project report can be prepared on applications of Factories Act 1948.	Understanding the major insights of Factories Act 1948.
3	08	<ul style="list-style-type: none"> <li>➤ Benefits of Insurance to be discussed in Group.</li> <li>➤ Internet Sources.</li> <li>➤ Discussion on various Provisions of the Act.</li> </ul>	<ul style="list-style-type: none"> <li>➤ You tube E-Content Sources.</li> <li>➤ E-Content on the Employees State Insurance Act provided by UGC/University/MOO C etc. to be analyzed.</li> </ul>	Project report can be prepared on benefits of Employees State insurance Act.	Make students aware about Employees State Insurance Act.
4	10	<ul style="list-style-type: none"> <li>➤ Benefits of The Employees Provident funds and Miscellaneous Provisions Act, 1952 to be discussed in Group.</li> <li>➤ Internet Sources.</li> <li>➤ Discussion on various Provisions of the Act.</li> </ul>	<ul style="list-style-type: none"> <li>➤ You tube E-Content Sources.</li> <li>➤ E-Content on the Employees Provident funds and Miscellaneous Provisions Act, 1952 provided by UGC/University/MO OC etc. to be analyzed.</li> </ul>	Project report can be prepared on benefits of The Employees Provident funds and Miscellaneous Provisions Act, 1952	Make students aware about The Employees Provident funds and Miscellaneous Provisions Act, 1952

## References

Sr. No.	Title of the Book	Author/s	Publication
1	Labour Laws	Taxmann	Taxmann
2	Labour & Industrial Laws	S N Misra	Central Law Publication
3	Labour and Industrial Laws	M.N. Mishra	Central Publicaions
4	Business & Commercial Laws	Sen & Mitra	--
5	Business Law for Management	Bulchandani K.R.	--

## Practical for Semester - III

Topic	Mode of Practical
Applications of Factories Act 1948	Overview & Presentation can be taken.
Evolution of labor policies in India	Group Discussion & Survey can be conducted.
Benefits of Employees state insurance Act.	Online data analysis with library sources.
Overview of Employees Provided fund & Miscellaneous provisions Act.	Applications to studied.

## Revised Syllabi (2019 Pattern) for Three years B.Com Degree Course (CBCS)

Semester -V

Course Code- 355 (d)

Subject: --: Co-operation & Rural Development ((Special Paper-II)

Total Credits: - 04 (Theory 03 Internship 01=04)

### Preamble:

Cooperative learning requires students to engage in group activities that increase learning and adds other important dimensions. The positive outcomes include academic gains, improved race relations and increased personal and social development. The purpose of this course is to impart knowledge of concept of cooperative marketing, consumer cooperative and marketing of other cooperative organisations. This course enables students to acquire in-depth knowledge of cooperative marketing.

### Objectives of the Course:

- 1) To create awareness among students about co-operative marketing
- 2) To develop the capability of students for knowing different types Marketing.
- 3) To create awareness about the role of National Agricultural Co-operative Marketing Federation (NAFED)

Unit No.	Unit Title	Contents	Skills to be developed
1	Introduction to Marketing	1.1 Meaning and definition 1.2 Elements of marketing 1.3 Objectives of marketing 1.4 Importance of marketing 1.5 E- marketing for co-operatives 1.6 Recent trends in co-operative marketing	Understanding Basic Marketing and its importance
2	Co-operative Marketing	2.1 Basic concepts and features of co-operative marketing	Understanding basic concepts of co-operative Marketing, Cooperatives

		<p>2.2 Structure of cooperative marketing</p> <p>2.3 Primary Co-operatives Marketing Societies- Objects, Functions and Progress.</p> <p>2.4 District and State Co-operatives marketing societies / Federations objectives, Functions and Progress.</p> <p>2.5 Development and Evaluation</p>	<p>federations, their functions, objectives etc.</p>
<b>3</b>	<b>Consumer Co-operatives</b>	<p>3.1 Meaning, Need and Importance</p> <p>3.2 Structure of consumers Co-operatives</p> <p>3.3 Primary Co-operative Consumer Stores, Student Consumer Stores.</p> <p>3.4 Wholesale Co-operative Stores &amp; Super markets</p> <p>3.5 State Co-operative Consumer Federation &amp; National Co-operative Consumer Federation</p> <p>3.6 Problems of consumer co-operatives</p> <p>3.7 Evaluation and development</p>	<p>1) Creating awareness about consumer co-operatives, its needs and structure.</p> <p>2) Understanding about problems of consumer co-operatives, their evaluation and development</p>
<b>4</b>	<b>Other Co-operative Organizations and It's Marketing</b>	<p>4.1 Dairy Co-operatives</p> <p>4.2 Poultry Co-operatives</p> <p>4.3 Sugar Co-operatives.</p> <p>4.4 Cotton processing ( Ginning, Spinning Mills) Pricing</p> <p>4.5 Meaning and Objectives of Pricing</p> <p>4.6 Competitive and Co-operative Pricing</p> <p>4.7 Agricultural Cost and Price Commission (ACPC)</p>	<p>Creation of awareness about different cooperative originations and their marketing strategies</p>

## Teaching Methodology:

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Project	Expected Outcome
1	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources	Relevant You Tub Videos, Relevant slide show, online Video Short Film Show	Individual assignment report	Understanding of basic knowledge of Marketing
2	12	Pre reading, Class discussion, internet resources, Lecture, Expert Lecture, PPT / Poster Presentation, Group Discussion, Library /Home Assignment ,Internal Assignment, case study	Relevant You Tub Videos , Short Film Show, A.V Application ,	Visit to Office of co- operative society	Understanding the importance and Essentials co-operative Marketing
3	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources ,students Seminar/Workshop ,case study	Relevant You Tub Videos.PPT AV Application, online video	Presentation	1) To acquire the fundamental knowledge consumer co-operative institutions 2) To understand the function of state and National consumer federations
4	12	Guest Lectures of eminent Personalities , Group Discussion, Library visit ,Home Assignment, case study	Online Videos, Relevant slide show , Short Film Show	Visit to co-operative organization & Presentation on it.	To understand elements different co-operative organization and their pricing policies and pricing policies.

## Method of Evaluation:

Subject	Internal Evaluation	External Evaluation	Suggested Add-on Course
Unit- I	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	Certificate Course on Cooperation and Rural Development
Unit-II	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	
Unit-III	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	
Unit-IV	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	

## References:

Sr. No	Title of Book	Author/s	Publication	Place
1	New Dimensions of Co-operative management	G.S.Kamat	Himalaya Publication House,	Mumbai
2	Co-operative Management principals and techniques	Dr.Nakkiran S.A.-	Himalaya Publication House,	Mumbai
3	Co-operative Management and Administration	Goel B.B	Deep and Deep Publication	New Delhi.
4	Co-operation and Rural Development	Principal Dr.Nitin Ghorpade	Success	Pune
5	Human Resource Management Practices in Co-operative sector	Principal Dr.Shaikh Aftab Anwar	Idea Publication	New Delhi
6	Theory & Practice of Co-operation,	Dr. Dhiraj Zalte &Others –	Prashant Publication	Jalgaon
7	C.A State and C-operative Movement			
8	<a href="https://www.bhagirathgram.org/">https://www.bhagirathgram.org/</a>			
9	Journal of Commerce and Management Thought(JCMT)			

## SPPU, Pune

Revised Syllabi (2019pattern) for three years B.Com. Degree Course CBCS

T.Y. B.Com. (Semester V)

**Subject Name :- Cost and Works Accounting. Special Paper II**

**Subject Title :-Overhead and Accounting for Overheads**

**Course Code :- 355 – e**

### Objectives:

1. To provide knowledge about the concepts and principles of overheads.
2. To Introduce the cost accounting standards and the cost accounting standard board.
3. To understand the stages involved in the accounting of overheads.
4. To build an ability towards strategic overhead accounting under Activity Based Costing

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Overheads</b>	1.1 Meaning and definition of overheads. 1.2 Classification of overheads 1.3 Introduction to Cost Accounting Standard, Cost Accounting Standard Board 1.4. Introduction to of CAS 3, CAS 11, CAS 15 1.5 Cost Accounting Standard 3: Production and operation Overheads	a. Ability to understand the concept of Overhead and classification of overheads. b. Students will be able to relate the cost Accounting Standard with respective overheads.
2	<b>Accounting of Overheads (Part-I)</b>	2.1 Collection and Allocation of overheads. 2.2 Apportionment and Reapportionment of overheads 2.3 Simple problem of primary distribution of Overhead	a. To understand the stages in the process of accounting overheads. b. Students will be able to calculate total departmental overheads after implementing Primary and Secondary



		2.4 Simple Problem of Secondary distribution of overheads (Repeated & Simultaneous Equation method only)	Distribution.
3	<b>Accounting of Overheads (Part-II)</b>	3.1 Absorption - Meaning, Rate and Methods of Overhead Absorption 3.2 Under and Over Absorption of overheads- Meaning, Reasons and Accounting treatment 3.3 Simple problems on the accounting treatment of under and overabsorption of Overheads	a. Conceptual understanding of under and over absorption. b. Enable the learner with accounting treatment for under and over absorption.
4	<b>Activity Based Costing</b>	4.1 Definitions-Stages in Activity Based Costing 4.2 Purpose and Benefits of Activity Based Costing 4.3 Cost Pools and Cost Drivers 4.4 Problems on Activity Based Costing [Simple Problems only]	a. Students will be able to identify overheads as per various activities.

## Teaching Methodology

Unit No.	Total Lectures	Innovative Methods to be used	Films Shows and AV Applications	Practical	Expected Outcome
1	08	Powerpoint Presentations	Relevant Youtube Links	Group discussion	To remember and understand the concept of overhead and classification of overheads
2.	16	Group Discussion		Visit small units and make a list of overheads of the respective units.	Understanding the significance of overheads in the total cost of product/service.

3	12	Quiz		Powerpoint Presentations	1)Ability to understand the stages in the process of accounting overheads.  2) Application of accounting treatment for under and over absorption.
4	12	Expert lecture		Case Study	Knowledge about detection of overheads to different activities

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add-On Course
Unit I	Multiple Choice Questions, Written Test, Internal Examination, Powerpoint Presentations, Orals, Assignments, Tutorials etc.	SPPU	Two industrial visits and subsequent reports on the visits.
Unit II			
Unit III			
Unit IV			

## References

Sr. No	Title of the Book	Author	Publisher	Place
01	Practice in Advanced costing and Management Accounting.	Prof. Subhash Jagtap	Nirali Prakashan	Pune
02	Advanced Cost Accounting and Cost Systems	Ravi Kishor	Taxman's Allied Service Pvt. Ltd.	New Delhi
03	Cost Accounting Principles and Practice.	S.P. Iyengar	Sultan Chand & Sons Accounting, Taxman's	New Delhi
04	Students Guide to Cost Accounting	Ravi Kishor	Taxman's, New Delhi.	New Delhi
05.	Cost Accounting Principles and Practice	M.N. Arora	Vikas Publishing House Pvt. Ltd.	New Delhi.
06	Cost Accounting, Theory and Problems,	S.N. Maheshwari and S.N. Mittal	Mahavir book Depot	New Delhi
07	Theory and Techniques of Cost Accounting.	B.L. Lall and G.L. Sharma	Himalaya Publishing House	New Delhi.

08	Cost Accounting – Textbook.	V.K. Saxena and Vashista	Sultan Chand and Sons	New Delhi.
09	Cost Audit and Management Audit.	V.K. Saxena and Vashista	Sultan Chand and Sons	New Delhi
10	Cost Accounting Principles and Practice.	Jain and Narang	Kalyani Publishers	Kolkata
11	Principles and Practice of Cost Accounting	N.K. Prasad	Book Syndicate Pvt. Ltd.	Kolkata
12	Advanced Cost Accounting Syndicate Pvt Ltd., Calcutta.	N.K. Prasad	Book Syndicate Pvt. Ltd.	Kolkata
13	Practical Costing.	R.K. Motwani	Pointer Publisher	Jaipur
14	Cost Accounting.	R.S.N. Pillai and V. Bhagavati	Sultan Chand and Sons	New Delhi.
15	Advanced Cost Accounting	Dr D. M. Gujarathi	Idol Publication	Pune

## Web References

Sr. No	Lectures	Films	PPTs	Articles	Others
For all the units.	Guest Lectures by Field Personnel such as working executives from industries and of practising Cost and Management Accountants.	YouTube films showing the working of different industries.	Relevant PowerPoint presentations are available on all these topics.	Articles from professional journals such as The Management Accountant, The Chartered Accountant, The Chartered Secretary, The Institute of Chartered Financial Analyst of India	<a href="https://icmai.in">https://icmai.in</a>  <a href="http://www.globalcma.in">www.globalcma.in</a>  <a href="http://eclm.unpune.ac.in">eclm.unpune.ac.in</a>

### Notes: The breakup of marks in the Examination will be as follows:

- 50 % of the marks for Theory & 50 % of the marks for Practical Problems (Simple Problem Only)

#### Areas of Practical Problems

- ▶ Accounting & Control of Overhead. [Part I]  
Primary and Secondary Distribution of Overheads( Repeated & Simultaneous equation methods only)
- ▶ Accounting & Control of Overhead. [Part II] Problems of Machine Hour Rate Only.
- ▶ Problems of Activity Based Costing [Simple Problems only]

Revised syllabi (2019 Pattern) for three years B. Com. Degree course (CBCS)

Syllabus for **B. Com. Semester: - V**  
Subject Name: - **Business Statistics II**  
**Course code: - 355(F)**  
Credit 3

**Preamble to the syllabus:**

Tools and techniques learned in Statistics give a precise way of formulating and analyzing a problem and to make logical conclusions. Concepts and tools introduced in this course are useful to students for higher studies and career in any branch of Economics, Commerce and Management. Professionals working in these fields, wishing to upgrade their knowledge, will also benefit. The stress of the course will be on building the concepts and their applications.

In modern times, Statistics is viewed not as a mere device for collecting numerical data but as a means of developing some techniques for their handling and analysis and drawing valid inferences from them. Statistics provides tools for making decisions when conditions of uncertainty prevail. So it is very useful in various fields like agriculture, business, management, economics, finance, insurance, education, biotechnology and medical science etc.

Depth of the Course – Basic Knowledge of Probability Theory

**Objective of the Course**

1. To understand and Master the concepts of Probability.
2. To understand the concepts of discrete probability distributions.
3. To make students to understand the art of applying statistical techniques to solve some real life problems.
4. To gain knowledge of Statistical Computations.

Unit No.	Unit Title	Contents	Purpose/Skills to be developed
1	Probability	Definition of permutation and combination of distinct objects; Relationship between $nPr$ and $nCr$ , Statement of binomial theorem for positive integral index (without proof); Sample space - Definitions of sample space, event, sure event, null event, Complimentary events, Equally likely events, Simultaneous occurrence of the two events, Occurrence of at least one of the two events; Probability - Definitions of probability using classical and axiomatic	<ol style="list-style-type: none"><li>1. To understand the concepts of probability</li><li>2. To apply the concepts of probability to real life business problems.</li></ol>

		approach; Addition and multiplication laws of probability; Conditional probability - $P(A B)$ , $P(B A)$ Where $A$ and $B$ are any two events defined on same sample space, independence of two events, Bayes Theorem (statement only); Examples and problems related to business.	
2	<b>Univariate and Bivariate Discrete Probability Distribution</b>	Random Variable - Meaning of a random variable, discrete random variable; Probability distribution of a discrete random variable; Probability mass function (p.m.f); Expected value, variance and S.D, Examples and problems related business based on finite sample space. Bivariate discrete random variable; Joint probability distribution of a bivariate discrete random variable; Marginal probability distribution of a discrete random variable; Independence of two discrete random variables, Examples and problems related to business.	<ol style="list-style-type: none"> <li>1. To understand the concept of random variable</li> <li>2. To understand the concepts of univariate and bivariate probability of distribution</li> <li>3. To apply the concept of random variables and probability distribution to real life business problems.</li> </ol>
3	<b>Some standard discrete probability distributions</b>	Bernoulli distribution - Bernoulli trials, Probability mass function, Expected value, variance and S.D; Binomial distribution - Probability mass function, Expected value, variance and S.D (Formulae only) statement of additive property (without proof), Problems to calculate probabilities, Expected value and parameters of binomial distribution, Relation with Bernoulli distribution, Real life situations; Poisson distribution - probability mass function, Expected value, variance and S.D (Formulae only) statement of additive property (without proof), problems to calculate probabilities, expected value and parameter of Poisson distribution, Real life situations.	<ol style="list-style-type: none"> <li>1. To understand the concepts of different discrete probability distributions</li> <li>2. To apply concepts of discrete probability distributions to real life business problems.</li> </ol>
4	<b>Inventory Control</b>	Meaning and necessity of inventory control; Deterministic inventory Model: - Economic order quantity for instantaneous replenishment with uniform demand and a) shortages not allowed, b) shortages allowed; Lead time, Re - order level and Buffer stock; Probabilistic Inventory Model : - Single period probabilistic model without set up costs.	<ol style="list-style-type: none"> <li>1. To understand the concept and Inventory control</li> <li>2. To apply the concept of inventory control to real life business models.</li> </ol>



## List of Practicals

Sr. No	Name of the Experiment
1.	Applications of Binomial distribution using
2.	Application of Poisson distribution
3.	Application of Bivariate discrete probability distributions

## Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	ICT	NA	NA	Students will be able to understand and apply concepts probability to real world business problems.
2	14	ICT	NA	NA	Students will be able to understand and apply the concepts of discrete probability distributions to real world business problems.
3	14	ICT	NA	NA	Students will be able to understand and apply some standard probability distributions to real world business problems.
4	08	ICT	NA	NA	Students will be able to understand and apply the concept of inventory control to real world business problems.

## Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Unit wise distribution of Marks (Final Examination)	Suggested Add on Course
Unit – I	30%	70%		
Unit – II	30%	70%		
Unit – III	30%	70%		
Unit – IV	30%	70%		
Total				

Notes: -

1. Internal evaluation is continuous assessment.
2. Internal evaluation shall have following components: -
  - a. At least one test of 20 marks involving objective questions of following type: - multiple choice, true or false, state definitions/concepts, one line answer etc.
  - b. At least one assignment of 05 marks.
  - c. If time and resources permit then there can be power point presentation of group or individual (this component is not compulsory).
  - d. Final score will be average score of all components.

References:

Sr. No.	Title of the Book	Author/s	Publication	Place
1	Business Mathematics and Statistics	N.G. Das & Dr. J.K. Das	McFraw Hill	New Delhi
2	Fundamentals of Business Mathematics	M. K. Bhowal	Asian Books Pvt. Ltd	New Delhi
3	Mathematics for Economics and Finance: Methods and Modeling	Martin Anthony and Norman Biggs	Cambridge University Press	Cambridge
4	Statistical Methods	Gupta S. P.	Sultan Chand and Sons	New Delhi
5	Applied Statistics	Mukhopadhyaya Parimal	New Central Book Agency Pvt. Ltd.	Calcutta.
6	Fundamentals of Statistics	Goon A. M., Gupta, M. K. and Dasgupta, B.	World Press	Calcutta.
7	Fundamentals of Applied Statistics	Gupta S. C. and Kapoor V. K.,	Sultan Chand and Sons	New Delhi
8	Statistics for Business and Financial Economics	Cheng-Few Lee, John C. Lee and Alice C. Lee	Springer	New York

<b>9</b>	<b>Fundamentals of Statistics</b>	<b>S. C. Gupta</b>	<b>Himalaya Publishing House</b>	<b>New Delhi</b>
<b>10</b>	<b>Statistics for Business and Economics</b>	<b>J. S. Chandan</b>	<b>Vikas Publishing House</b>	<b>New Delhi</b>
<b>11</b>	<b>Business Statistics</b>	<b>S. P. Gupta and M. P. Gupta</b>	<b>Sultan Chand and Sons</b>	<b>New Delhi</b>
<b>12</b>	<b>Quantitative Techniques</b>	<b>N. D. Vohra</b>	<b>McGraw Hill Education</b>	<b>New Delhi</b>
<b>13</b>	<b>Business Statistics</b>	<b>S. C. Gupta and Indra Gupta</b>	<b>Himalaya publishing House</b>	<b>New Delhi</b>
<b>14</b>	<b>Complete Business Statistics</b>	<b>Amir Aczel, J. Sounderpandian, and P. Saravanan</b>	<b>McGraw Hill Education</b>	<b>New Delhi</b>
<b>15</b>	<b>Fundamentals of Statistics</b>	<b>D. N. Elhance</b>	<b>Kitab Mahal</b>	<b>New Delhi</b>

# Revised Syllabi (2019 Pattern) for Three years B.Com Degree Course (CBCS)

Semester V (T.Y.B.Com)

Subject code -: 355 (g)

Subject -: Business Entrepreneurship (Special Paper II)

Total Credits: - 04 (Theory 03 Internship 01=04)

## Preamble:

Entrepreneurs create jobs, increase innovation, raise competition and are responsive to changing economic opportunities and trends. Youth entrepreneurship is also attractive to policy makers because of the high rates of latent entrepreneurship amongst young people. Entrepreneurship education aids students from all socioeconomic backgrounds to think outside the box and nurture unconventional talents and skills. It creates opportunities, ensures social justice, instills confidence and stimulates the economy. Entrepreneurship is the capacity to not only start companies, but also to think creatively and ambitiously. Hence it is very important to be included in curriculum.

## Objectives:

- 1) To Develop understanding of MSME and its formation
- 2) To Develop Knowledge and understanding in creating and managing new venture.
- 3) To Equip students with necessary tools and techniques to set up their own business venture
- 4) To help students to bring out their own business plan.
- 5) To make students aware about business crises and sickness.

## Depth of Programme: - Basic knowledge of Business Entrepreneurship

Unit No.	Unit Title	Contents	Purpose Skills to be developed
1	<b>MICRO SMALL AND MEDIUM ENTERPRISES (MSME) POLICY 2020:</b>	Introduction, Definition, Investment and Annual Turnover, Key Announcements of Atma Nirbhar Bharat Abhiyan, Criterion, Classification of Enterprises, Government Schemes for MSME in India, Covid impact on MSME	1) To understand the concept of MSME 2) To study the government schemes related to MSME

2	<b>FORMATION OF MSME:</b>	Business opportunity, scanning the environment for opportunities, evaluation of alternatives and selection based on personal competencies. Registration under MSME, Udyam Registration Portal, MSME Development and Service covered under MSME, Limits of MSME, and Eligibility for MSME.	<ol style="list-style-type: none"> <li>1) To study the procedure of formation of MSME</li> <li>2) To study the Development and Service covered under MSME</li> <li>3) To study Limits of MSME and Eligibility for MSME.</li> </ol>
3	<b>BUSINESS PLAN PREPARATION AND PROJECT REPORT:</b>	<p>Meaning and importance - objectives - Selection of suitable form of organization - Precautions to be taken by an entrepreneur while preparing Business Plan.</p> <p>Meaning, Concept and classification of project</p> <p>Project for Retail store, Oil Mill, Cold Storage, Eco friendly Bag production- Reasons for failure of project</p> <p>Project Appraisal - Break - Even Analysis and Ratio Analysis : Debt : Service Coverage Ratio - Gross Profit : Net Profit Ratio and Return on Investment (ROI), Project Audit</p>	<ol style="list-style-type: none"> <li>1) To understand the concept and various aspects of Business Plan and Project Report</li> <li>2) To study the concept of project appraisal and its related aspects</li> </ol>
4	<b>PROJECT ASSISTANCE:</b>	Financial assistance through State Financial Corporation's (SFC's), District Industries Centre (DIC), Maharashtra Industrial Development Corporation (MIDC), National Institute for Entrepreneurship and Small Business Development (NIESBUD), National Institute of Small Industry Extension Training (NISIET), Small Industries Development Organization (SIDO), Small Industrial Development Bank of India (SIDBI), Technical Consultancy Organization (TCO), Commercial	<ol style="list-style-type: none"> <li>1) To study the role of various institutions in Project assistance</li> <li>2) To study the scheme of assistance and incentives of various institutions</li> </ol>

		Banks, Industrial Finance Corporation of India (IFCI) - Non-financial assistance from District Industries Centre (DIC), Small Industries Service Institute (SISI), Khadi and Village Industries Commission (KVIC) - Financial incentives for Small Scale Industries (SSI's) and <i>Tax</i> Concessions - Assistance for obtaining Raw Material, Machinery, Land and Building, Venture Capital and Technical Assistance	
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### Teaching Methodology:

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Expected Outcome
1	12	Group Discussion, Quiz	Related Videos and PPTs	Understanding the concept and government schemes related to MSME
2	12	Power Point Presentation, Survey Analysis	Related Videos and PPTs	Gaining practical knowledge related to formation of MSME
3	14	Poster Making, Article Review, Practical based learning, Problem solving based learning	Project Reports of Companies, Related Videos and PPTs	Students will be able to prepare business plan and formulate project report
4	10	Power Point Presentation, Case study	Annual Reports of Companies Related Videos and PPTs	Understanding the role and schemes of various institutions in Project assistance

### Method of Evaluation:

Topic No.	Internal Evaluation	External Evaluation	Suggested Add On Course
1	MCQ, Assignment	As per University Norms	1) MSME Entrepreneurship
2	Project, Presentation	As per University Norms	2) Professional Entrepreneurship Courses
3	Project, Quiz, Tutorials	As per University Norms	3) Entrepreneurship: Launching an Innovative Business
4	MCQ, Assignment	As per University Norms	4) Essentials of Entrepreneurship: Thinking and Action

### References:

- 1) Pandey G.N. - 'A Complete Guide to Successful Entrepreneurship' Vikas Publishing House Pvt Ltd.
- 2) Maharashtra Centre for Entrepreneurship Development - 'Project Profile', 'Profile for SSIP Projects.'
- 3) Edward D. Boao - 'Opportunities'.
- 4) Prof. John Mullins - 'The New Business Road Tests' - Pearson.
- 5) Prof. Rajeev Roy - 'Entrepreneurship' Oxford University Press.
- 6) Rashmi Bansal - 'Stay Hungry Stay Foolish' - CIIFIM, Ahmedabad.
- 7) Dr. Patel V.G. - 'When The Going Gets Tough' - Tata McGraw Hill, New Delhi.
- 8) Mark. J. Dollinger, Entrepreneurship - Strategies and Resources, Pearson Edition.
- 9) Udai Pareek and T.V. Rao, Developing Entrepreneurship
- 10) S.V.S. Sharma, Developing Entrepreneurship, Issues and Problems
- 11) Srivastava, A Practical Guide to Industrial Entrepreneurs
- 12) Anil Kumar: Small Business and Entrepreneurship I.K. International Publishers
- 13) Government of India, Report of the committee on Development of small and medium entrepreneurs, 1975
- 14) Bharusali, Entrepreneur Development
- 15) **23 Vidya Hattangadi : Entrepreneurial**

- 16) Dr. Venkataramanappa : : Entrepreneurship Development
- 17) B. Janakiraman , Rizwana M: Entrepreneurship Development
- 18) N.V.R Naidu : Entrepreneurship Development, I.K. International Publishers
- 19) Business Entrepreneurship – Dr. M. B. Sonawane
- 20) Business Entrepreneurship –Dr. S. L. Shirgave.

**Web References:**

- 1) <https://msme.gov.in/>
- 2) <https://www.startupindia.gov.in/>



**T.Y. B.Com. (Semester -V) (2019 Pattern)**

**Special Paper-II**

**Marketing Management-II**

**Course code – 355 (h)**

**Objectives:**

- The objective of this course is to facilitate understanding of the conceptual framework of marketing and its applications in decision making under various environmental constraints.
- The course will make learners understand how to make effective marketing decisions, including assessing marketing opportunities and developing marketing strategies and implementation plans.

<b>Unit No</b>	<b>Topic</b>	<b>No. of Lectures</b>	<b>Teaching Method</b>	<b>Proposed skills to be developed</b>
<b>1</b>	<b><u>Market Demand and Sales Forecasting</u></b> What is Demand? Definition Meaning Determinants Understanding Needs, Wants and Demands in Marketing. Types of Demands in Marketing Meaning of Sales Forecast, Sales Budget and Sales Quota Sales Forecasting Methods Forecasting Techniques	<b>12</b>	Conceptual Learning, Power Point Presentation, Library Work, Assignment.	To equipped with a comprehensive understanding of the key factors in demand and sales forecast.

2	<p><b><u>Marketing of Non-Profit Organization</u></b></p> <p>Non-Profit Organization-Concept, Characteristics Types Problems Need of Marketing of Non-Profit Organization Non-Profit Organization in India</p>	12	Conceptual Learning , Visit Assignment.	Familiarizing the students with the application of the concept & need of marketing in Non-profit organization.
3	<p><b><u>Changing Role of Marketing Organizations</u></b></p> <p>Meaning of Marketing Organization Types of Marketing Organizations Factors Affecting on Marketing Organization Essentials of an effective Marketing Organizations The changing role of marketing and marketers.</p>	12	Conceptual Learning, Power Point Presentation, Library Work, Case Study.	Understanding marketing organization and its changing role.
4	<p><b><u>Brand Building Strategy</u></b></p> <p>Concept of Brand Strategy Importance of Building a Brand Strategy Brand Building Strategy key concepts and Steps Various types of Brand Building Strategies Reviewing Brand Building Strategies</p>	12	Conceptual Learning, Power Point Presentation, Group Discussion, Assignment.	Understanding the concept and importance of Building Brand Strategy, as well as its relationship in reviewing to competitive advantage.
	<b>Total</b>	<b>48</b>		

## References

<b>Sr.No</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>
1	Marketing Management	Philip Kotler	Pearson Publication
2	Marketing Management	Rajan Saxena	McGraw Hill Education
3	Marketing Management	V. S. Ramaswamy & S. Namakumari	Macmillan Publication
4	Strategic Brand Management, Building, Measuring and Managing Brand Equity.	Keller .K	Pearson Publication
5	Marketing Management	Dr.K.Karunakaran	Himalaya Publishing House
6	Agriculture Marketing	J.W.Barker	Oxford University Press
7	Sales Forecasting Management: A Demand Management Approach	John T.Mentzer & Mark A. Moon	Sage Publications
8	Global Marketing	Carlyle Farrell	Sage Publications

**Savitribai Phule Pune University, Pune**  
**Third Year, B.Com.**  
**Revised Syllabi for Three Years B. Com. Degree Course**  
**(CBCS-2019 Pattern) (w.e.f. 2021-22)**

**Semester - V**

**Course Code: 355 (i)**

**Subject: Agricultural and Industrial Economics II**

**Paper-II**

**Total Credits: 4**

**Objectives:**

1. To understand the concept of Agricultural Marketing and related Issues.
2. To impart adequate knowledge role of Agricultural Processing in India.
3. To understand the Role, Importance and Growth of Major Industries in India.
4. To get acquainted with the role and problems of Public sector Enterprises in India.

**Depth of the program – Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Content</b>	<b>Purpose Skills to be Developed</b>
<b>1</b>	<b>Agricultural Marketing</b>	1.1 Nature, Scope and Role of Agricultural Marketing in India 1.2 Organisation and Functions of Agricultural Marketing in India 1.3 Problems of Agricultural Marketing, 1.4 Present Status of Food Retail Marketing System in India 1.5 Recent Agricultural Marketing Policies in India, 1.5.1 National Agriculture Market (e-NAM ) 1.5.2 Model APLM Act, 2017	<ul style="list-style-type: none"> <li>▪ To apprise students regarding various aspects of Agricultural marketing.</li> <li>▪ To understand the functions and Problem of Agricultural Marketing.</li> <li>▪ To impart knowledge about Policies of Agricultural Marketing.</li> </ul>
<b>2</b>	<b>Agricultural Processing</b>	2.1 Role and Growth of Agricultural Processing in India 2.2 Scope & Importance of Agricultural Processing. 2.3 Problems & Remedial Measures of Agricultural Processing. 2.4 Governments Schemes for Development Agro-Processing Industries	<ul style="list-style-type: none"> <li>▪ To understand the role of Agricultural Processing.</li> <li>▪ To make the students know about Problems &amp; remedial measures of Agricultural Processing.</li> </ul>
<b>3</b>	<b>Major Industries in India</b>	The Role, Importance, Growth and Problems of... 3.1 Agro-Industries 3.1.1 Textiles and Jute Industry 3.1.2 Sugar Industry	To understand the Role, Importance and Growth of Agricultural Industry, Textiles and Jute Industry, Sugar Industry, Service Industry, Information Technology Industry,

		3.2 Service Industry 3.2.1 Information Technology Industry 3.2.2 Health Sector	Health Sector
4	<b>Public sector Enterprises</b>	4.1 Role of Public Sector in Economic Development of India. 4.2 Government Policy towards Public Sector. 4.3 Problems of Public Sectors, Issues Regarding Deregulation 4.4 Disinvestment and Future of Economic Reforms	<ul style="list-style-type: none"> <li>▪ To understand the role of the Public sector</li> <li>▪ To get acquainted with Government Policy towards Public Sector.</li> <li>▪ To understand the problems of the Public sector in India</li> </ul>

### Teaching Methodology:

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	14	Lecture, PPT/ Group Discussion, Library, Problem-solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication- SWF E-Content	<ul style="list-style-type: none"> <li>▪ Visit any Agriculture Marketing Committee and Identify the problem of Agricultural Marketing.</li> </ul>	<p><b>After completing this topic, the student will be able to understand</b></p> <ul style="list-style-type: none"> <li>▪ The Meaning and Role of Agricultural Marketing</li> <li>▪ Various aspect of Agricultural Marketing In India.</li> <li>▪ Agricultural Marketing Policies in India</li> </ul>
2	10	Lecture, PPT/ Group Discussion, Library, Problem-solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication- SWF E-Content	<ul style="list-style-type: none"> <li>▪ the importance of Agro-Processing in India.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Role of Agricultural Processing in India</li> <li>▪ Scope &amp; Importance of Agricultural Processing.</li> <li>▪ Problems &amp; remedial measures of Agricultural Processing.</li> <li>▪ Scheme for Agro-Processing Industries</li> </ul>
3	12	Lecture, PPT/ Group Discussion, Library, Problem-solving based learning, Case study,	Relevant videos, Consortium for Educational Communication- SWF	<ul style="list-style-type: none"> <li>▪ Identify the Problems of the Sugar Industry.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The role, Importance and Growth of Iron &amp; Steel Industry, Textiles and Jute Industry, Sugar Industry,</li> </ul>

		Jigsaw reading, Practical based learning	E-Content		Cement Industry, Automobile Industry
4	12	Lecture, PPT/ Group Discussion, Library, Problem-solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication- SWF E-Content	<ul style="list-style-type: none"> <li>▪ Importance of Public sector in India.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Role of Public Sector</li> <li>▪ Government Policy towards Public Sector, problems associated with Privatization, issues regarding Deregulation, Disinvestment and future of Economic Reforms.</li> </ul>

### Recommended Books:

1. Acharya and Agarwal, 1987, Agricultural Marketing in India, Oxford & IBH Publishing Company.
2. Bhalla, G. S. and Singh G., 2001, Indian Agriculture: Four Decades of Development, Sage Publications
3. Acharya and Agrawal (1992), Agricultural Marketing in India, Oxford and IBH Publishing Co. Pvt. Ltd.
4. Crawford (1997), 'Marketing and Agribusiness Texts', FAO.
5. Jelen P. (1985), Introduction to Food Processing. Reston Publishing.
6. Potly, V.H. and M. J. Mulky (1993), Food Processing. Oxford & IBH
7. Datt R. & K.P.M Sundharm (2007) Indian Economy, S.Chand&Co.Ltd.Delhi.
8. Misra S.K. & V.K.Puri, (2017) Indian Economy, Himalaya Publication house Mumbai.
9. Kavimandan Vijay, (2009) KrushiArthshastra, Shri Mangesh Prakashan, Nagpur.
10. Barthwal R.R (2204) Industrial Economics Introductory Text Book, New Age International Limited, Kanpur.
11. Govind Bhattacharjee (2020) Public Sector Enterprises in India, Evolution, Privatization and Reforms, Sage Publication, Delhi

### Web reference

1. <https://www.youtube.com/user/cecedusat>
2. <https://www.swayamprabha.gov.in/>
3. <http://14.139.13.96:8080/> - UGC CEC E Contain on Agricultural Economics
4. <http://14.139.13.96:8080/> - UGC CEC E Contain on Industrial Economics

**Savitribai Phule Pune University**  
**Faculty of Commerce & Management**  
**T Y B Com (Semester V)**  
**(Choice Based Credit System)**  
**Revised Syllabus (2019 Pattern)**

**SPECIAL ELECTIVE COURSE – I**

**Course Code: 355 (j)**

**Subject: Defence Budgeting Finance and Management special paper - II**

**Total credits:**

**Objectives:**

1. Understanding the importance of Defence Budget
2. To know the latest development of Indian Defence Industry.
3. To know the concept financial management regarding defence.
4. Understanding Defence Expenditure.

Unit No.	Topic	No. of lectures	Teaching Method	Proposed Skill to be Developed
1	<b>Defence budgeting</b> A) Budget as Instrument of financial Direction & control B) Ingredients of Budgeting C) Defence budgeting-it cost Effectiveness	12	Lecture group Discussion library work assignment field visit	.Understanding how the defence Budget is used as instrument of financial direction & Control.
2	<b>Development of Indian defence Industry</b> A) Indian Defence Industry : A Historical overview B) Policy changes in Defence Industry C) India's offset Policy to encourage	12	Lecture group Discussion library work assignment field visit	Understanding the development of Indian Defence Industry and growth opportunities in the Indian defence industry.

	domestic production <b>D) Growth opportunities in the Indian Defence Industry</b>			
<b>3.</b>	<b>Financial management</b> A) Purpose, planning, control & need. B) Salient features of India's Economic system	<b>12</b>	Lecture group Discussion library work assignment field visit	Understanding of propose, planning control, need and of defence financial management.
<b>4</b>	<b>Defence Expenditure Trends</b> A) Defence Expenditure as a production of the GDP B) Calculating Defence Expenditure C) Characteristics of defence Spending	<b>12</b>	Lecture group Discussion library work assignment field visit	Understanding Defence Expenditure proportion with GDP & know the calculating system of defence Expenditure & also characteristics of Defence Expenditure.

**Reference:**

- 1) Raju G. C. Thomas(1978), 'The Defense of India: A Budgetary perspective', MacMillan Publication, New Delhi
- 2) Subramanyam K. (1991), 'India's security perspective – Policy and Planning' Lancer books, New Delhi.
- 3) Nanda Ravi, (1991), 'National Security Perspective, policy planning', Lancer Books, New Delhi.
- 4) Khanna D. D. and Malhotra P N. (1993), 'Defense vs Development: A Case study of India', Indus publication company, New Delhi.
- 5) Kennedy Gavin (1983), 'Defense Economics' Gerald Duckworth & Co. Ltd.
- 6) Ghosh Amiya (1996), "India's Defense Budget & Expenditure Management in Wider Context", Lancer Publication and Span Tech, Delhi
- 7) Dutta Meena and Sharma Jai Narayan, 'Defence Economics', Deep and Deep Publication, New Delhi.
- 8) Deger s. & Sen S. (1986), 'Military Expenditure in the Third World countries: The Economic effects', Routlet & Kegan Paul.
- 9) S. Sandeep (col ret'd), 'Funding for Defence & Development', Published by Sumit Enterprises, New Delhi.
- 10) Annual report, Ministry of Defence, government of India.
- 11) Report of the finance Commission, government of India.



**T.Y. B.Com. (Semester -V) (2019 Pattern)**

**Special Paper-II, Course Code - 355(k)**

**Insurance, Transport & Tourism-I**

**(Insurance)**

**Objectives:**

- To acquaint the students with basic insurance terminology.
- To aware about risk management and develop proper understanding in insurance.
- To study the various pricing elements and its importance.
- To review the various legislations and its application to insurance business in India

<b>Unit No</b>	<b>Topic</b>	<b>No. of Lectures</b>	<b>Teaching Method</b>	<b>Proposed skills to be developed</b>
<b>1</b>	<b>Insurance Terminology- Common for both Life and Non-Life Insurance</b> First Premium- Renewal- Mode- Limited Payment- Policies- Single Premium- convertible- Days of Grace- Lapse- paid Up Policy- Revival- Deferment Period- Nomination- Assignment- Bonus- With Profit— Participating- Non-Participating or Without Profit- Surrender Value	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignment, Visit to institutions etc.	Understanding the basic terminology in Life and Non-life insurance
<b>2</b>	<b>Risk Management:</b> Concept of Risk, Uncertainty, Perils and Hazards, Definition of Risk – classification of risk □ Personal, Property & Liability Risk, Insurance and Risk Management Technique □ Risk sharing and Risk Transfer, Risk prevention & avoidance.	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignments, etc.	Understanding the risk management in insurance.
<b>3</b>	<b>Pricing Elements</b> – Pricing Objectives, Pricing elements- Probability & Mortality Tables, Time value of	<b>12</b>	Lecture, PPT, Group Discussion,	Understanding the pricing elements and its

	Money, Loading & benefits promised, Rate computation-single premium plan, level premium plan, flexible premium plan, yearly renewable plan, saving & investment aspect of life insurance, Methods of rating.		Library Work, Assignments, tests, etc.	importance.
<b>4</b>	<b>Other Legislations Applicable to Insurance Business in India:</b> Motor Vehicles Act 1988, Marine Insurance Act 1963, Consumer Protection Act 1986, Public Liability Insurance Act 1991, The Insurance Laws (Amendment) Act 2015.	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignment, Visit to institutions, tests, etc.	Understanding various legislations and its application to insurance business
	<b>Total</b>	<b>48</b>		

**References:**

1. Sharma M.N. (2006), 'Insurance Principles and Practice (in Hindi), Apex Publishing House, 1<sup>st</sup> edition.
2. Vinayakam N. Radhaswamy and Vasudevan S. V., 'Insurance Principles & Practice', S. Chand & Co. New Delhi,
3. M. Arif Khan (2016), 'Theory and Practice of Insurance', Educational Book House, Aligarh ,
4. Malhotra R. P. 'Elements of Insurance' , Macmillan Publisher
5. M. N. Mishra & S.B. Mishra (2016), 'Insurance Principles and Practices', S. Chand & Company, New Delhi.
6. Panda G. S. (2011), 'Principles & Practice of Insurance, Kalyani Publisher,

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Computer Programming and Application Special Paper II

Subject Name: Computer Networking and E-Commerce-I.

Course Code: 355(L).

Course Objectives:

1. To know about computer network.
2. To understand different topologies used in networking
3. To learn different types of network.
4. To understanding the use of connecting device used in network.

Unit No.	Name of the Topic	No. of Lectures	Ref. Books
1	<b>Computer Networks.</b> <b>Introduction</b> Computer Network, Topology, Types of Networks <b>Communication Types</b> Serial, Parallel Modes of Communication : Simplex, Half Duplex, full Duplex, Server Based LANs & Peer-to-Peer LANs, Comparison of both Protocols and Standards	12	Book No 1,3
2	<b>Network Models</b> <b>ISO-OSI Reference Model</b> : Layers in the OSI Model, Functions of each layer <b>SAP Terminology Internet Model (TCP/IP)</b> <b>Comparison of ISO-OSI &amp; TCP/IP Model</b> <b>Addressing</b> : Physical Addresses, Logical Addresses, Port Addresses <b>IP Addressing</b> : Classful addressing, Classless addressing <b>Transmission Media</b> <b>Guided Media (Wired)</b> : Coaxial cable, Twisted Pair Cable, Fiber Optic cable <b>Unguided Media(Wireless):-</b> Radio Transmission, Microwave Transmission, Infrared Transmission	14	Book No 1,3

3	<b>Types Of Networks IEEE Standards</b> <b>Wired LANs : Ethernet Ethernet Types</b> Standard Ethernet (MAC Sublayer, Physical layer), Fast Ethernet(MAC Sublayer, Physical layer). Gigabit Ethernet(MAC Sublayer, Physical layer) <b>Network Interface Cards (NIC):-</b> Components of NIC, Functions of NIC, Types of NIC. <b>Wireless LANs</b> <b>IEEE802.11</b> (Architecture, MAC Sub layer, Frame Format, Frame Types, Addressing Mechanism) <b>Bluetooth</b> (Architecture Piconet and Scatter net Applications)	12	Book No 1,3
4	<b>Case Studies of E-Commerce</b> Amazon, Flipkart ,Google Pay ,Phone Pay, Paytm,.....etc.	10	Book No 4,5
Total No of Lectures		48	

## Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
Unit – I	12	Use ICT or presentation on Computer Networks.	U–tube Tutorial on Computer Networks.	-	Familiar with Computer Networks.
Unit – II	14	Use ICT or presentation on Network Models	U–tube Tutorial Network Models	-	Familiar with Network Models
Unit – III	12	Use ICT or presentation on Types Of Networks	U–tube Tutorial Types Of Networks	-	Familiar with Types Of Networks
Unit – IV	10	Use ICT or presentation on Case Studies of E-Commerce	U–tube Tutorial Case Studies of E-Commerce	Case Study on E-Commerce	Familiar with Case Studies of E-Commerce

### Recommended Books:

1. Computer Networks - Andrew Tanenbaum (III Edition)
2. Data Communications & Networking - Behrouz Ferouzan (III Edition)
3. Complete Guide to Networking - Peter Norton
4. E-Commerce, Strategy, Technologies And Applications : David Whiteley, Tata Mcgraw Hill
5. E-Commerce & Mobile Commerce Technologies: Pandey, Saurabh Shukla, S. Chand

**Revised syllabi (2019 Pattern) for three years B.Com. Degree course (CBCS)**

**Semester : - V ( T.Y.B.Com)**

**Subject Code :- PR- 356 (a)**

**Subject : - Business Administration – III ( Finance)**

**Preamble**

Financial management is one of the most important aspects in business. In order to start up or even run a successful business. Financial management deals with directing, controlling, planning and strategically organizing financial projects or accounts of an organization. Financial management education involves using management rules for the finances of an organization. Study of financial management opens up lot of diverse career opportunities for students in the private and public sector such as include investment banking, entrepreneurship, financial analysis, financial and managerial accounting, and strategic financial management. It also serves larger benefit to young entrepreneurs who aspire to set up their own ventures.

**Objectives of the course**

1. To acquaint the student with knowledge about Corporate Finance and the structure if the Indian Financial Market
2. To develop the Financial Planning Skills among the Students by introducing them to the process of efficient Financial Planning
3. To educate the students on the importance of Capitalisation and the importance to maintaining an optimum capital structure
4. To create awareness among the students in the various sources of Finance available for raising corporate capital

### Depth of the program – Fundamental Knowledge

Unit No	Unit Title	Contents	Skills to be developed
1	Introduction to Corporate Finance and Indian Financial System	<p>1.1 Meaning, Features, Need, Importance of Corporate Finance, Finance Functions ( Executive and Routine Functions)</p> <p>1.2 Meaning , Objectives , Scope of Financial Management</p> <p>1.3 Indian Financial Market – Meaning and Structure ( Money Market &amp; Capital Market)</p> <p>1.4 Stock Exchange – Meaning , Features ,Functions.</p> <p>1.5 Bombay Stock Exchange , National Stock Exchange of India , Dematerialisation of Securities</p> <p>1.6 Securities Exchange Board of India – Objectives , Powers and Functions</p> <p>1.7 Credit Rating Agencies – Function/ Role and Advantages .</p> <p><b>Overview of Credit Rating Information Services of India Limited (CRISIL)</b></p> <p><b>Investment Information and Credit Rating Agency of India (ICRA) Limited</b></p> <p><b>Credit Analysis and Research (CARE) Limited.</b></p>	<p>Conceptual Understanding</p> <p>Accessing and analyzing information skills</p> <p>Technical Knowledge</p>
2	Financial Planning	<p>1.1 Financial Planning – Meaning, Nature and Characteristics , Scope , Importance, Advantages and Limitations ,</p> <p>1.2 Steps in Financial Planning</p>	<p>Conceptual Understanding</p>

		<p>1.3 Factors Influencing Financial Plan Formulation</p> <p>1.4 Methods of Estimating Financial Requirement</p>	<p>Analytical skills</p> <p>Technical Knowledge</p>
<b>3</b>	Capitalization and Capital Structure	<p>1.1 Capitalization and Capital Structure</p> <p>1.2 Capitalization – Concept, Factors governing capitalization, Over and Under capitalization - Causes and effects, Fair Capitalization.</p> <p>1.3 Capital Structure- Meaning, Concept and Principles of capital structure, Factors influencing the pattern of capital structure.</p> <p>1.4 Trading on equity- Concepts and effects.</p>	<p>Conceptual Understanding</p> <p>Analytical Skills</p> <p>Technical skills</p>
<b>4</b>	Sources of Corporate Finance	<p>1.1 Types of Capital – Fixed and Working, Owned and Borrowed, Short Term , Medium Term and Long Term</p> <p>1.2 Sources of Capital – Bank Overdraft, Trade Credit Accrual Accounts, Financial Lease , Operating Lease , Hire Purchase , Bank Loan , Merchant loan , Debentures , Equity Shares , Preference Shares Stock Dilution and Flotation</p> <p>1.3 Concept Cost of Capital and Concept of Risk and Return</p>	<p>Conceptual Understanding</p> <p>Analytical skills</p> <p>Accessing and analysing information</p>



Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	PPT , Lectures by experts from Industry experts, Visit to Stock Exchange	Online Videos ,	Project Report on SEBI and Credit Rating Agencies	Conceptual understanding and Conceptual Clarity
2	12	PPT , Lectures by Finance Managers	Online Videos	---	Conceptual Clarity and Practical understanding Technical Knowledge
3	18	PPT	Online Videos	----	Conceptual Clarity and Practical understanding
4	08	PPT , Lectures Finance Experts, Case Study , Study of Capital Structure of organisations from Annual Reports	Online Videos	Project Report on Study of Capital Structure of organisations from Annual Reports of 3 companies	Analytical skills Decision making skills Technical skills

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add on Course
Unit – I	MCQ / Project	As per University norms	Certificate course of SEBI for Investor Awareness
Unit – II	MCQ, Assignments, PPT	As per University norms	Certificate course in Collaboration with Credit Rating Agencies for Financial Statement Analysis
Unit – III	MCQ, Project and Assignment	As per University norms	
Unit – IV	MCQ , Case study , Project Report	As per University norms	

## References:

### List of Books Recommended: -

- Capital Market and Financial System in India ,Asheesh Pandey (Author),Ingram short title
- CAPITAL MARKET ,S Gurusamy (Author),McGraw Hill Education
- Indian Financial System: Financial Markets, Institutions and Services,Siddhartha Sankar Saha (Author),McGraw Hill
- Capital Marketing and Securities Law ,Kumar Rajnish ,Commercial law Publication
- Investment Analysis and Portfolio Management ,Chandra Prosanna,Tata McGraw-Hill Education Private Limited
- An Introduction to International Capital Markets: Products, Strategies, Participants ,Andrew M. Chisholm,willey
- Capital Markets in India ,Rajesh Chakrabarti (Author),SAGE Response
- Financial Accounting for Management (Author: N Ramchandra and published by Tata Mgraw Hill).
- Industrial Finance (Author: R. Vishwanthan and published by Macmillian).
- Fundamentals Of Financial Management (Author: Vyuptakesh Sharan and published by Dorling).
- Financial Management (Author: Sheeba Kapil and published by Pearson).

**Revised syllabi (2019 Pattern) for T.Y.B. Com Degree course (CBCS)**  
**Semester – V**  
**SPECIAL ELECTIVE COURSE (Special Course – III)**  
**Banking and Finance-Special Paper III (Sem.V)**  
**(Banking Law and Practices in India – I Course code: 356-B)**  
**Total Credits: 04 (Theory 03 + Practical 01=04)**

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**Objectives:**

1. To familiarize the Banking Laws and Practice in correlation to the Banking System in India.
2. To understand the legal aspects of Banking transactions and its implication as a Banker and as a customer.
3. To familiarize the students with the Banking Laws and Practices in India.
4. To make students capable of understanding and applying the legal and practical aspects of banking to help them technically sound in banking parlance.

Unit No.	Topic and Contents	No. of Lectures	Teaching Method	Skills to be developed
1.	<p><b>Banking Regulation Act, 1949:</b>  <b>Introduction the objectives and selective provisions :</b>                      1.1 Definition of word Banking (Sec 5B) and Bank (Sec 5C)                      1.2 Management (sec 10)- Capital (Sec. 11)- Reserve Fund (Sec. 16) - Bank Licensing (Sec. 22) -Branch Licensing (Sec. 23)- Liquid Assets (Sec. 24)                      1.3 Profit and Loss Account and Balance Sheet- (Sec.10 A, 10 B, 29 and 30).                      1.4 Powers of Reserve Bank of India- Sec.35 and 36</p>	14	Lectures, PPT, Group and Panel Discussion, Library Work, Assignments	Understanding the Banking Regulation Act 1949 with Objectives and selective Provisions.

	<p>1.5 Voluntary Amalgamation (Sec. 44A) - Compulsory Amalgamation (Sec. 45)- Liquidation (Sec.45 R)</p> <p>1.6 Banking Regulation Act, 1949 applicable to Cooperative Banks- The Banking Regulation (Amendment) Bill, 2020-Features.</p>			
2.	<p><b>Negotiable Instruments Act, 1881:</b></p> <p>2.1 Introduction-Definition-Meaning- Features of Negotiable Instruments.</p> <p>2.2 Types of Negotiable Instruments- Promissory Note, Bill of Exchange and Cheque</p> <p>2.3 Parties in Negotiable Instruments</p> <p>2.4 Negotiation-Presentment-Concepts of Dishonour of Negotiable Instruments</p> <p>2.5 Noting and Protesting</p>	12	Lectures, PPT, Group and Panel Discussion, Library Work, Assignments	Understanding the Provisions of Negotiable Instruments Act, 1881
3.	<p><b>Insolvency and Bankruptcy Code, 2016</b></p> <p>3.1 Objectives and importance of IBC, 2016</p> <p>3.2 Applicability</p> <p>3.3 Important definitions: (Sect. 3) Board, Corporate Person, Corporate debtor, Creditor, default, Financial Information, Insolvency Professional, Corporate Applicant, Corporate Guarantor, Insolvency and Bankruptcy.</p> <p>3.4 Corporate Insolvency Resolution Process (Sect.6,7,12,13,14)</p> <p>3.5 Liquidation Process (Sect. 33, 34, 35)</p> <p>3.6 Voluntary Liquidation of Corporate Person (Sect.59)</p> <p>3.7 Fast Track Corporate Insolvency Resolution Process (Sect. 55, 56, 57)</p>	14	Lectures, PPT, Group and Panel Discussion, Library Work, Assignments	Understanding the Objectives, Importance, Selective Definitions and Provisions Insolvency and Bankruptcy

	<p>3.8 Offence and Penalty regarding Corporate (Sect. 68 to 71)</p> <p>3.9 Bankruptcy Order for Individual and Partnership Firm (Sect.121, 125, 126,128, 138, 139)</p> <p>3.10 Offence and Penalties regarding Individual (Sect.184 to 187)</p> <p>3.11 The framework of Insolvency and Bankruptcy Board of India (Sect.188, 196)</p>			
<b>4</b>	<p><b>Banking Ombudsman Scheme-2006</b></p> <p>4.1 Objectives of Banking Ombudsman Scheme-2006</p> <p>4.2 Important Definitions: Banking Ombudsman, Appellate Authority, Authorised Representative, Complaint, Secretariat</p> <p>4.3 Appointment and Tenure of Ombudsman</p> <p>4.4 Power and Duties of Ombudsman</p> <p>4.5 Procedure for Redressal of Grievance</p>	8	Lectures, PPT, Group and Panel Discussion, Library Work, Assignments	Understanding the details Banking Ombudsman Scheme, 2006
	<b>Total</b>	<b>48</b>		

### References:

1. Bangia R.K. (2015), 'Banking Law and Negotiable Instruments', Allahabad Law Agency
2. Banking Regulation Act- 1949, Universal Law Publishing
3. Banking Ombudsman Scheme, 2006 Reserve Bank of India, Mumbai.
4. Insolvency and Bankruptcy Code, 2016- The Gazette of India, New Delhi.
5. Kandasami K.P. (2010), 'Banking Law and Practice', S. Chand Publication
6. K. Natarajan , Yefim Gordon, (2007), 'Banking: Theory, Law and Practice' Himalaya Publishing House
7. Kothari Vinod (2017), 'Tannan's Banking Law and Practice in India' Lexis Nexis Publisher
8. Varshney P.N. (2014), "Banking Law and Practices", Sultan Chand and Sons

**SYLLABUS FOR T.Y.B.COM UNDER CBCS PATTERN 2019**  
**SEMESTER-VI**  
**PAPER- II**  
**SUBJECT NAME: - BUSINESS LAWS AND PRACTICE PAPER II (BLP-II)**

**COURSE CODE – 356 (c)**

**Objectives of the course:**

To develop an understanding of the significant compliances under various Laws.

To gain the ability of students to address a basic business legal application-oriented issues.

**Depth of the program:**

Basic to application based

**Objectives of the Subject:**

- To impart the students with the fundamental understanding of rules & regulations under various business laws.
- To study & acquaint students an application & overview based knowledge of Laws.
- To make the students aware about legal Business Environment of India.

<b>Unit . No.</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Purpose skills to be developments</b>
1	<b>Historical Development of Company Law in India :</b>	1.1 Historical Overview, Development of various concepts and trends in company law, Social responsibilities of companies, Development of company law administration. 1.2 Need based (Major) amendments from inception to till the date.	Understanding the historical development of Company law.

2	<b>Prevention of Oppression and Mismanagement.</b>	2.1 Meaning of oppression, who can apply to court, Rule of Majority, protection of minority interest, remedies and rights of minority shareholders, 2.2 Prevention of oppression and mismanagement, powers of the court	It will help the students to gain insights of prevention of oppression & mismanagement.
3	<b>Inspection, Investigations, Compromise and Arrangement:</b>	3.1 Inspection and investigation suo-moto - Investigation by Government. 3.2 Rights and duties of Inspector - Report by an Inspector. 4.1 Schemes for Compromise and Arrangement - Persons entitled to apply for sanction of court. 4.2 Powers of court - Conditions for sanction of compromise - Effect of sanction	To create awareness among the students about Inspection and Investigations. To study & understand the Compromise and Arrangement in detail.
4	<b>Rules of Corporate Governance :</b>	5.1 Meaning & Concept of corporate Governance, History of Corporate Governance – Cadbury Committee Report 5.2 Principles of Morality and business ethics –Code of conduct for professionals.	Understand the rules of Corporate Governance in detail.

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	➤ Internet Sources.	➤ You tube videos on Historical Development of Company Law in India ➤ E-Content provided by	Project report should be prepared on Historical	Understanding the Historical Development of Company Law in

			UGC/University/MOOC /You tube etc. to be studied.	Development of Company Law in India	India
2	12	<ul style="list-style-type: none"> <li>➤ Group Discussion.</li> <li>➤ Internet Sources.</li> </ul>	<ul style="list-style-type: none"> <li>➤ E-Content on Prevention of Oppression and Mismanagement provided by UGC/University/MOOC etc. to be studied &amp; analyzed.</li> </ul>	Project report can be prepared on overview of Prevention of Oppression and Mismanagement.	Understanding in detail Prevention of Oppression and Mismanagement.
3	10	<ul style="list-style-type: none"> <li>➤ Internet Sources.</li> <li>➤ Presentation can be taken.</li> </ul>	<ul style="list-style-type: none"> <li>➤ E-Content on Inspection and investigation provided by UGC/University/MOOC/You Tube etc. to be Watched &amp; analyzed.</li> </ul>	Project report can be prepared on Inspection and investigation	Understanding the Inspection and investigation.
3	10	<ul style="list-style-type: none"> <li>➤ PPT Method can be used.</li> <li>➤ Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>➤ E-Content on Compromise and Arrangement provided by UGC/University/MOOC/You Tube etc. to be Studied &amp; analyzed.</li> </ul>	Project report can be prepared on Compromise and Arrangement.	Understanding Compromise and Arrangement in detail.
4	06	<ul style="list-style-type: none"> <li>➤ Internet Sources.</li> <li>➤ Presentation can be taken.</li> </ul>	<ul style="list-style-type: none"> <li>➤ E-Content on Corporate Governance provided by UGC/University/MOOC/You Tube etc. to be Studied &amp; analyzed.</li> </ul>	Project report can be prepared on benefits of Corporate Governance.	Understanding the Corporate Governance in detail.



## References

Sr. No.	Title of the Book	Author/s	Publication
1	Company Law	Dr. Avtar Singh	Eastern Book Co. (EBC)
2	Lexis Nexis's Guide to the Companies Act	RAMAIYA	Generic book
3	Taxmann's Companies Act with Rules	Taxmann	Taxmann
4	The Companies Act 2013 Bare Act	Government of India	Educreation Publishing
5	Adjudication of Companies Act matters under NCLT	Rajender Kumar	Urmila Publication House
6	Taxmann's Company Law Ready Reckoner	Taxmann	Taxmann

## Practical for Semester – IV

Topic	Mode of Practical
Historical Overview, Development of various concepts and trends in company law	Library Assignment
Prevention of Oppression and Mismanagement	Applications with library & Online sources.

Inspection and Investigations	Library Assignment.
Corporate Governance	Review of Research Papers/Articles, News Paper Articles etc.

1. Mercantile Law – P.L. Malik
2. Industrial Law – P.L. Malik
3. Labour and Industrial Law – M.N. Mishra (Central Publication Allahabad)
4. Company Law – Avtar Singh (Eastern Book Comp. Lucknow )
5. Secretarial Practice – M.C. Kuchhal
6. Company Law - A.K.Mujumdar (Taxmann Publication Pvt.Ltd.)
7. Corporate Law – Dilip Shinde, Kiran Nerkar, Abhishek Sahu

## Revised Syllabi (2019 Pattern) for Three years B.Com Degree Course (CBCS)

Semester -V

Course Code- 356 (d)

Subject: --: Co-operation & Rural Development ((Special Paper-III)

Total Credits: - 04 (Theory 03 Internship 01=04)

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### Preamble:

Cooperative learning requires students to engage in group activities that increase learning and adds other important dimensions. The positive outcomes include academic gains, improved race relations and increased personal and social development. The purpose of this course is to impart knowledge of concept of Cooperative Management and its related dimensions.

### Objectives of the Course:

- 1) To acquaint students with the Co-operative Management.
- 2) To study the Co-operative Organization and Management

Unit No.	Unit Title	Contents	Skills to be developed
1	Introduction to Co-operative Management	1.1 Meaning, Nature and Scope of Co-Operative Management 1.2 Objectives of Co-operative Management. 1.3 Principles of Co-operative Management.	1) Conceptual clarity and understanding the Meaning, Characteristics and Importance cooperative management

		<p>1.4 Functions of Co-operative Management</p> <p>1.5 Ethics in co-operative Management</p>	<p>2) To understand the Principles and Process of management</p> <p>3) To understand functions of cooperative management</p>
<b>2</b>	<b>Role of Co-operative Management</b>	<p>2.1 Evaluation of Co-operative Management</p> <p>2.2 Levels of Management.</p> <p>2.3 Board of Directors and Executives Duties, Responsibilities</p> <p>2.4 Role in Co-operative Management.</p> <p>2.5 Professionalization of Management- Need and Significance.</p>	<p>1) To understand the importance and role of co-operatives.</p> <p>2) To understand need of professional management in co-operatives</p>
<b>3</b>	<b>Human Resource Management and Co-operative Organizations</b>	<p>3.1 Human Relationship in Co-operative.</p> <p>3.2 Co-operative Philosophy and H.R.D.</p> <p>3.4 Recruitment</p> <p>3.4 Training and Managerial Development</p> <p>3.5 Appraisal and Evaluation</p>	<p>1) To acquire the fundamental knowledge about human resource in co-operative institutions</p> <p>2) To understand the Elements of Human resource management</p>
<b>4</b>	<b>Decision Making and Co-operative Management</b>	<p>4.1 Decision Making – Meaning and Importance</p> <p>4.2 Decision Making Process, Steps Involved</p> <p>4.3 Measures to overcome the defects in Co-Operative Management.</p> <p>4.4 Trends in Co-operative Management in Global Scenario</p>	<p>To understand elements of decision making, process of decision making in co-operative management</p>

## Teaching Methodology:

Topic No.	Total Lectures	Innovative Methods to be used	Film Shows and A.V. Application	Project	Expected Outcome
1	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources	Relevant You Tub Videos, Relevant slide show, online Video, Short Film Show	Individual assignment report	Understanding of basic knowledge of co-operation
2	12	Pre reading, Class discussion, internet resources, Lecture, Expert Lecture, PPT / Poster Presentation, Group Discussion, Library /Home Assignment ,Internal Assignment, case study	Relevant You Tub Videos, Short Film Show, A.V Application	Visit to Office	Understanding the importance and Essentials role of co-operation
3	12	Lecture, PPT Presentation Poster Presentation, Group Discussion, Library visit ,Home Assignment ,Pre reading, Class discussion , library visit , internet resources ,students Seminar/Workshop ,case study	Relevant You Tub Videos PPT, AV Application, online video	Presentation	1) To acquire the fundamental knowledge about human resource in co-operative institutions 2) To understand the Elements of Human resource management
4	12	Guest Lectures of eminent Personalities , Group Discussion, Library visit ,Home Assignment, case study	Online Videos, Relevant slide show, Short Film Show	Individual Resume, Bio–Data Writing	To understand elements of decision making, process of decision making in co-operative management

**Method of Evaluation:**

Subject	Internal Evaluation	External Evaluation	Suggested Add-on Course
Unit- I	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	Certificate Course on Cooperation Management
Unit-II	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	
Unit-III	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	
Unit-IV	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	

**References:**

Sr. No	Title of Book	Author/s	Publication	Place
1	New Dimensions of Co-operative management	G.S.Kamat	Himalaya Publication House,	Mumbai
2	Co-operative Management principals and techniques	Dr.Nakkiran S.A.-	Himalaya Publication House,	Mumbai

3	Co-operative Management and Administration	Goel B.B	Deep and Deep Publication	New Delhi.
4	Co-operation and Rural Development	Principal Dr.Nitin Ghorpade	Success	Pune
5	Human Resource Management Practices in Co-operative sector	Principal Dr.Shaikh Aftab Anwar	Idea Publication	New Delhi
6	Theory & Practice of Co-operation,	Dr. Dhiraj Zalte &Others –	Prashant Publication	Jalgaon
7	C.A State and C-operative Movement			
8	<a href="https://www.bhagirathgram.org/">https://www.bhagirathgram.org/</a>			
9	Journal of Commerce and Management Thought(JCMT)			

## T.Y. B.Com.

### B.Com Degree Course Revised 2019 Pattern (CBCS)

#### Cost and Works Accounting Special Paper III

Name -: Techniques of Cost Accounting

Course Code -: 356 –E (SEM-V)

**Objectives:**

1. To prepare learners to understand the basic techniques in Cost Accounting
2. To understand the learner, application of Cost Accounting techniques in cost control and decision making.
3. To enable the learners to prepare various types of Budgets.
4. To learn the basic concept of Uniform Costing and Inter-firm comparison
5. To enhance the knowledge of students about MIS and Supply Chain Management.

Unit No.	Unit Title	Contents	Skills to be developed
1	Marginal Costing	1.1 Meaning and concepts- Fixed cost, Variable costs, Contribution, Profit-volume Ratio, Break-Even Point, Margin of Safety. and Angle of Incidence.  1.2 Cost-Profit-Volume Analysis- Assumptions and limitations of cost-profit volume analysis  1.3 Application of Marginal Costing Technique:- Make or buy decision, Acceptance of export order & Limiting factors.	a. Understanding of important concepts in Marginal Costing.  b. It will develop the ability of a the learner to make short-term decisions with the help of Marginal Costing.  c. Develop the mindset of the student for making ethical decisions.



		<p>1.4 Ethical and Non-Financial Considerations relevant to decision making.</p> <p>(simple Practical Problems based on concepts excluding decision making)</p>	
2	Budgetary Control	<p>2.1 Definition and Meaning of Budget &amp; Budgetary control</p> <p>2.2 Objectives, essentials, and procedure of Budgetary control</p> <p>2.3 Advantages and Limitations of Budgetary control</p> <p>2.4 Types of Budgets</p> <p>2.5 Zero Base Budgeting</p> <p>( Simple practical problems based on cash and flexible budget only)</p>	<p>a. It will help the learner to understand the basics of Budget and Budgetary Control</p> <p>b. The learner will get an idea of how to prepare different types of Budgets</p>
3	Uniform costing and Inter-firm Comparison	<p>3.1 Meaning, objectives, advantages, and disadvantages of Uniform Costing.</p> <p>3.2 Uniform Cost Manual</p> <p>3.3 Meaning, pre-requisite, advantages, and disadvantages of Inter-firm comparison.</p> <p>(Theory Only)</p>	<p>a. It will acquaint the learner to understand essential concepts of Uniform Costing and Inter-Firm Comparison.</p>

4	MIS and Supply Chain Management	4.1 Management Information System- Introduction, features, and procedure, preparation.  4.2 Supply Chain Management(SCM)- Meaning, features, and Models of SCM.  (Theory Only)	a.The student will familiar with MIS and SCM  b. The student will understand the basic concept of SCM
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### Teaching Methodology

Unit No.	Total Lectures	Innovative Methods to be used	Films Shows and AV Applications	Project	Expected Outcome
1	16	Discussion of related Case studies	Classroom discussion	Visit to small industries for understanding the decision making with the help of Marginal costing	Development of overall outlook of Marginal Costing.
2.	16	Expert Lecture	Observation of annual Budget of Public and Private Companies	Visit small industries to get an idea about functional budgets.	Develop the knowledge about preparation of various types Budgets

3	08	Group Discussion	ICAI cloud campus videos on Uniform costing and Interfirm Comparison	Group discussion about the application of Uniform costing and Interfirm Comparison in industry.	Understand the implementation of Interfirm comparison
4	08	Expert Lecture of Cost Accountant or Industrialist	YouTube clippings on case studies of modern costing environment .	Discussion of various case studies.	Understand the implementation of modern costing environment

### Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Suggested Add-On Course
Unit I	Multiple Choice Questions, Written Test, Internal Examination & PPT based presentation, Orals, Assignments, Tutorials, etc.	SPPU	Visit industries and make a report on the visit.
Unit II			
Unit III			
Unit IV			

## References

Sr. No	Title of the Book	Author	Publisher	Place
1	Theory and Techniques of Cost Accounting.	B.L. Lall and G.L. Sharma	Himalaya Publishing House	New Delhi.
2	Strategic Cost Management and Performance Evaluation	Board of Studies, ICAI	ICAI	New Delhi
3	Advanced Cost Accounting	Dr. D. M. Gujrathi	Idol Publication	Pune
4	Advanced Cost Accounting	Dr.Kishor. M. Jagtap	Tech-Max Publication	Pune
5	Cost Accounting- Principles & Practices	Dr.M.N. Arora	Vikas Publishing House ,	New Delhi

6	Advanced Cost Accounting	S. P. Jain and K. L. Narang	Kalyani Publication	New Delhi
7	Cost Accounting- Principles & Practices	JawaharLal&SeemaShrivastawa	Tata Mcgraw Hill	New Delhi
8	Advanced Cost Accounting	N.K. Prasad	Book Syndicate Pvt. Ltd.	Kolkata
9	Cost Accounting	P. V. Rathnam and P. Lalitha	Kitab Mahal	Delhi
10	Practice in Advanced costing and Management Accounting.	Prof. Subhash Jagtap	Nirali Prakashan	Pune
11	Practical Costing.	R.K. Motwani	Pointer Publisher	Jaipur

12	Cost Accounting.	R.S.N. Pillai and V. Bhagavati	Sultan Chand and Sons	New Delhi.
13	Advanced Cost Accounting and Cost Systems	Ravi Kishor	Taxman's Allied Service Pvt. Ltd.	New Delhi
14	Cost Accounting, Theory and Problems,	S.N. Maheshwari and S.N. Mittal	Mahavir book Depot	New Delhi
15	Cost Accounting Principles and Practice.	S.P. Iyengar	Sultan Chand & Sons Accounting, Taxman's	New Delhi
16	Cost Audit and Management Audit.	V.K. Saxena and Vashista	Sultan Chand and Sons	New Delhi

## Web References

Sr. No	Lectures	Films	PPTs	Articles	Others
For all the units.	Guest Lectures by Field Persons such as working executives from industries and of Practicing Cost and Management Accountants. the	YouTube films showing working of different industries.	Relevant Power Point Presentations are available on all these topics.	Articles from the Professional Journals such as The Management Accountant, The Chartered Accountant, The Chartered Secretary, The Institute of Chartered Financial Analyst of India	<a href="https://icmai.in">https://icmai.in</a>  <a href="http://www.globalcma.in">www.globalcma.in</a> <a href="http://eclm.unpune.ac.in">eclm.unpune.ac.in</a>

### Notes: The breakup of marks in the Examination will be as follows:

- 50 % of the marks for Theory & 50 % of the marks for Practical Problems  
Areas of practical problems:
  1. Marginal Costing
  2. Cash and Flexible Budget

Revised syllabi (2019 Pattern) for three years B. Com. Degree course (CBCS)

Syllabus for **B. Com. Semester: - V**

Subject Name: - **Business Statistics - III**

Course code: - **356(F)**

Credit 3

### **Preamble to the syllabus:**

Tools and techniques learned in Statistics give a precise way of formulating and analyzing a problem and to make logical conclusions. Concepts and tools introduced in this course are useful to students for higher studies and career in any branch of Economics, Commerce and Management. Professionals working in these fields, wishing to upgrade their knowledge, will also benefit. The stress of the course will be on building the concepts and their applications.

In modern times, Statistics is viewed not as a mere device for collecting numerical data but as a means of developing some techniques for their handling and analysis and drawing valid inferences from them. Statistics provides tools for making decisions when conditions of uncertainty prevail. So it is very useful in various fields like agriculture, business, management, economics, finance, insurance, education, biotechnology and medical science etc.

**Depth of the Course** – Basic Knowledge of Operations Research and Decision Theory

### **Objective of the Course**

- 1. To understand and Master the concepts of Game Theory.**
- 2. To understand and Master the concepts of Statistical Decision Theory.**
- 3. To understand and Master the concepts of Replacement and Sequencing Problems**
- 4. To understand and Master the concepts of Statistical Quality Control.**



Unit No.	Unit Title	Contents	Purpose/Skills to be developed
1	<b>Game Theory</b>	Meaning, two person zero-sum game, pure and mix strategies, Pay off tables, saddle points, Minimax and Maximin principles, Dominance principles, Algebraic Method to solve $2 \times 2$ Game, Graphical Method, Examples and problems.	<ol style="list-style-type: none"> <li>1. To understand the concepts of game theory</li> <li>2. To apply the concepts of game theory to real life business problems.</li> </ol>
2	<b>Statistical Decision Theory</b>	Introduction, acts, states of nature, pay off, regret, Decision Making Under Risk, Expected Opportunity Loss (EOL) Criterion and Expected Monetary Value (EMV) Criterion, Decision Making Under Uncertainty, Maximin Criterion, Maximax, Minimax Regret Criterion, Laplace Criterion, Hurwitz Criterion, Examples and problems.	<ol style="list-style-type: none"> <li>1. To learn different statistical methods of decision making.</li> <li>2. To apply the different statistical methods to real world decision making problems.</li> </ol>
3	<b>Replacement and Sequencing problem</b>	Replacement Problem - Introduction, replacement of Item that deteriorates with time when value of money remains same during the period. Sequencing Problem - Assumptions in sequencing model, Basic terminology, n-jobs through two machine problems.	<ol style="list-style-type: none"> <li>1. To understand the concepts of replacement and sequencing problems.</li> <li>2. To apply the concepts of replacement and sequencing to real world problems.</li> </ol>
4	<b>Statistical Quality Control</b>	Introduction, Chance and assignable Causes of variation, Uses of SQC, Control limits, specification limits, Tolerance limits Process and product control, Control charts for mean, range, P-Chart, C-Chart, Process Capability study, Interpretation of capability index $C_p$ and $C_{pk}$	<ol style="list-style-type: none"> <li>1. To understand the concept of statistical quality control.</li> <li>2. To understand different SQC techniques.</li> <li>3. To apply SQC techniques to real world problems.</li> </ol>

### List of Practicals

Sr. No.	Name of Experiment
1	Game Theory
2	Statistical Decision Theory
3	Statistical Quality Control

### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	10	ICT	NA	NA	Students will be able to understand and apply concepts game theory to real world business problems.
2	14	ICT	NA	NA	Students will be able to understand and apply concepts of statistical decision theory to real world business problems.
3	10	ICT	NA	NA	Students will be able to understand and apply concepts of replacement and sequencing problems to real world business problems.
4	14	ICT	NA	NA	Students will be able to understand and apply the concept of statistical quality control to real world business problems.

## Method of Evaluation

Subject	Internal Evaluation	External Evaluation	Unit wise distribution of Marks (Final Examination)	Suggested Add on Course
Unit – I	30%	70%		
Unit – II	30%	70%		
Unit – III	30%	70%		
Unit – IV	30%	70%		
Total				

### Notes: -

1. Internal evaluation is continuous assessment.
2. Internal evaluation shall have following components: -
  - a. At least one test of 20 marks involving objective questions of following type: - multiple choice, true or false, state definitions/concepts, one line answer etc.
  - b. At least one assignment of 05 marks.
  - c. If time and resources permit then there can be power point presentation of group or individual (this component is not compulsory)
  - d. Final score will be average score of all components.

**References:**

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
1	Operations Research	Harmdy A. Taha	Pearson India Ltd.	New Delhi
2	Operations Research	Kanti Swaroop,P. K. Gupta and Man Mohan	Sultan Chand and Sons	New Delhi
3	Business Mathematics	J. K. Sharma	Vikas Publishing House	New Delhi
4	Statistical Quality Control	D.C. Montgomery	John Wiley and Sons	New York
5	Fundamentals of Mathematical Statistics	S. C. Gupta and V. K. Kapoor	Sultan Chand and Sons	New Delhi
6	Fundamentals of Statistics	S. C. Gupta	Himalaya Publishing House	New Delhi
7	Operations Research	D. S. Hira and P. K. Gupta	S. Chand and Sons	New Delhi

## Revised syllabi (2019Pattern) for three years B. Com. Degree course (CBCS)

Semester : - V (T. Y. B. Com)

Course Code : 356 (g)

Subject : - Business Entrepreneurship (Special Paper-III)

Total Credits: - 04 (Theory 03 Internship 01=04)

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### Preamble:

The purpose of this course is to impart professional knowledge on the theories, models and basic principles of organizational behaviour in the field of entrepreneurship, and teach students how to apply them to entrepreneurial activities. After completing the course, students should improve their decision-making skills. , Leadership and entrepreneurship skills make meaningful contributions to the interests of stakeholders. This course enables students to acquire in-depth entrepreneurial knowledge.

### Objectives of the course:

- 1) To acquaint students with knowledge and skills required for organizing and carrying out entrepreneurial activities.
- 2) To develop the ability of analyzing and understanding business situations.
- 3) To study the interdependent, fast-changing and diverse world of entrepreneurship and innovation.
- 4) To familiarize students with various concepts and processes involved in entrepreneurship and business formation and development.
- 5) To provide students with the knowledge, skills and motivation to encourage entrepreneurial approach in a variety of settings.
- 6) To study the application of group dynamics to counseling, personal growth and other psychologically-oriented groups.

Unit No.	Unit Title	Contents	Skills to be developed
1	<b>Organizational Behavior for Entrepreneurship</b>	<b>Organization:</b> Meaning, Definition, Goals, Approaches. <b>Organizational Behavior for Entrepreneurship:</b> Meaning, Definitions, Need, Nature, Importance & Scope, Characteristics, Types, Objectives, Merits	1. To understand the concept Organization. Students should be able to know the organizational behavior required for entrepreneurship. 2. To study the organization and how to balance work and life.

		and Demerits of Organizational Behavior for Entrepreneurship, Organizational Behavior Models. <b>Developing Entrepreneurial Behavior in the Organization:</b> Opportunity Identification, Opportunity Facilitation, Organizational Competencies, And Individual Competencies.	3. To equip the students with various aspects of organizational behavior with organizational models and the culture developed in the organizational entrepreneurship.
2	<b>Individual Behavior and Personality for Entrepreneurship</b>	<b>Individual Behavior for Entrepreneurship:</b> Characteristics, Determinants of individual behavior, Requisites for Individual Behavior in Entrepreneurship. <b>Personality for Entrepreneurship:</b> Meaning, Definitions, Characteristics, Determinants of Personality for Entrepreneurship. Personality Traits, Personality Development, Emotional Intelligence for Entrepreneurship, Entrepreneurial Personality, Difference between Individual Behavior and Group Behavior in Entrepreneurship, Factors of Personality, Role of Personality, Theories of Personality	1. Students will be able to learn how to establish work culture and patterns in an office space or a similar environment. 2. To equip the students with techniques of emotional interaction at work place. 3. To enhance students personal development through soft or technical skills. 4. To develop their competency in a way of learning, by self-analysis on necessary areas for improvement and necessary skills to advance in career or industry. 5. To focus on transferable skills that make one a competitive candidate for any job.
3	<b>The Study of Autobiographies of Entrepreneurs</b>	<b>Autobiographies of Entrepreneurs:</b> 1) Mr. Anand Mahindra (Chairman, Manindra & Mahindra) 2) Mr. Baba Kalyani (MD, Bharat Forge) 3) Mr. Shiv Nadar (Indian Industrialist) 4) Mr. Laxmi Niwas Mittal (CEO, Arcelor Mittal) 5) Mr. Adar Poonawala (CEO, Serum Institute of India, India's Vaccine King) 6) Women Entrepreneurs: Falguni Nayar (The	1. Students will able to develop and adopt some new values, and learn from their hardships, they will also get answers for their dilemmas. 2. Students will be able understand the role of attitude in entrepreneurship. 3. Students will be made aware and learn how the student entrepreneurs in India build their own ventures. 4. Students will also have an idea how these entrepreneurs have lived out their dreams with incredibly big, risks, trials, and tribulations and gone

		founder of Nykaa) 7) Kiran Mazumdar Shaw (Founder of Biocon Ltd)	on to become the top in their businesses.
4	<b>Group and Group Dynamics for Entrepreneurship</b>	<b>Group:</b> Meaning, Definition, Classification, Group Task, Group Size, Group formation process, Group Structure. <b>Group Dynamics for Entrepreneurship:</b> Influence in Group, Types, Principles and Functions of Group Dynamics in Entrepreneurship, Group Cohesion- Helping Behavior, Co-Operation and Competition, Improved Work Group. Role of Entrepreneur.	1. To understand the concept of group and group dynamics for Entrepreneurship. 2. Students will be able to equip the knowledge of Organizing and Planning skills, Decision making skills, Students will get hands on Problem solving skills, Communication skills, Persuasion and influencing skills, feedback skills, skills in chairing meeting, conflict resolution skills for Entrepreneurship.

### Teaching Methodology:

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
1	12	Group discussion and case studies	Related Videos and PPTs	Personal or group project on new business creation.	Capacity to: I. Analyze Individual and group behavior, and understand the implications of organizational behavior on the process of management. ii .Demonstrate the applicability of the concept of organizational behavior to understand the Behavior of people in the organization. iii) Analyze the complexities associated with management of the group behavior in the Organization.

2	12	Completing research or conceptual papers on topics appropriate for the course. Participation in classroom discussion and group exercises.	Related Videos and PPTs	To prepare a detailed report on new age entrepreneurship.	Capacity to: I. Analyze the complexities associated with management of the group behavior in the organization. Ii. Develop the necessary managerial and personal skills which are essential to the current business environment.
3	12	Interactive teaching-learning methods- Process-oriented learning - Learning from mistakes - Interviewing entrepreneurs - Bilateral learning - Group discussion - Networking – Discussion - Problem-oriented learning - Active learning	Biographical videos or CDs of entrepreneurs	Assign small business models, product or project(s) to students to understand them with the 360 degree of the business.	Iii Understanding the new age entrepreneur and will learn each.  Understanding to interpret their own business plan.
4	12	Small students group formation	Related Videos, PPTs	Assign small projects in group.	Capacity to- I. Demonstrate understanding of principles of group dynamics, including



					group process components. ii. Become more conscious of his/her personal growth through participation as a group member.
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### Method of Evaluation:

Subject	Internal Evaluation	External Evaluation	Suggested Add-on Course
Unit- I	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	Certificate Course on: Business Fundamentals - Entrepreneurship
Unit-II	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	
Unit-III	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	
Unit-IV	Attendance, Continuous Assessment Test, Assignment /Quiz/Course project, Seminar and Discussion	As per University norms.	

### References:

- 1) Barringer B.R. and Ireland R.D., 2006. Entrepreneurship: Successfully Launching New Ventures. Pearson: New Jersey.
- 2) Bartlett C.A. and Ghoshal S., 2002. Managing Across Borders: The Transnational Solution. Harvard Business School Press: Boston.
- 3) Failing to succeed: The story of India's first e-commerce company by K.Vaitheeswaran
- 4) Entrepreneurship simplified from idea to IPO by Ashok Soota and S. R .Gopalan
- 5) Cut the crap and jargon by Shradha Sharma and T N Hari
- 6) A thought to million dollars by Salma Moosa and Vivek Srinivasan.
- 7) The manual for Indian Startups by Vijay Kumar Ivaturi, Meena Ganesh, Alok Mittal, Sriram Subramanya & Prof Sadagopan.
- 8) Entrepreneurship Development, Khanna S.S, S. Chand, New Delhi.
- 9) Entrepreneurship Development, Gupta, Shrinivasan, S. Chand, New Delhi

**Revised Syllabi (2019Pattern) for T.Y. B. Com. Degree course (CBCS)**

**Semester - V**

**SPECIAL ELECTIVE COURSE (Special Course Paper – III)**

**Marketing Management \_ Course Code: 356(H)**

**Objectives of the Course:**

1. To introduce the concept of advertising and advertising media.
2. To provide the students the knowledge about appeals and approaches in advertisement.
3. To acquaint the students to the economic ,social and regulatory aspects of advertising.
4. To make the student understand the role of Brand Management in marketing.
5. To enable the students to apply this knowledge in precisely enhancing their skills in the field of advertising.

<b>Unit No</b>	<b>Unit Title</b>	<b>Contents</b>	<b>Proposed Skills to be developed</b>
1	<b>Introduction to Advertising.</b>	<b>Fundamentals of Advertising:</b> Definition of Advertising, Objectives of Advertising, Functions of Advertising, Types of Advertising, Benefits and Limitations of Advertising, Role of Advertising in Modern Business, Role of Advertising in Marketing Mix.  <b>Advertising Media:</b> Definition, Classifications and Characteristics of Different Advertising Media, Factors affecting Selection of Advertising Media, Media Mix, E-Advertising.	<ul style="list-style-type: none"><li>● Conceptual clarity of the meaning of advertising.</li><li>● To impart the knowledge about Advertising Media.</li></ul>
2	<b>Appeals and Approaches in Advertisement</b>	<b>Appeals:</b> Introduction of Different Appeals and their Significance, Advertising Message, Direct and Indirect Appeal, Relation between Advertising Appeal and Buying Motive,	<ul style="list-style-type: none"><li>● To impart knowledge about the appeals and approaches in Advertisement.</li></ul>

		<b>Approaches:</b> Positive and Negative Emotional Approaches to Advertisement.	<ul style="list-style-type: none"> <li>● To acquaint the students to direct and indirect appeals.</li> </ul>
3	<b>Economic, Social and Regulatory Aspects of Advertising</b>	<p><b>Economic Aspects</b>-Effects of Advertising on Production Cost, Effects of Advertising on Distribution Costs, Effects of Advertising on Consumer Prices, Advertising and Monopoly, Wastes in Advertising,</p> <p><b>Social Aspects</b> - Ethics in Advertising, “Truth” in Advertising,</p> <p><b>Regulatory Aspects</b>-Role of Advertising Standards Council of India (ASCI).</p>	<ul style="list-style-type: none"> <li>● To make students understand the Effects of Advertising on Production Cost, Distribution Costs and Consumer Prices.</li> <li>● To help the students to develop the knowledge of Economic and Social and Regulatory Aspects of Advertising.</li> </ul>
4	<b>Brands and Brand Management</b>	Meaning & definitions of brand, Characteristics of brands, Types of brands, Advertising and Branding, Brand Extension, Brand identity, Identity Sources – symbols, logos, trademarks, Brand loyalty. Brand Management Process, Challenges in New Branding.	<ul style="list-style-type: none"> <li>● Conceptual clarity of meaning of brand.</li> <li>● To impart knowledge about Brand identity, Brand Extension and Brand loyalty.</li> </ul>

### Teaching Methodology:

Topic No.	Total Lectures	Innovative Methods to be used	Film shows and AV Applications	Expected Outcome
1	14	Power Point Presentation, Survey Analysis	Short Film, AV Application Use of You Tube	<ul style="list-style-type: none"> <li>● Student will understand the concept of advertising and advertising media</li> <li>● To enable them to analyze and interpret</li> </ul>
2	10	Power Point Presentation, Group Discussion, Survey Analysis	Short Film, AV Application Use of You Tube	<ul style="list-style-type: none"> <li>● To enable the students to study the Appeals and Approaches in Advertisement</li> </ul>

3	12	Power Point Presentation, Group Discussion, Survey Analysis  Feld visit	Short Film,  AV Application Use of You Tube	<ul style="list-style-type: none"> <li>● It will help the students to apply the various Economic and social aspects of advertising.</li> </ul>
4	12	Group Discussion, Quiz,  Poster Making	Short Film,  AV Application Use of You Tube	<ul style="list-style-type: none"> <li>● It will help them to implement this knowledge in practical situations by enhancing their skills in the field of Marketing</li> </ul>

### Methods of Evaluation:

Topic No	Internal Evaluation	External Evaluation	Suggested Add on Course
1	Quiz, Project, Group Discussion	Practical, Descriptive Questions, Quiz	Certificate Course in Role of Advertising in Modern Business
2	Practical, Presentation	Practical, Descriptive Questions, Quiz	Short Course Advertising Appeal and Buying Motive.
3	Quiz, Group Discussion	Practical, Descriptive Questions, Quiz	Certificate Course in career options in Advertising.
4	Presentation, Group Discussion, Practical	Practical, Descriptive Questions, Quiz	Short Course in Branding.

**References:**

<b>Sr. No.</b>	<b>Title of the Book</b>	<b>Author/s</b>	<b>Publication</b>	<b>Place</b>
<b>1</b>	Marketing Management	Philip Kotler	Pearson Publication	New Delhi
<b>2</b>	Marketing Management	Rajan Saxena	McGraw Hill Education	New Delhi
<b>3</b>	Principles of Marketing	Philip Kotler	Pearson Publication	New Delhi
<b>4</b>	Advertising Management	Rajiv Batra	Pearson Publication	New Delhi
<b>5</b>	Marketing Management	V. S. Ramaswamy & S. Namakumari	Macmillan Publication	Noida

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**Savitribai Phule Pune University, Pune**  
**Third Year, B.Com.**  
**Revised Syllabi for Three Years B. Com. Degree Course**  
**(CBCS-2019 Pattern) (w.e.f. 2021-22)**

**Semester - V**

**Subject: Agricultural and Industrial Economics III**

**Paper- III**

**Course Code: 356 (i)**

**Total Credits: 4**

**Objectives:**

1. To understand the Features, Role and Recent Trends in Rural Economy.
2. To impart adequate knowledge about the role, types, and Problems of Agricultural Credit.
3. To understand the new Industrial Policy.
4. To acquaint the learner with various aspects of Liberalisation.

**Depth of the program – Fundamental Knowledge**

<b>Unit No.</b>	<b>Unit Title</b>	<b>Content</b>	<b>Purpose Skills to be Developed</b>
<b>1</b>	<b>Rural Economy of India</b>	1.1 Meaning and Features of Rural Economy 1.2 Recent Trends in Rural Economy 1.3 Interdependence of Agriculture and Industry 1.4 Need of Coordination in Agricultural Development and Industrial Development 1.5 Sustainable Agriculture- Concept, Needs, factors leading to Sustainable Agriculture	<ul style="list-style-type: none"> <li>▪ To understand the meaning and Features of Rural Economy</li> <li>▪ To make the students know about Role of Agriculture in Rural Development</li> <li>▪ To impart knowledge about Concept, and Need of Sustainable Agriculture</li> </ul>
<b>2</b>	<b>Agricultural Credit</b>	2.1 Role and Importance of Agricultural Credit 2.2 Types and Sources of Agricultural Credit 2.3 Cooperative Credit Organisations and Agricultural Credit 2.4 Financial Sector Reforms and Rural Credit 2.4.1 Micro Finance in Rural Credit- Emergence, Role and Challenges	<ul style="list-style-type: none"> <li>▪ To understand the Role and Importance of Agricultural Finance, Types and Sources of Rural Credit,</li> <li>▪ To make the students know about Financial sector reforms and Challenges of Agricultural Credit in</li> </ul>

		2.4.1 Financial Sector Reforms and Cooperative Credit 2.5 Challenges of Rural and Agricultural Credit in India	India.
<b>3</b>	<b>Industrial Policy</b>	3.1 Importance of Industrial Policy in Industrial Development 3.2 New Industrial Policy 1991- Broad Features 3.3 Impact of New Industrial Policy 1991 on Indian Economy 3.4. Shortcomings of the New Industrial Policy 1991	<ul style="list-style-type: none"> <li>▪ To understand the Importance of Industrial Policy in Industrial Development</li> <li>▪ To make the students know about the Industrial Policy 1991</li> </ul>
<b>4</b>	<b>Towards Liberalisation</b>	4.1 Concept and Role of Multinational Corporations (MNCs) 4.2 Concept and Role Foreign Direct Investment (FDI) and Foreign Institutional Investment (FII). 4.3 Special Economic Zones (SEZ)- Concept, Features, Role, Growth and Problems	<ul style="list-style-type: none"> <li>▪ To make the students know about the Concept and Role of Multinational Corporations, Foreign Direct Investment and Foreign Institutional Investment and SEZ</li> </ul>

#### Teaching Methodology:

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome After completing this topic, the student will be able to understand
<b>1</b>	<b>10</b>	Lecture, PPT/ Group Discussion, Library, Problem-solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication-SWF E-Content	<ul style="list-style-type: none"> <li>▪ Impact of Recent Trends on Agriculture Economy</li> </ul>	<ul style="list-style-type: none"> <li>▪ Features of Rural Economy</li> <li>▪ Recent Trends in Agriculture Economy</li> <li>▪ Agriculture and Industry-Interrelations</li> <li>▪ Sustainable Agriculture- Concept, Need and factors leading to leading to Sustainable Agriculture.</li> </ul>
<b>2</b>	<b>14</b>	Lecture, PPT/ Group Discussion, Library, Problem-solving based learning, Case	Relevant videos, Consortium for Educational Communication-SWF E-Content	<ul style="list-style-type: none"> <li>▪ Visit to Any Agricultural Credit Society and Make a small project on Functioning of Credit Society</li> </ul>	<ul style="list-style-type: none"> <li>▪ Role and Importance of Agricultural Credit</li> <li>▪ Types and Sources of Rural Credit</li> <li>▪ Financial Sector Reforms and Rural Credit</li> </ul>

		study, Jigsaw reading, Practical based learning			<ul style="list-style-type: none"> <li>▪ Micro Finance in Rural Finance – Emergence, Role, and Challenges</li> <li>▪ Challenges to Rural and Agricultural Credit in India</li> </ul>
<b>3</b>	<b>10</b>	Lecture, PPT/ Group Discussion, Library, Problem-solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication-SWF E-Content	<ul style="list-style-type: none"> <li>▪ Write a note on Importance of Industrial Policy in Economic Development</li> </ul>	<ul style="list-style-type: none"> <li>▪ Importance of Industrial Policy in Economic Development</li> <li>▪ Industrial Policy 1991,</li> <li>▪ Impact of Industrial Policy 1991 on Indian Economy, Shortcomings of the New Industrial Policy,</li> </ul>
<b>4</b>	<b>14</b>	Lecture, PPT/ Group Discussion, Library, Problem-solving based learning, Case study, Jigsaw reading, Practical based learning	Relevant videos, Consortium for Educational Communication-SWF E-Content	<ul style="list-style-type: none"> <li>▪ Make a short Project on Identify the role of MNCs, FDI and SEZ in Economic Development of India</li> </ul>	<ul style="list-style-type: none"> <li>▪ Concept and Role of Multinational Corporations</li> <li>▪ Concept and Role Foreign Direct Investment and Foreign Institutional Investment.</li> <li>▪ Concept and Role, Growth and Problems of Special Economic Zone</li> </ul>

#### Recommended Books:

1. Ramesh Chand, S. K. Srivastava and Jaspal Singh, (2017), Changing Structure of Rural Economy of India Implications for Employment and Growth, NITI Ayog Discussion Paper.
2. Dabesh Roy, Gopakumaran Nair, Gynendra Mani, (2018) Rural India Perspective 2017, Oxford University Press, India.
3. Devonath Narzary, Phanindra Goyari, (2011), Institutional Agriculture Credit in India, LAP Lambert Academic Publishing
4. J. Satyanarayana, (1996), The New Industrial Policy and Its Impact on India's Industrial Economy, Booklinks Corporation,
5. Puri V.K., Misra S.K., Indian Economy (2019), 37th Edition, Himalaya Publishing House.
6. Gardner, B.L. and G.C. Rausser (2001), Handbook of Agricultural Economics, Vol. I., Elsevier.
7. Kavimandan Vijay, (2009) Krushi Arthshastra, Shri Mangesh Prakashan, Nagpur.
9. Kavimandan Vijay, Krushi Arthshastra.
6. Ramesh Singh, Indian Economy, Tata Mc-Graw Hill, Publication



7. Annual Reports, Department of Agriculture, Govt. of India
8. Agricultural Statistics at a Glance 2019, Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, New Delhi.

### **Web reference**

- 1) [https://niti.gov.in/writereaddata/files/document\\_publication/Rural\\_Economy\\_DP.pdf](https://niti.gov.in/writereaddata/files/document_publication/Rural_Economy_DP.pdf)
  - 2) <https://maitri.mahaonline.gov.in/PDF/Maharashtra%20New%20Industrial%20Policy-2019.pdf>
  - 3) <https://eands.dacnet.nic.in/PDF/At%20a%20Glance%202019%20Eng.pdf>
  - 4) <https://www.youtube.com/user/cecedusat5>
- <https://www.swayamprabha.gov.in/>  
[http://14.139.13.96:8080/lectures.aspx?pno=Paper05\(O\)](http://14.139.13.96:8080/lectures.aspx?pno=Paper05(O)) -UGC CEC E Contain on Agricultural Economics  
[http://14.139.13.96:8080/lectures.aspx?pno=Paper06\(O\)](http://14.139.13.96:8080/lectures.aspx?pno=Paper06(O)) -UGC CEC E Contain on Industrial Economics

**T Y B Com (Semester V)**  
**(Choice Based Credit System)**  
**Revised Syllabus (2019 Pattern)**

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**SPECIAL ELECTIVE COURSE – I**

**Subject: Defence budgeting finance and Management special paper - III**

**Total credits:**

**Course Code: 356 (j)**

**Objectives:**

- 1. To understand the impacts of war & how the economic structure affects**
- 2. To know the elements of war ability**
- 3. To understand the challenges in 21st century against Defence.**
- 4. To Understand the system of financial management in Defence**

<b>Unit No.</b>	<b>Topic</b>	<b>No 'of lectures</b>	<b>Teaching Method</b>	<b>Proposed Skill to be Developed</b>
<b>1</b>	<b>War Impact</b> A) Economic Structure B) Impact on Industry C) Post war Problem	<b>12</b>	Lecture group Discussion library work assignment field visit	Understanding the Impact of war on economy & the post war problem

2	<b>Determinates of war Ability</b> <b>A) Economic Determinates</b> <b>B) Natural Resources and raw Material</b> <b>C) Man power &amp; its utility</b> <b>D) Industrial Capacity</b> <b>E) Foreign Aides contributory Element</b>	12	Lecture group Discussion library work assignment field visit	Understanding the elements of war economy, natural resources, manpower & Industrials capacity and contribution of foreign aid.
3	<b>Military power in 21st century An Analysis</b> <b>A) Sources of military power</b> <b>B) Elements of military power</b> <b>C) Equation to Measure military power</b> <b>D) Nuclear Weapons</b>	12	Lecture group Discussion library work assignment field visit	Understanding the sources of military power the elements of national power and the importance of nuclear weapons
4	<b>Latest contest in Defence &amp; financial management</b> <b>A) System of financial management in defence</b> <b>B) Linkages between planning &amp; Budget</b> <b>C) Arm Impact vs. Indigenisation, pitfans fans &amp; Impact on Defence Budget</b>	12	Lecture group Discussion library work assignment field visit	Understanding the financial management System in defence and the linkages between pit fans & defence Budget.

## References

1. Deger s. & Sen S. (1986), 'Military Expenditure in the Third World countries: The Economic effects', Rout let & Kegan Paul.
2. Agarwal Rajesh K. (1978), 'Defence Production and Development', Gulab Vazirani for Arnold Heinemann publishers.

3. Thomas Raju G. C. (1988) 'Indian security policy', Princeton, New Jersey, University press.
4. Robert Loony and David winter ford (1995), 'Economic Causes and consequences of Defence Expenditure in the Middle East and South Asia', University press.
5. Shrinivas V.N. (2008), 'Budgeting for Indian Defence: Issues of contemporary Relevance', KW Publishers Pvt. Ltd. New Delhi.
6. Annual Report, Ministry of Defence, Government of India.
7. Report of the Finance Commission, Government of India

**T.Y. B.Com. (Semester -V) (2019 Pattern)**

**Special Paper-III, Course Code - 356 (K)**

**Insurance, Transport & Tourism-I**

**(Insurance)**

**Objectives:**

- To know the insurance customer and their behaviors.
- To understand the principles of underwriting and its process.
- To study the insurance market and its regulators.
- To review the insurance business, challenges and its prospects.

<b>Unit No</b>	<b>Topic</b>	<b>No. of Lectures</b>	<b>Teaching Method</b>	<b>Proposed skills to be developed</b>
<b>1</b>	The Insurance Customer Customers are Different- Different Mind sets, Their Satisfactions-Ethical Behaviours- Risk Management- Avoidance or Prevention-Reduction- Retention- Transfer- The techniques, Separation- Duplication, Diversification- Retention and The Individual.	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignment, Visit to institutions etc.	Understanding the insurance customer and their behaviours.
<b>2</b>	<b>Underwriting</b> – Origin, Definition, Objectives & principles of underwriting, Underwriting process-source of information concerning life insurance risk, special underwriting practices in areas such as non-medical insurance, guaranteed issue insurance, reinstatement & policy changes and highly impaired risk.	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignments, etc.	Understanding the principles of underwriting and its process.

<b>3</b>	<b>The Insurance Market:</b> Life and Non-life Insurers- Reinsurers- Individual and Corporate Agents-Brokers- Surveyors- Medical Examiners- Third Party Administrators- Regulator IRDA- Insurance Councils- Ombudsmen- Educational Institutes- Councils- Tariff Advisory Committee.	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignments, tests, etc.	Understanding the insurance market and its regulators.
<b>4</b>	<b>Insurance Business Current Scenario &amp; Future</b> : Privatization, Foreign Direct Investment in India, Status of Indian Insurance Industry in the context of International Insurance Market, Challenges & Future of Insurance Business in India, Insurance Regulatory Systems in UK and USA. Right to Information Act and Insurance Business	<b>12</b>	Lecture, PPT, Group Discussion, Library Work, Assignment, Visit to institutions, tests, etc.	Understanding insurance business, challenges and its prospects.
	<b>Total</b>	<b>48</b>		

#### References-

1. M. N. Mishra & S.B. Mishra (2016), 'Insurance Principles and Practices', S. Chand & Company, New Delhi.
2. M. Arif Khan (2016), 'Theory and Practice of Insurance', Educational Book House, Aligarh.
3. S. Balachandran, 'Life Insurance – Insurance Institute of India', Mumbai,
4. G. S. Panda (2011), 'Principles and Practices of Insurances, Kalyani Publishers, Ludhiana.
5. Kothari & Bahal (2019), 'Principles and Practices of Insurance', Sahitya Bhavan, Agra.
6. Dr. Inderjit Singh, Katyal, Sanjay Arora, 'Insurance Principles & Practices', Kalyani Publishers, Ludhiana,
7. K. C. Mishra & C. S. Kumar (2009), 'Life Insurance Principle & Practice' Cengage Learning India Pvt. Ltd, Delhi.
8. Insurance Regulatory Development Act 1999
9. Life Insurance Corporation of India Act, 1956
10. Insurance Act- 1938

Savitribai Phule Pune University, Pune

(T.Y. B.Com.)

**Computer Programming and Application Special Paper II**

Subject Name: Computer Networking and E-Commerce-II.

Course Code: 356 (L).

Term-II

Unit No.	Topic	No. of Lectures	Ref. Books
1.	<b>Information Security Concepts</b> <b>Information Security</b> Overview: Background and Current Scenario <b>Types of Attacks</b> <b>Goals for Security</b> <b>E-commerce Security</b> <b>Computer Forensics</b> <b>Steganography</b>	12	Book No. 1,2,3
2.	<b>Security Threats and Vulnerabilities</b> Overview of Security threats <b>Weak / Strong Passwords and Password Cracking</b> Insecure Network connections <b>Malicious Code</b> :-Programming Bugs <b>Components of wireless</b> <b>networks Security issues in wireless</b>	12	Book No. 1,2,3

3	<b>Applications of Networks in E Commerce</b> <b>Framework of E-Commerce:</b> Application Services – Interface Layers - Secure Messaging - Middleware Services and Network Infrastructure - Site Security - Firewalls & Network Security TCP/IP – HTTP - Secured HTTP – SMTP - SSL.  <b>Applications of Ecommerce:</b> E-Commerce Organization Applications - E- Marketing - E-Advertising - E-Banking - Mobile Commerce - E-Trading - E-Learning - E- Shopping.	14	Book No 4,5
4.	<b>E-MARKETING TECHNIQUES:</b> <b>Introduction</b> - New Age of Information - Based Marketing - Influence on Marketing - Search Engines & Directory Services - Charting the On-Line Marketing Process - Chain Letters - <b>Applications of 5P's</b> (Product, Price, Place, Promotion, People) <b>E-Advertisement</b> - Virtual Reality & Consumer Experience - Role of Digital Marketing.	10	Book No 4,5
<b>Total No. Lectures</b>		<b>48</b>	

#### Teaching methodology

Topic No.	Total Lectures	Innovative methods to be used	Film shows and AV Applications	Project	Expected Outcome
Unit – I	10	Use ICT or presentation on Information Security Concepts	U–tube Tutorial on Information Security Concepts	-	Familiar with Information Security Concepts
Unit – II	14	Use ICT or presentation on Security Threats and Vulnerabilities	U–tube Tutorial Security Threats and Vulnerabilities	-	Familiar with Security Threats and Vulnerabilities



Unit – III	10	Use ICT or presentation on Applications of Networks in E Commerce	U–tube Tutorial Applications of Networks in E Commerce	-	Familiar with Applications of Networks in E Commerce
Unit – IV	14	Use ICT or presentation on E-MARKETING TECHNIQUES	U–tube Tutorial E-MARKETING TECHNIQUES	-	Familiar with E-marketing techniques

**Recommended Books:**

1. Computer Networks – Andrew Tanenbaum (III Edition)
2. Data Communications & Networking - Behrouz Ferouzan (III Edition)
3. Complete Guide to Networking - Peter Norton
4. E-Commerce, Strategy, Technologies And Applications : David Whiteley, Tata Mcgraw Hill
5. E-Commerce & Mobile Commerce Technologies: Pandey, Saurabh Shukla, S. Chand



# **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Three Year B.Sc. Degree Program in Botany**

**(Faculty of Science & Technology)**

**F.Y.B.Sc. Botany**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2019-2020**

## Title of the Course: B. Sc Botany

### 1. Structure of Course:

<b>Structure B.Sc. Botany syllabus</b>					
Year	Semester	Course Type	Course code	Course Name	Credits
1	1	Compulsory Course	BO 111	Plant life and utilization I	2
			BO 112	Plant morphology and Anatomy	2
			BO 113	Practical based on BO 111 & BO 112	1.5
	2	Compulsory Course	BO 121	Plant life and utilization II	2
			BO 122	Principles of plant science	2
			BO 123	Practical based on BO 121 & BO 122	1.5
2	3	Compulsory Course	BO 231	Botany Theory Paper 1	2
			BO 232	Botany Theory Paper 2	2
			BO 233	Botany Practical Paper	2
	4	Compulsory Course	BO 241	Botany Theory Paper 1	2
			BO 242	Botany Theory Paper 2	2
			BO 243	Botany Practical Paper	2
3	5	Discipline Specific Elective Course	BO 351	Botany Theory Paper 1	2
			BO 352	Botany Theory Paper 2	2
			BO 353	Botany Theory Paper 3	2
			BO 354	Botany Theory Paper 4	2
			BO 355	Botany Theory Paper 5	2
			BO 356	Botany Theory Paper 6	2
			BO 357	Botany Practical Paper 1	2
			BO 358	Botany Practical Paper 2	2
			BO 359	Botany Practical Paper 3	2
	Skill Enhancement course	BO 3510	Botany Theory Paper 7	2	
		BO 3511	Botany Theory Paper 8	2	
3	6	Discipline Specific Elective Course	BO 361	Botany Theory Paper 1	2
			BO 361	Botany Theory Paper 2	2
			BO 362	Botany Theory Paper 3	2
			BO 363	Botany Theory Paper 4	2
			BO 364	Botany Theory Paper 5	2
			BO 365	Botany Theory Paper 6	2
			BO 366	Botany Practical Paper 1	2
			BO 367	Botany Practical Paper 2	2
	BO 368	Botany Practical Paper 3	2		
	Skill Enhancement course	BO 3610	Botany Theory Paper 7	2	
BO 3611		Botany Theory Paper 8	2		

**2. Equivalence of Previous Syllabus:**

<b>Old Course (2013 Pattern)</b>	<b>New Course (2019 CBCS Pattern)</b>
Fundamentals of Botany: PAPER – I Term- I: Plant Diversity	BO 111 Plant life and utilization I
Botany Theory Paper II Term I – Industrial Botany	BO 112 Plant morphology and Anatomy
Fundamentals of Botany: PAPER - I Term- II: Morphology and Anatomy	BO 121 Plant life and utilization II
Botany Theory Paper II Term- II – Industrial Botany	BO 122 Principles of plant science
F. Y. B. Sc. Botany Practical Paper - III based on Theory Paper I and Paper II	BO 113 Practical based on BO 111 & BO 112 and BO 123 Practical based on BO 121 & BO 122

**SEMESTER-I: PAPER-I****BO-111: PLANT LIFE AND UTILIZATION I (30 Lectures)****CREDIT-I****15 Lectures (15 Hours)****1. INTRODUCTION****3 L**

General outline of plant kingdom (**Lower Cryptogams:** Thallophytes- Algae, Fungi & Lichens; **Higher Cryptogams:** Bryophytes and Pteridophytes; **Phanerogams:** Gymnosperms and Angiosperms- Dicotyledons and Monocotyledons). Distinguishing characters of these groups and mention few common examples from each.

**2. ALGAE****9 L**

- 2.1: Introduction
- 2.2: General Characters
- 2.3: Classification (Bold and Wynne 1978) up to classes with reasons
- 2.4: Life Cycle of *Spirogyra* w.r.t. Habit, Habitat, Structure of thallus, structure of typical cell, Reproduction- Vegetative, Asexual and Sexual, systematic position with reasons
- 2.5: Utilization of Algae in Biofuel Industry, Agriculture, Pharmaceuticals, Food and Fodder

**3. LICHENS****3 L**

- 3.1: Introduction
- 3.2: General Characters
- 3.3: Nature of Association, forms- Crustose, Foliose and Fruticose.
- 3.4: Utilization of lichens.

**CREDIT-II****15 Lectures (15 Hours)****4. FUNGI****9 L**

- 4.1: Introduction
- 4.2: General Characters
- 4.3: Classification (Ainsworth, 1973)
- 4.4: Life Cycle of Mushroom- *Agaricus bisporus* w.r.t. Habit, Habitat, Structure of thallus, Structure of Sporocarp, Structure of Gill, Reproduction- Asexual and sexual, Systematic position.
- 4.5: Utilization of Fungi in Industry, Agriculture, Food and Pharmaceuticals.

**5. BRYOPHYTES****6 L**

- 5.1: Introduction
- 5.2: General Characters
- 5.3: Classification (G.M. Smith 1955)
- 5.4: Life Cycle of *Riccia* w.r.t. Habit, habitat, external and internal structure of thallus, Reproduction- vegetative, asexual and sexual- Structure of sex organs, fertilization, structure of mature sporophyte, structure of spore, systematic position with reasons.
- 5.5: Utilization: Bryophytes as ecological indicators, agriculture, fuel, industry and medicine.

(Development of sex organs not expected for all the above mentioned life cycles).

**REFERENCES:**

1. Ainsworth, Sussman and Sparrow (1973). The Fungi. Vol. IV-A and IV-B. Academic Press.
2. Bilgrami, K.S. and Saha, L.C. (1992) A Textbook of Algae. CBS Publishers and Distributors, Delhi.
3. Gangulee, Das and Dutta (2002). College Botany. Vol. I, New Central Book Agency (P) Ltd.
4. Dube, H.C. (1990). An Introduction to Fungi. Vikas Publishing House Pvt. Ltd., Delhi.
5. Krishnamurty, V. (2000). Algae of India and neighboring countries, Chlorophyta, Oxford and IBH, New Delhi.
6. Parihar, N.S. (1980). Bryophyta, An Introduction of Embryophyta. Vol. I. Central Book Distributors, Allahabad.
7. Puri, P. (1980). Bryophyta: Broad prospective. Atma Ram & Sons, Delhi.
8. Smith, G.M. (1971). Cryptogamic Botany. Vol. I: Algae & Fungi. Tata McGraw Hill Publishing Co., New Delhi.
9. Smith, G.M. (1971). Cryptogamic Botany. Vol. II: Bryophytes & Pteridophytes. Tata McGraw Hill Publishing Co., New Delhi.
10. Vashista, B.R., Sinha, A.K. and Singh, V.B. (2005). Botany for degree students- Algae, S. Chand Publication.
11. Vashista, B.R., Sinha, A.K. and Singh, V.B. (2005). Botany for degree students- Fungi, S. Chand Publication.
12. Vashista, B.R., Sinha, A.K. and Singh, V.B. (2005). Botany for degree students- Bryophytes, S. Chand Publication.

**SEMESTER-I: PAPER-II****BO-112: PLANT MORPHOLOGY AND ANATOMY (30 Lectures)****CREDIT-I****15 Lectures (15 hours)****1. MORPHOLOGY:****2 L**

1.1: Introduction, definition, descriptive and interpretative morphology.

1.2: Importance in identification, nomenclature, classification, phylogeny and Plant breeding.

**2. MORPHOLOGY OF REPRODUCTIVE PARTS:****2.1: INFLORESCENCE:****3 L**

2.1.1 Introduction and definition

2.1.2 Types:

a) Racemose -Raceme, Spike, Spadix, Corymb, Umbel, Catkin and Capitulum.

b) Cymose -Solitary, Monochasial- Helicoid and scorpioid; Dichasial and Polychasial.

c) Special types -Verticillaster, Cyathium and Hypanthodium.

2.1.3 Significance

**2.2: FLOWER:****7 L**

2.2.1 Introduction and definition

2.2.2 Parts of a typical flower: Bract, Pedicel, Thalamus- forms, Perianth- Calyx and Corolla, Androecium and Gynoecium.

2.2.3 Symmetry: Actinomorphic and zygomorphic, Sexuality- Unisexual and bisexual, Insertion of floral whorls on thalamus- Hypogyny, Epigyny and perigyny, Merous condition-Trimerous, tetramerous and pentamerous.

2.2.4 Floral whorls:

a) **Calyx:** Nature- Polysepalous, Gamosepalous; Aestivation- types, Modifications of Calyx- Pappus, Petaloid and Spurred.b) **Corolla:** Forms of Corolla-

i) Polypetalous- Cruciform and Papilionaceous.

ii) Gamopetalous- Infundibuliform, Bilabiate, Tubular and Campanulate.

iii) Aestivation- types and significance.

c) **Perianth:** Nature- Polytepalous, Gamotepalous.d) **Androecium:** Structure of typical stamen, Variations- cohesion and adhesion.e) **Gynoecium:** Structure of typical carpel, number, position, cohesion and adhesion; placentation- types and significance.**2.3: FRUITS:****3 L**

2.3.1 Introduction and definition

2.3.2 Types of fruits:

a) **Simple:** Indehiscent - Achene, Cypsela, Nut and Caryopsis.

Dehiscent - Legume, Follicle and Capsule,

b) **Fleshy:** Drupe, Berry, Hesperidium and Pepo.c) **Aggregate:** Etaerio of Berries and Etaerio of Follicles.d) **Multiple fruits:** Syconus and Sorosis.

**CREDIT- II****15 Lectures (15 Hours)****3. ANATOMY:****2 L**

3.1 Introduction and definition

3.2 Importance in Taxonomy, Physiology, Ecological interpretations, Pharmacognosy and Wood identification.

**4. TYPES OF TISSUES:****8 L**

Outline with brief description, simple and complex tissues.

4.1: **Meristmatic tissues:** Meristem, characters and types based on origin, position and plane of division, functions.4.2: **Permanent tissues:** Simple tissues - parenchyma, collenchymas, chlorenchyma and sclerenchyma.4.3: **Complex/Vascular tissues:** Components of xylem and phloem, types of vascular bundles and functions.4.4: **Epidermal tissues:** Epidermis, structure of typical stomata, trichomes, motor cells; functions.**5. INTERNAL ORGANIZATION OF PRIMARY PLANT BODY:****5 L**

5.1: Internal structure of dicotyledon and monocotyledon root.

5.2: Internal structure of dicotyledon and monocotyledon stem.

5.3: Internal structure of dicotyledon and monocotyledon leaf.

**REFERENCES:**

1. Chandurkar, P.J. (1989). Plant Anatomy. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Dutta, A.C. (2003). Botany for Degree students. Oxford University Press, New Delhi.
3. Eames, J. and Mc. Daniels (1994). An Introduction to Plant Anatomy. Tata McGraw Hill Publishing Comp., New Delhi.
4. Esau, K. (1993). Plant Anatomy. Wiley Eastern Ltd. New Delhi.
5. Esau, K. (2006). Anatomy of seed plants. John Wiley and Sons, New York.
6. Fahn, A. (1974). Plant Anatomy. Pergamum Press Oxford.
7. Gangulee, Das and Dutta (2002). College Botany. Vol. I. New Central Book Agency, Kolkata.
8. Lawrence, G.H.M. (2012). Taxonomy of vascular Plants. Scientific Publishers (India) Jodhpur.
9. Naik, V.N. (1994). Taxonomy of Angiosperms. Tata McGraw Hill Publishing Comp., New Delhi.
10. Pandey, B.P. (2007). Plant Anatomy. S. Chand and Co. Ltd. New Delhi.
11. Pandey, B.P. (2009). A Text Book of Botany- Angiosperms. S. Chand and Co. Ltd. New Delhi.
12. Radford, Albert E. (1986). Fundamentals of Plant Systematics. Publ. Harper and Row, New York.
13. Saxena, A.K. and Sarabhai, R.P. (1968). A Text Book of Botany. Vol. III. Ratan Prakashan mandir, Agra.
14. Sharma, O.P. (1993). Plant Taxonomy. 2<sup>nd</sup> Edition, McGraw Hill Education, New Delhi.
15. Singh, Gurucharan (2005). Systematics- Theory and Practice. Oxford IBH.
16. Sutaria, R.N.A. Text Book of Systematic Botany.
17. Tayal, M.S. (2012). Plant Anatomy. Rastogi Publications.



**BO 113: PRACTICALS BASED ON BO 111 & BO 112 (1.5 CREDITS)**

1. Study of Life Cycle of *Spirogyra*. 1 P
2. Study of Life Cycle of *Agaricus*. 1 P
3. Study of Life Cycle of *Riccia* 1 P.
4. Study of forms of Lichens- Crustose, Foliose and fruticose. 1 P
5. Study of Mushroom Cultivation. 1 P
6. One day visit to study Algae, Fungi, Bryophytes and Lichens. 1 P
7. Study of Inflorescence. 2 P
  - a. Racemose: Raceme, Spike, Spadix, Catkin, Corymb, Umbel and Capitulum
  - b. Cymose: Solitary cyme, Uniparous cyme: helicoid and scorpiod, Biparous cyme and Multiparous cyme.
  - c. Special type: Verticillaster, Hypanthodium and Cyathium.
8. Study of flower with respect to Calyx, Corolla and Perianth, Androecium and Gynoecium. 2 P
9. Study of fruits with suitable examples. 2 P
  - a) Simple fruit: Dry: Achene, Cypsella and Legume; Fleshy: Berry and Drupe.
  - b) Aggregate fruit: Etaerio of follicles and Etaerio of Berries.
  - c) Multiple fruit: Syconus and Sorosis.
10. Study of internal primary structure of dicotyledonous root and stem e.g. Sunflower. 1 P
11. Study of internal primary structure of monocotyledonous root and stem e.g. Maize. 1 P
12. Study of internal primary structure of dicotyledonous and monocotyledonous leaf e.g. Sunflower and Maize. 1 P

**SEMESTER-II: PAPER-I****BO-121: PLANT LIFE AND UTILIZATION-II (30 Lectures)****CREDIT-I****15 Lectures (15 hours)**

1. **INTRODUCTION:** Introduction to plant diversity- Pteridophytes, Gymnosperms and Angiosperms with reference to vascular plants. 3 L
2. **PTERIDOPHYTES:** General characters, Outline classification according to Sporne (1976) up to classes with reasons. Life cycle of *Nephrolepis* w.r.t. Habit, habitat, distribution, morphology, anatomy of stem and leaf, Reproduction – vegetative and sexual. 10 L
3. Utilization and economic importance of Pteridophytes. 2 L

**CREDIT-II****15 Lectures (15 hours)**

1. **GYMNOSPERMS:** General characters, Outline classification according to Sporne (1977) up to classes with reasons. Life cycle of *Cycas* w.r.t. Habit, Habitat, Distribution, Morphology and Anatomy of Stem, leaf and reproductive organs- Male cone, Microsporophyll, microspores and megasporophyll, megaspore; structure of seed; Utilization and economic importance of gymnosperms. 8 L
2. **ANGIOSPERMS:** General characters, Outline of classification of Bentham and Hooker's system up to series, comparative account of monocotyledons and dicotyledons. 4L
3. Utilization and economic importance of Angiosperms: In food, fodder, fibers, horticulture and medicines. 3L

**REFERENCES:**

1. Bendre, Ashok and Kumar, Ashok (1993). A Text Book of Practical Botany, Rastogy Publications, Meerut.
2. Chamberlain, C.J. (1934). Gymnosperms- Structure and Evolution. Chicago.
3. Coulter, J.M. and Chamberlain, C.J. (1917). Morphology of Gymnosperms. Chicago.
4. Davis, P.H. and Heywood, V.H. (1963). Principles of Angiosperms taxonomy. Oliver and Boyd Publ. London.
5. Dutta, S.C. (1988). Systematic Botany. Wiley Eastern Ltd., New Delhi.
6. Eames, E.J. (1983). Morphology of Vascular Plants. Standard University Press.
7. Gangulee and Kar (2006). College Botany. New Central Book Agency (P.) Ltd. Kolkata.
8. Naik, V.N. (1994). Taxonomy of Angiosperms. Tata McGraw Hill Publishing Comp., New Delhi.
9. Parihar, N.S. (1976). Biology and Morphology of Pteridophytes. Central Book Depot.
10. Rashid, A. (1999). An Introduction to Pteridophyta. Vikas Publishing House Pvt. Ltd. New Delhi.
11. Sharma, O.P. (1990). Text Book of Pteridophyta. McMillan India Ltd. Delhi.
12. Singh, V. and Jain, D.K. (2010). Taxonomy of Angiosperms. Rastogy Publications, Meerut.

13. Singh, V., Pande, P.C., and Jain, D.K. (2011). A Text Book of Botany: Angiosperms. Rastogy Publications, Meerut.
14. Smith, G.M. (1955). Cryptogamic Botany Vol. II. McGraw Hill.
15. Sporne, K.R. (1986). The Morphology of Pteridophytes. Hutchinson University Library, London.
16. Sundar Rajan, S. (1999). Introduction to Pteridophyta. New Age International Publishers, New Delhi.
17. Vashishta, P.C., Sinha, A.R. and Kumar, Anil (2006). Gymnosperms. S. Chand and Comp. Ltd. New Delhi.
18. Vashista, B.R., Sinha A.K. and Kumar, A. (2008). Botany for degree students- Pteridophyta, S. Chand and Comp. Ltd. New Delhi.

**SEMESTER-II: PAPER-II****BO-122: PRINCIPLES OF PLANT SCIENCE (30 Lectures)****CREDIT-1: PLANT PHYSIOLOGY AND CELL BIOLOGY****15 Lectures (15 Hours)**

1. Introduction, definition and scope of plant physiology. 1 L
2. Diffusion – definition, importance of diffusion in plants, imbibition as a special type of diffusion. 1 L
3. Osmosis – definition, types of solutions (hypotonic, isotonic, hypertonic), endosmosis, exo-osmosis, osmotic pressure, turgor pressure, wall pressure, importance of osmosis in plants. 2 L
4. Plasmolysis – definition, mechanism and significance. 1 L
5. Plant growth - introduction, phases of growth, factors affecting growth, 2 L
6. Structure of plant cell, differences between prokaryotic and eukaryotic cell. 2 L
7. Plant cell wall – components of primary cell wall, structure and functions. 1 L
8. Ultrastructure and functions of chloroplast 2 L
9. Cell cycle in plants- importance of cell cycle in plants, divisional stages of mitosis and meiosis. 3 L

**CREDIT-II: MOLECULAR BIOLOGY****(15 Lectures) 15 Hours**

1. Introduction and scope of molecular biology, central dogma of molecular biology. 2 L
2. Structure of DNA, nucleoside and nucleotide 2 L
3. Watson Crick model of DNA and its characteristic features, types of DNA (A, B and Z DNA). 3 L
4. Types of chromosomes. 2 L
5. Structure and types of RNA. 3 L
6. DNA replication- Types of replication (conservative, semi-conservative and dispersive), enzymes involved, leading and lagging strands, Okazaki fragments. 3 L

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1. Buchanan, B.B, Gruissem, W. and Jones, R.L (2000). Biochemistry and Molecular Biology of Plants. American Society of Plant Physiologists Maryland, USA.
2. Cooper, G.M. and Hausman, R.E. (2007). The Cell: Molecular Approach 4<sup>th</sup> Edition, Sinauer Associates, USA.
3. David, Nelson and Cox, Michael (2007). Lehninger Principles of Biochemistry. W.H. Freeman and Company. New York.
4. Devlin, R.M. (1983). Fundamentals of Plant Physiology. Mc. Millan, New York.
5. Dutta, A.C. (2000). A Class Book of Botany. Oxford University Press, UK.
6. Hopkins, William G. (1995). Introduction to Plant Physiology. Publ. John Wiley and Sons, Inc.

7. Lewin, Benjamin (2011). Genes. X Jones and Bartlett.
8. Lincoln, Taiz and Eduardo, Zeiger (2010). Plant Physiology. 5<sup>th</sup> Edition. Sinauer Associates, Inc. Publishers. Sunderland, USA.
9. Opik, Helgi, Rolfe, Stephen A. and Willis, Arthur J. (2005). The Physiology of Flowering Plants. Cambridge University Press, UK.
10. Pal, J.K. and Ghaskadbi, Saroj (2009). Fundamentals of Molecular Biology. Oxford University Press. India.
11. Pandey, S.N. and Sinha, B.K. (2014). Plant Physiology. Vikas Publishing House Pvt. Ltd., India.
12. Salisbury, F.B. and Ross, C.B. (2005). Plant Physiology. 5<sup>th</sup> Edition. Wadsworth Publishing Co. Belmont California, USA.
13. Watson, James D., Baker, Tania; Bell, Stephen P.; Alexander Gann; Levine, Michael and Lodwick, Richard (2008). Molecular Biology of the Gene. 6<sup>th</sup> Edition, Pearson Education, Inc. and Dorling Kindersley Publishing, Inc. USA.
14. Weaver, R. (2011). Molecular Biology. 5<sup>th</sup> Edition, Publisher- McGraw Hill Science. USA.

### **BO 123: PRACTICALS BASED ON BO 121 & BO 122 (1.5 CREDITS)**

- |   |     |
|---|-----|
| 1. Study of life cycle of <i>Nephrolepis</i> .  | 1 P |
| 2. Study of life cycle of <i>Cycas</i> .  | 1 P |
| 3. Study of Bentham and Hooker's system of classification outline up to series with example   | 1 P |
| 4. Study of comparative account of Dicotyledonous and Monocotyledonous plants w.r.t to external morphological characters.                       | 1 P |
| 5. Study of utilization and economic importance of Angiosperms- food, fodder, fibers, horticulture and medicines.                               | 1 P |
| 6. One day visit to study diversity of vegetation.  | 2 P |
| 7. To observe characteristic features of prokaryotic and eukaryotic plant cell.   | 1 P |
| 8. Staining of suitable nuclear material by Basic Fuchsin   | 1 P |
| 9. Study of mitosis- preparation of slides using onion root tips to observe divisional stages.  | 1 P |
| 10. Study of meiosis- preparation of slides using <i>Tradescantia/ Rhoec/ Maize /</i> Onion flower buds to observe divisional stages.           | 2 P |
| 11. Estimation of chlorophyll-a and chlorophyll-b by using suitable plant material.   | 1 P |
| 12. Plasmolysis- endosmosis, exosmosis, incipient plasmolysis using <i>Rhoec</i> leaf peeling and Demonstration of Osmosis- curling experiment. | 1 P |
| 13. Study of DPD by using suitable plant sample   | 1 P |

Savitribai Phule Pune University [SPPU]

**B.Sc. (Chemistry)**

(Three Years Integrated Degree Program)

**Choice Based Credit System [CBCS]**

**From Academic Year**

**2019-2020**

**First Year (F.Y. B. Sc.)**

**Board of Studies (Chemistry)**

Savitribai Phule Pune University [SPPU]

Pune-41107

**Structure of F. Y. B. Sc. Chemistry**

Semester	Course	Discipline Specific Core Course (DSCC)*
I	Theory	CH-101 : Physical Chemistry ( 2 credit , 36 L)
	Theory	CH-102 : Organic Chemistry (2 credit, 36 L)
	Practical	CH-103 : Chemistry Practical –I (1.5 Credit, 46.8 L)
II	Theory	CH-201 :Inorganic Chemistry ( 2 credit , 36 L)
	Theory	CH-202 : Analytical Chemistry (2 credit, 36 L)
	Practical	CH-203 : Chemistry Practical –II (1.5 Credit, 46.8 L)

**\*N.B.:**

- i. Each lecture (L) will be of 50 minutes.**
- ii. Each practical of 3h 15 min and 12 practicals per semester**
- iii. 12 weeks for teaching 03 weeks for Contentious assessments**
- iv. For details refer UG rules and regulations (CBCS for Science program under science & Technology) given in Appendix**

# Savitribai Phule Pune University, Pune

## F.Y.B.Sc. Chemistry Syllabus

(CBCS Semester Pattern)

From Academic Year 2019-2020

### Equivalence with Previous Syllabus

<b>New Course (2019 Semester Pattern) ( 50 min /L)</b>	<b>Old Course (2013 Annual Pattern) ( 48 min /L)</b>
CH-101 : Physical Chemistry ( 2 credit , 36 L) 50 Marks	Paper I : Physical and Inorganic Chemistry ( 72 L) 100 Marks
CH-201 :Inorganic Chemistry ( 2 credit , 36 L) 50 Mark	
CH-102 : Organic Chemistry (2 credit, 36 L) 50 Marks	Paper II : Organic and Inorganic Chemistry ( 72 L) 100 Marks
CH-202 : Analytical Chemistry (2 credit, 36 L) 50 Marks	
CH-103 : Chemistry Practical-I (1.5 Credit, 46.8 L) 50 Marks	Paper III : Chemistry Practical 100 Marks
CH-203 : Chemistry Practical-II (1.5 Credit, 46.8L) 50 Marks	



**Preamble:**

The syllabus of Chemistry for First year has been redesigned for Choice based Credit System (CBCS) to be implemented from 2019-2020.

In CBCS pattern semester system has been adopted for FY, SY and TY which includes Discipline Specific Core Course (DSCC) at F Y level, Ability Enhancement Compulsory Course (AECC), Discipline Specific Elective Course (DSEC) and Skill Enhancement Course (SEC). DSCC courses has been introduced at FY level and AECC courses at SY level along with DSEC. At TY level DSEC and SEC courses has been introduced.

Syllabus for Specific Core Courses of Chemistry (2 Theory and 1 Practical) subject for F. Y. B. Sc. is to be implemented from the year 2019-20. Syllabus for S. Y. and T. Y. B. Sc. will be implemented from the year 2020-21 and 2021-22 respectively as per structure approved.

**Learning Objectives:**

1. To understand basic concept of physical, organic and Inorganic chemistry.
2. To impart practical skills and learn basics behind experiments.
3. To prepare background for advanced and applied studies in chemistry.

# SEMESTER-I

## CH- 101: Physical Chemistry (2 Credits, 36 Lectures of 50 min.)

### 1. Chemical Energetics

Review of thermodynamics and the Laws of Thermodynamics. Important principles and definitions of thermochemistry. Concept of standard state and standard enthalpies of formations, integral and differential enthalpies of solution and dilution. Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variation of enthalpy of a reaction with temperature – Kirchoff's equation. Statement of Third Law of thermodynamics and calculation of absolute entropies of substances, problems [11]

### 2. Chemical Equilibrium:

Introduction: Free Energy and equilibrium - Concept, Definition and significance  
The reaction Gibbs Energy, Exergonic and endergonic reaction. The perfect gas equilibrium, the general case of equilibrium, the relation between equilibrium constants, Molecular interpretation of equilibrium constant. The response of equilibria to conditions- response to pressure, response to temperature, Van't Haff equation, Value of K at different temperature, Problems [11]

### 3. Ionic Equilibria

Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, ionization constant and ionic product of water. Ionization of weak acids and bases, pH scale, common ion effect. Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions. Solubility and solubility product of sparingly soluble salts– applications of solubility product principle. [14]

## Learning Outcome

### 1. Chemical Energetics

1. Students will be able to apply thermodynamic principles to physical and chemical process
2. Calculations of enthalpy, Bond energy, Bond dissociation energy, resonance energy
3. Variation of enthalpy with temperature –Kirchoff's equation
4. Third law of thermodynamic and its applications

### 2. Chemical Equilibrium

Knowledge of Chemical equilibrium will make students to understand

1. Relation between Free energy and equilibrium and factors affecting on equilibrium constant.
2. Exergonic and endergonic reaction
3. Gas equilibrium, equilibrium constant and molecular interpretation of equilibrium constant
4. Van't Haff equation and its application

### 3. Ionic equilibria

Ionic equilibria chapter will lead students to understand

1. Concept to ionization process occurred in acids, bases and pH scale
2. Related concepts such as Common ion effect hydrolysis constant, ionic product, solubility product
3. Degree of hydrolysis and pH for different salts, buffer solutions

## CH- 102: Organic Chemistry (2 Credits, 36 Lectures of 50 min.)

### Fundamentals of Organic Chemistry

Physical Effects, Electronic Displacements: Inductive Effect, Electromeric Effect, Resonance and Hyperconjugation. Cleavage of Bonds: Homolysis and Heterolysis. Structure, shape and reactivity of organic molecules: Nucleophiles and electrophiles. Reactive Intermediates: Carbocations, Carbanions and free radicals. Strength of organic acids and bases: Comparative study with emphasis on factors affecting pK values. Aromaticity: Benzenoids and Hückel's rule. [09]

### Stereochemistry

Introduction, classification, Interconversion of Wedge Formula, Newmann, Sawhorse and Fischer representations. Conformations with respect to ethane, butane and cyclohexane. Configuration: Geometrical - *cis* – *trans*, and E / Z Nomenclature (for upto two C=C systems). Optical isomerism Enantiomerism, Diastereomerism and Meso compounds). Concept of chirality (upto two carbon atoms). Threo and erythro; D and L; nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) [14]

### Aliphatic Hydrocarbons

Functional group approach for the following reactions (preparations & reactions) to be studied in context to their structure.

**Alkanes:** (Up to 5 Carbons) *Preparation:* Catalytic hydrogenation, Wurtz reaction, Kolbe's synthesis, from Grignard reagent. *Reactions:* Free radical Substitution: Halogenation.

**Alkenes:** (Up to 5 Carbons) *Preparation:* Elimination reactions: Dehydration of alkenes and dehydrohalogenation of alkyl halides (Saytzeff's rule); *cis* alkenes (Partial catalytic hydrogenation) and *trans* alkenes (Birch reduction). *Reactions:* *cis*-addition (alk.  $\text{KMnO}_4$ ) and *trans*-addition (bromine), Addition of HX (Markownikoff's and anti-Markownikoff's addition), Hydration, Ozonolysis, oxymercuration-demercuration, Hydroboration-oxidation.

**Alkynes:** (Up to 5 Carbons) *Preparation:* Acetylene from  $\text{CaC}_2$  and conversion into higher alkynes; by dehalogenation of tetra halides and dehydrohalogenation of vicinal-dihalide *Reactions:* formation of metal acetylides, addition of bromine and alkaline  $\text{KMnO}_4$ , ozonolysis and oxidation with hot alk.  $\text{KMnO}_4$ . [13]

## Learning Outcome

1. The students are expected to understand the fundamentals, principles, and recent developments in the subject area.
2. It is expected to inspire and boost interest of the students towards chemistry as the main subject.
3. To familiarize with current and recent developments in Chemistry.
4. To create foundation for research and development in Chemistry.

## Reference Books

1. Graham Solomon, T.W., Fryhle, C.B. & Snyder, S.A. *Organic Chemistry*, John Wiley & Sons (2014).
  2. McMurry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.
  3. Sykes, P. *A Guidebook to Mechanism in Organic Chemistry*, Orient Longman, New Delhi (1988).
  4. Eliel, E.L. *Stereochemistry of Carbon Compounds*, Tata McGraw Hill education, 2000.
  5. Finar, I.L. *Organic Chemistry* (Vol. I & II), E.L.B.S.
  6. Morrison, R.T. & Boyd, R.N. *Organic Chemistry*, Pearson, 2010.
  7. Bahl, A. & Bahl, B.S. *Advanced Organic Chemistry*, S. Chand, 2010.
  8. Samuel Glasstone, *Thermodynamics for Chemists*, Affiliated East West Private Limited.
  9. B S Bahl, G D Tuli, Arun Bahl, *Essentials of Physical Chemistry*
  10. Peter Atkins and Julio de Paula, *Elements of Physical Chemistry*, Sixth edition ( 2013), Oxford press
  11. Ball D. W., *Physical Chemistry*, Thomson Press , India (2007)
  12. Castellan, G.W. *Physical Chemistry* 4th Ed. Narosa (2004).
  13. Atkins' *Physical Chemistry –Thermodynamics and Kinetics*, 11<sup>th</sup> Edition, Oxford Press
  14. Thomas Engel, Philip Reid; *Physical Chemistry*, Pearson Education (2006)
  15. J. N. Gurtu, A. Gurtu; *Advanced Physical Chemistry*, Pragati Edition
  16. Mortimer R. G., *Physical Chemistry*, 3rd Edition, Elsevier, Noida (UP)
  17. Samuel H. Maron and Carl F. Prutton, *Principals of physical Chemistry*, 4<sup>th</sup> Edition, Collier Macmillan Ltd.
-

## CH- 103: Chemistry Practical Course I

(1.5 Credits, 46.8 Lectures of 50 min.)

### Section A: Chemical and Lab Safety (Compulsory)

1. Toxicity of the compounds used in chemistry laboratory.
2. Safety symbol on labels of pack of chemicals and its meaning
3. What is MSDS sheets? Find out MSDS sheets of at least hazardous chemicals ( $K_2Cr_2O_7$ , Benzene, cadmium nitrate, sodium metal, etc.)
4. Precautions in handling of hazardous substances like Conc. acids, ammonia, organic solvents, etc.

### Section B: Physical Chemistry

#### a. Thermochemistry (Any three)

1. Determination of heat capacity of calorimeter for different volumes.
2. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.
3. Determination of enthalpy of ionization of acetic acid.
4. Determination of integral enthalpy of solution of salts ( $KNO_3$ ,  $NH_4Cl$ ).
5. Determination of enthalpy of hydration of copper sulphate.
6. Study of the solubility of benzoic acid in water and determination of  $\Delta H$ .

#### b. Ionic equilibria (Two experiments)

1. Measurement of pH of different solutions like aerated drinks, fruit juices, shampoos and soaps (use dilute solutions of soaps and shampoos to prevent damage to the glass electrode) using pH-meter.

OR

1. Measurement of the pH of buffer solutions and comparison of the values with theoretical values.
2. Preparation of buffer solutions (Any One)
  - (i) Sodium acetate-acetic acid and determine its buffer capacity
  - (ii) Ammonium chloride-ammonium hydroxide and determine its buffer capacity

### Section C: Organic Chemistry (Five experiments)

1. To determine type and detection of extra elements (N, S, Cl, Br, I) in organic compounds (containing up to two extra elements) (Three)
2. Separation of constituents of mixtures by Chromatography: Measure the  $R_f$  value in each case (Two)
  - (a) Identify and separate the components of a given mixture of 2 amino acids (glycine, aspartic acid, glutamic acid, tyrosine or any other amino acids) / pigments from plant extract/ 2 organic compounds by paper chromatography
  - (b) Identify and separate the sugars present in the given mixture by paper chromatography.

**Note: Combination of two compounds/plant extract to be given**

**Reference Books:**

1. Svehla, G. *Vogel's Qualitative Inorganic Analysis*, Pearson Education, 2012.
2. Mendham, J. *Vogel's Quantitative Chemical Analysis*, Pearson, 2009.
3. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., *Text book of Practical Organic Chemistry*, Prentice-Hall, 5th edition, 1996.
4. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry* Orient-Longman, 1960.
5. Khosla, B. D.; Garg, V. C. & Gulati, A. *Senior Practical Physical Chemistry*, R.Chand & Co.: New Delhi (2011).
6. Prof. Robert H. Hill Jr., David C. Finster *Laboratory Safety for Chemistry Students*, 2nd Edition Wiley ISBN: 978-1-119-02766-9 May 2016
7. *Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards*, Updated Version, ISBN 978-0-309-13864-2 | DOI 10.17226/12654, THE NATIONAL ACADEMIES PRESS Washington, D.C.

**Learning Outcome**

1. Importance of chemical safety and Lab safety while performing experiments in laboratory
  2. Determination of thermochemical parameters and related concepts
  3. Techniques of pH measurements
  4. Preparation of buffer solutions
  5. Elemental analysis of organic compounds (non instrumental)
  6. Chromatographic Techniques for separation of constituents of mixtures
-

## SEMESTER-II

### CH-201: Inorganic Chemistry (2 Credits, 36 Lectures of 50 min.)

#### 1. Atomic Structure

**Origin of Quantum Mechanics:** Why study quantum mechanics? Quantum mechanics arose out of interplay of experiments and Theory Energy quantization- i) Black body radiation ii) The photoelectric effect iii) Wave particle duality-a) The particle character of electromagnetic radiation b) the wave character of particle, iv) diffraction by double slit v) atomic spectra, Review of-Bohr's theory and its limitations, Heisenberg Uncertainty principle.

**Quantum mechanics:** Time independent Schrodinger equation and meaning of various terms in it, Significance of  $\psi$  and  $\psi^2$ , Schrödinger equation for hydrogen atom. Radial and angular parts of the hydrogenic wavefunctions (atomic orbitals) and their variations for  $1s$ ,  $2s$ ,  $2p$ ,  $3s$ ,  $3p$  and  $3d$  orbitals (Only graphical representation). Radial and angular nodes and their significance. Radial distribution functions and the concept of the most probable distance with special reference to  $1s$  and  $2s$  atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers  $ml$  and  $ms$ . Shapes of  $s$ ,  $p$  and  $d$  atomic orbitals, nodal planes. Discovery of spin, spin quantum number ( $s$ ) and magnetic spin quantum number ( $ms$ ). [14]

#### 2. Periodic table and Periodicity of Elements

**Periodic table:** periodic table after 150 years, review on the eve of international year of periodic table[IYPT].

**Periodicity of elements:** Rules for filling electrons in various orbitals, Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals, concept of exchange energy. Relative energies of atomic orbitals, Anomalous electronic configurations

Long form of periodic table-s, p, d and f block elements,

Detailed discussion of following properties of elements with reference to s and p block

- Effective nuclear charge, shielding or screening effect
- Atomic and ionic radii
- Crystal radii
- Covalent radii
- Ionization energies
- Electronegativity, Pauling's / electronegativity scale
- Oxidation states of elements

[10]

#### 3. Chemical Bonding

Attainment of stable electronic configurations, Types of Chemical bonds: Ionic, covalent, coordinate and metallic bonds

**Ionic Bond:** General characteristics of ionic bonding, Types of ions, Energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds. Statement of Born-Landé equation for calculation of lattice energy,

Born-Haber cycle and its applications, polarizing power and polarizability. Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.

**Covalent bond:** Valence Bond Approach, Hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements. VSEPR theory, Assumptions, need of theory, application of theory to explain geometries of molecules such as i)  $\text{ClF}_3$  ii)  $\text{Cl}_2\text{O}$  iii)  $\text{BrF}_5$  iv)  $\text{XeO}_3$  v)  $\text{XeOF}_4$  [12]

## Learning Outcome

### 1. Atomic Structure

1. Various theories and principles applied to reveal atomic structure
2. Origin of quantum mechanics and its need to understand structure of hydrogen atom
3. Schrodinger equation for hydrogen atom
4. Radial and angular part of hydrogenic wave functions
5. Significance of quantum numbers
6. Shapes of orbitals

### 2. Periodicity of Elements

1. Explain rules for filling electrons in various orbitals- Aufbau's principle, Pauli exclusion principle, Hund's rule of maximum multiplicity
2. Discuss electronic configuration of an atom and anomalous electronic configurations.
3. Describe stability of half-filled and completely filled orbitals.
4. Discuss concept of exchange energy and relative energies of atomic orbitals
5. Design Skeleton of long form of periodic table.
6. Describe Block, group, modern periodic law and periodicity.
7. Classification of elements as main group, transition and inner transition elements
8. Write name, symbol, electronic configuration, trends and properties.
9. Explain periodicity in the following properties in details:
  - a. Effective nuclear charge, shielding or screening effect; some numerical problems.
  - b. Atomic and ionic size.
  - c. Crystal and covalent radii
  - d. Ionization energies
  - e. Electronegativity- definition, trend, Pauling electronegativity scale.
  - f. Oxidation state of elements

### 3. Chemical Bonding

1. Attainment of stable electronic configurations.
2. Define various types of chemical bonds- Ionic, covalent, coordinate and metallic bond
3. Explain characteristics of ionic bond, types of ions, energy consideration in ionic bonding, lattice and solvation energy and their importance in the context of stability and solubility of ionic compounds
4. Summarize Born-Landé equation and Born-Haber cycle,
5. Define Fajan's rule, bond moment, dipole moment and percent ionic character.



6. Describe VB approach, Hybridization with example of linear, trigonal, square planer, tetrahedral, TBP, and octahedral.
7. Discuss assumption and need of VSEPR theory.
8. Interpret concept of different types of valence shell electron pairs and their contribution in bonding.
9. Application of non-bonded lone pairs in shape of molecule
10. Basic understanding of geometry and effect of lone pairs with examples such as  $\text{ClF}_3$ ,  $\text{Cl}_2\text{O}$ ,  $\text{BrF}_5$ ,  $\text{XeO}_3$  and  $\text{XeOF}_4$ .

## CH- 202: Analytical Chemistry (2 Credits, 36 Lectures of 50 min.)

### 1. Introduction to Analytical Chemistry

What is analytical Chemistry, the analytical perspectives, Common analytical problems. [03]

### 2. Calculations used in Analytical Chemistry

**Some important units of measurements**-SI units, distinction between mass and weight, mole, millimole and Calculations, significant figures

**Solution and their concentrations**- Molar concentrations, Molar analytical Concentrations, Molar equilibrium concentration, percent Concentration, part per million, part per billion, part per thousand, Solution –dilutant volume ration, functions , density and specific gravity of solutions, problems

**Chemical Stoichiometry** – Empirical and Molecular Formulas, Stoichiometric Calculations, Problems. [10]

### 3. Qualitative Analysis of Organic Compounds

Types of organic compounds, characteristic tests and classifications, reactions of different functional groups, analysis of binary mixtures.

Analysis – Detection of nitrogen, sulfur, halogen and phosphorous by Lassaigne's test.

Purification of organic compounds- Introduction, recrystallization, distillation, sublimation [05]

### 4. Chromatographic Techniques –Paper and Thin Layer Chromatography

Introduction- Introduction to chromatography, IUPAC definition of chromatography.

History of Chromatography- paper chromatography, Thin Layer Chromatography, Ion exchange Chromatography, Gas permeation Chromatography, affinity chromatography, Gas chromatography, Supercritical fluid chromatography, High Performance Liquid Chromatography, Capillary electrophoresis, Classification of chromatographic methods – according to separation methods, according to development procedures.

**Thin Layer Chromatography:** Theory and principles, outline of the method, surface adsorption and spot shape, Comparison of TLC with other forms of chromatography, adsorbents, preparation of plates, application of samples, development.

**Paper Chromatography-** Origin, overview of technique, sample preparation, types of paper, solvents, equilibrium, development, sample application and detection, Identification, Quantitative methods, applications of paper chromatography [14]

**5. pH meter**

Introduction, pH meter, Glass pH electrode, combination of pH electrode-Complete Cell, Standard Buffer –reference for pH measurement, Accuracy of pH measurement, Using pH meter –How does it work? Applications of pH meter. [04]

**Learning Outcomes****1. Introduction to Analytical Chemistry**

- i. Analytical Chemistry –branch of chemistry
- ii. Perspectives of analytical Chemistry
- iii. analytical problems

**2. Calculations used in Analytical Chemistry**

- i. Calculations of mole, molar concentrations and various units of concentrations which will be helpful for preparation of solution
- ii. Relation between molecular formula and empirical formula
- iii. Stoichiometric calculation
- iv. Define term mole, millimole, molar concentration, molar equilibrium concentration and Percent Concentration.
- v. SI units, distinction between mass and weight
- vi. Units such as parts per million, parts per billion, parts per thousand, solution-dilutant volume ratio, function density and specific gravity of solutions.

**3 Qualitative Analysis of Organic Compounds**

Basics of type determination, characteristic tests and classifications, reactions of different functional groups.

- i. Separation of binary mixtures and analysis
- ii. Elemental analysis -Detection of nitrogen, sulfur, halogen and phosphorous by Lassaigne's test.
- iii. Purification techniques for organic compounds.

**4. Chromatographic Techniques – Paper and Thin layer Chromatography**

- i. Basics of chromatography and types of chromatography
- ii. Theoretical background for Paper and Thin Layer Chromatography

**5. pH metry**

- i. pH meter and electrodes for pH measurement
- ii. Measurement of pH
- iii. Working of pH meter
- iv. Applications of pH meter

**Reference Books:**

1. Lee, J.D. *Concise Inorganic Chemistry* ELBS, 1991.
2. Cotton, F.A., Wilkinson, G. & Gaus, P.L. *Basic Inorganic Chemistry*, 3rd ed., Wiley.
3. Douglas, B.E., McDaniel, D.H. & Alexander, J.J. *Concepts and Models in Inorganic Chemistry*, John Wiley & Sons.
4. Huheey, J.E., Keiter, E.A., Keiter, R.L. & Medhi, O.K. *Inorganic Chemistry: Principles of Structure and Reactivity*, Pearson Education India, 2006.

5. Graham Solomon, T.W., Fryhle, C.B. & Snyder, S.A. *Organic Chemistry*, John Wiley & Sons (2014).
  6. McMurry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.
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  9. Morrison, R.T. & Boyd, R.N. *Organic Chemistry*, Pearson, 2010.
  10. Bahl, A. & Bahl, B.S. *Advanced Organic Chemistry*, S. Chand, 2010.
  11. A Braithwait and F. J. Smith, *Chromatographic method*, 5<sup>th</sup> edition, Kluwer Academic publishers
  12. G D Christian -Analytical Chemistry
  13. Qualitative Organic Analysis 4<sup>th</sup> Edn by A I Vogel (ELBS)
  14. Vogel's Quantitative Analysis
  15. Douglas A Skoog, Donald M West, F James Holler ,Stainly R Crouch , *Fundamentals of Analytical Chemistry*, 9<sup>th</sup> edition
  16. David Harvey, *Modern Analytical Chemistry*, McGraw Hill Higher education
  17. Gurudeep R Chatwal, Sham K Anand, *Instrumental Methods of Chemical Analysis*, Himalaya Publishing House.
  18. Barrow, G.M. *Physical Chemistry* Tata McGraw-Hill (2007).
  19. Kotz, J.C., Treichel, P.M. & Townsend, J.R. *General Chemistry* Cengage Learning India Pvt. Ltd., New Delhi (2009).
  20. Mahan, B.H. *University Chemistry* 3rd Ed. Narosa (1998).
  21. Petrucci, R.H. *General Chemistry* 5th Ed. Macmillan Publishing Co.: New York (1985).
  22. *Atkins' Physical Chemistry*, 10<sup>th</sup> edition (2014), Oxford University Press
  23. Thomas Engel, Philip Reid; *Physical Chemistry* , Pearson Education (2006)
  24. J. N. Gurtu, A. Gurtu, *Advanced Physical Chemistry*, Pragati Edition
  25. McQuarrie, D. A., & Simon, J. D., *Physical Chemistry: A molecular approach*. Sausalito, CA: University Science Books (1997)
  26. Atkins, P., & de Paula, J., *Physical Chemistry for the Life Sciences*. New York: W. H. Freeman and Company (2006)
  27. McMahon, D. (2005). *Quantum Mechanics Demystified*. New York: McGraw-Hill Professional
  28. Ladd, M. *Introduction to Physical Chemistry* (3rd ed). Cambridge, UK: Cambridge University Press (1998)
-

## CH- 203: Chemistry Practical –II (1.5 Credits, 46.8 Lectures of 50 min.)

### Section A: Inorganic Chemistry

Wherever required standardization of volumetric reagent must be performed.

#### I] Synthesis of commercially important inorganic compounds (any two)

- 1) Synthesis of potash alum from aluminium metal (scrap Aluminium metal)
- 2) Synthesis of Mohr's Salt  $[(\text{FeSO}_4)(\text{NH}_4)_2\text{SO}_4] \cdot 6\text{H}_2\text{O}$
- 3) Preparation of Dark red inorganic pigment:  $\text{Cu}_2\text{O}$
- 4) Synthesis of  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$

#### Note:

- i. In synthesized compound student must confirm the particular cation and anion by performing qualitative tests.
- ii. Costing of product for 100 g pack can be calculated on the basis of cost of raw materials used and percent yield of the product.
- iii. Synthesized compounds should be collected from all students and stored properly. They should be used in other experiments such as Mohr's salt for determination of water of crystallization. Potash alum and  $\text{FeSO}_4$  can be given in IQA experiments or for estimations at SY and TY level.

#### II] Volumetric Analysis (Any Two)

1. Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture.
2. Determination of basicity of boric acid or oxalic acid or citric acid hence determination of their equivalent weight.
3. Estimation of water of crystallization in Mohr's salt by titrating with  $\text{KMnO}_4$ .

#### III] Analysis of Commercial products containing inorganic substances (any two)

- 1) Estimation of Ca from calcium supplementary tablet by complexometric titration.
- 2) Estimation of acid neutralizing capacity of antacids like Gelusil tablet/ Gellusil syrup etc.
- 3) Estimation of selectively Cu(II) from brass alloy by iodometrically (Use  $\text{KIO}_3$  as primary standard for standardization of  $\text{Na}_2\text{S}_2\text{O}_3$  and **not**  $\text{K}_2\text{Cr}_2\text{O}_7$ ).

#### IV] To draw polar plots of s and p orbitals.

### Section B: Organic Chemistry

#### I] Organic Purification Techniques

1. Purification of organic compounds by i) crystallization (from water and alcohol) ii) distillation (Two Compounds), iii) Sublimation (micro technique).

#### II] Organic preparations: Derivatives

2. Preparations: Mechanism of various reactions involved to be discussed. Recrystallization, determination of melting point and calculation of quantitative yields to be done. (Any Two)
  - a) Bromination of Cinnamic acid using sodium bromide and Sodium bromate. (Green Chemistry Approach)

OR

- a) Bromination of acetanilide using KBr and Ceric ammonium nitrate in aqueous medium. (Green Chemistry Approach)
- 3) Semicarbazone derivatives of aldehydes and ketones
- 4) Oxime and 2,4-dinitrophenylhydrazone of aldehyde/ketone

**Note:** Presence of extra element in the synthesized compound must be tested (Br and N in respective compound)

**N. B.:**

1. Use molar concentrations for volumetric /estimations/synthesis experiments.
2. Use optimum concentrations and volumes
3. Two burette method should be used for volumetric analysis ( Homogeneous mixtures )
4. Use of microscale technique is recommended wherever possible

**Reference Books:**

1. Svehla, G. *Vogel's Qualitative Inorganic Analysis*, Pearson Education, 2012.
2. Mendham, J. *Vogel's Quantitative Chemical Analysis*, Pearson, 2009.
3. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., *Textbook of Practical Organic Chemistry*, Prentice-Hall, 5th edition, 1996.
4. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry* Orient-Longman, 1960.
5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).

**Learning Outcome**

1. Inorganic Estimations using volumetric analysis
2. Synthesis of Inorganic compounds
3. Analysis of commercial products
4. Purification of organic compounds
5. Preparations and mechanism of reactions involved

**Course Outcome**

**CH- 101: Physical Chemistry**

After completing the course work learner will be acquired with knowledge of chemical energetics, Chemical equilibrium and ionic equilibria.

**CH- 102: Organic Chemistry**

Students will learn Fundamentals of organic chemistry, stereochemistry (Conformations, configurations and nomenclatures) and functional group approach for aliphatic hydrocarbons.

**CH- 201: Inorganic Chemistry**

Students will learn quantum mechanical approach to atomic structure, Periodicity of elements, various theories for chemical bonding.

**CH-202: Analytical Chemistry**

Students will know about basics of analytical chemistry, some techniques of analysis and able to do calculations essential for analysis.

**Lab Course CH 103 and CH-203**

1. The practical course is in relevance to the theory courses to improve the Understanding of the concepts.
  2. It would help in development of practical skills of the students.
  3. Use of microscale techniques wherever required
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# **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Three Year B.Sc. Degree Program in Mathematics**

**(Faculty of Science & Technology)**

**F.Y.B.Sc. (Mathematics)**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2019-2020**



## **Title of the Course: B. Sc (Mathematics)**

### **Preamble:**

SavitribaiPhule Pune University has decided to change the syllabi of various faculties from June,2019. Taking into consideration the rapid changes in science and technology and new approaches in different areas of mathematics and related subjects board of studies in mathematics with concern of teachers of mathematics from different colleges affiliated to SavitribaiPhule Pune University has prepared the syllabus of F. Y. B.Sc. Mathematics. To develop the syllabus the U.G.C. Model curriculum is followed.

### Aims:

- (i)** Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerable power of mathematical ideas and tools and know how to use them by modeling, solving and interpreting.
- (ii)** Reflecting the broad nature of the subject and developing mathematical tools for continuing further study in various fields of science and technology.
- (iii)** Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
- (iv)** Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

### Objectives:

- (i)** A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays, state important facts resulting from their studies.
- (ii)** A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
- (iii)** A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.
- (iv)** A student be able to apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.
- (v)** A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture.

Course Outcome:

Upon successful completion of this course, the student will be able to:

- i) The mathematical maturity of students in their current and future courses shall develop.
- ii) The student develops theoretical, applied and computational skills.
- iii) The student gains confidence in proving theorems and solving problems.

Structure of the course:

	Semester - I		Semester -II		Credit
Paper I	MT-111	Algebra	MT-121	Analytical Geometry	2
Paper II	MT-112	Calculus - I	MT-122	Calculus - II	2
Paper III	MT-113	Mathematics Practical	MT-123	Mathematics Practical	1.5

Proposed Structure of S. Y. B. Sc. Mathematics Courses:

	Semester - III		Semester -IV		
Paper I	MT-231	Calculus of Several Variables	MT-241	Linear Algebra-I	2
Paper II	MT-232 (A)	Laplace Transform and Fourier Series	MT-242(A)	Vector Calculus	2
	MT-232 (B)	Computational Geometry	MT-242(B)	Numerical Analysis	2
Paper III	MT-233	Mathematics Practical	MT-243	Mathematics Practical	2

Proposed Structure of T. Y. B. Sc. Mathematics Courses:

	Semester- V		Semester- VI		Credit
MT 351	Matric Spaces	MT 361	Complex Analysis	2	
MT 352	Real Analysis-I	MT 362	Real Analysis-II	2	
MT 353	Problem Course on MT 351 and MT 352	MT 363	Problem Course on MT 361 and MT 362	2	
MT 354	Group Theory-I	MT 364	Ring Theory-I	2	
MT 355	Ordinary Differential Equations-I	MT 365	Partial Differential Equations-I	2	
MT 356	Problem Course on MT 354 and MT 355	MT 366	Problem Course on MT 364 and MT 365	2	

<b>Select Any Two out of six courses</b>				
<b>MT357:A</b>	<b>Operations Research</b>	<b>MT367: A</b>	<b>Optimization Techniques</b>	<b>2</b>
<b>MT357:B</b>	<b>Number Theory</b>	<b>MT367: B</b>	<b>Graph theory</b>	<b>2</b>
<b>MT357:C</b>	<b>C- Programming</b>	<b>MT367: C</b>	<b>Lebesgue Integration</b>	<b>2</b>
<b>MT357:D</b>	<b>Lattice Theory</b>	<b>MT367: D</b>	<b>Financial Mathematics</b>	<b>2</b>
<b>MT357:E</b>	<b>Python Course -I</b>	<b>MT367: E</b>	<b>Python Course-II</b>	<b>2</b>
<b>MT357:F</b>	<b>Machine Learning Course- I</b>	<b>MT367: F</b>	<b>Machine Learning Course- II</b>	<b>2</b>
<b>MT 338</b>	<b>Practical based on papers selected from 357 A to 357 F</b>	<b>MT 348</b>	<b>Practical based on papers selected from 367 A to 367 F</b>	<b>2</b>
<b>MT-3510</b>	<b>Skill Enhancement course in maths</b>	<b>MT- 3511</b>	<b>Skill Enhancement course in maths</b>	<b>2</b>
<b>MT-3610</b>	<b>Skill Enhancement course in maths</b>	<b>MT- 3611</b>	<b>Skill Enhancement course in maths</b>	<b>2</b>

All three above courses are compulsory.

### 1. Equivalence of Previous syllabus along with new syllabus:

	<b>Old course</b>	<b>New Course</b>
<b>Paper I</b>	<b>MT-101 : Algebra and Geometry</b>	<b>MT-111: Algebra and MT-121 : Analytical Geometry</b>
<b>Paper II</b>	<b>MT-102 : Calculus and Differential Equations</b>	<b>MT-112 : Calculus - I and MT-122 : Calculus – II</b>
<b>Paper III</b>	<b>MT-103 : Mathematics Practical</b>	<b>MT – 113 : Mathematics Practical and MT – 113 : Mathematics Practical</b>

**Details of Syllabus:****Semester – I****MT 111- Algebra****Unit 1: Sets Relations and Functions (8 Lectures)**

- 1.1 Sets, Relations, Equivalence relations, Equivalence classes and partitions of a set
- 1.2 Functions, Basic terminology, Types of Functions, Inverse of a Function, Composition of Functions (Excluding theorems only examples).

**Unit2: Divisibility Theory in the Integers(10 Lectures)**

- 2.1 Mathematical Induction:Well-Ordering Principle.
- 2.2 The Division Algorithm, The Greatest Common Divisor, Euclid's Lemma, The Least Common Multiple, The Euclidean Algorithm.

**Unit 3: Primes and the theory of Congruence (8 Lectures)**

- 3.1 The Fundamental Number of Arithmetic: Prime Numbers, Euclid's Lemma.
- 3.2 The theory of Congruence: Basic Properties of congruence.
- 3.3 Fermat's Theorem

**Unit 4: Complex Numbers (10 Lectures)**

- 4.1 Sums and Products, Basic Algebraic Properties, Moduli, Complex Conjugates, Exponential form, Products and Quotients, De-Moivre's theorem.
- 4.2 Roots of Complex Numbers: The  $n^{\text{th}}$  roots of unity.
- 4.3 Regions in Complex Plane.

**Text Books:**

1. **A Foundation Course in Mathematics, Ajit Kumar, S. Kumeresan and Bhaba Kumar Sarma, Narosa Publication House.**  
Unit 1: Chapter 2: Sec. 2.1 to 2.5, Chapter 3: Sec. 3.1 to 3.6, Chapter 4: Sec. 4.1 to 4.4.
2. **Elementary Number Theory, David M. Burton, Tata McGraw Hill, Sixth Edition.**  
Unit 2: Textbook 2: Chapter 1: Sec. 1.1, Chapter 2: Sec. 2.2 to 2.4  
Unit 3: Textbook 2: Chapter 3: Sec. 3.1, Chapter 4: Sec. 4.1, 4.2, Chapter 5: Sec. 5.2.
3. **Complex Variables and Applications, James Ward Brown and Ruel V. Churchill, Mc-Graw Hill, Seventh Edition.**

Unit 4: Textbook 3: Chapter 1: Sec 1 to 10.

**Reference Books:**

1. Textbook of Algebra, S. K. Shah and S. C. Garg, Vikas Publishing House Pvt. Ltd. Edition 2017.
2. Introduction to Real Analysis by R.G. Bartle and D.R. Sherbert, John Wiley and Sons Inc, Fourth Edition.

**MT 112: CALCULUS - I****Unit 1: Real Numbers (06 Lectures)**

- 1.1 The Algebraic and Order Properties of  $\mathbb{R}$ :  
Algebraic properties of  $\mathbb{R}$ , Order properties of  $\mathbb{R}$ , Well-Ordering Property of  $\mathbb{N}$ .  
Arithmetic mean-Geometric mean inequality, Bernoulli's inequality.  
(Revision: essential properties should be revised with illustrative examples)
- 1.2 Absolute Value and the Real Line:  
Absolute value function and its properties, triangle inequality and its consequences, neighborhood of a point on real line.
- 1.3 The Completeness Property of  $\mathbb{R}$ :  
Definitions of Upper bound, Lower bound, supremum, infimum of subsets of  $\mathbb{R}$ , completeness property of  $\mathbb{R}$ .
- 1.4 Applications of the Supremum Property:  
Archimedean property and its consequences, The density theorem (without proof).

**Unit 2. Sequences (10 Lectures)**

- 2.1 Sequences and Their Limits:  
Definition and examples of sequences of real numbers, Definition of limit of sequence and uniqueness of limit, Examples on limit of sequence.
- 2.2 Limits Theorems:  
Definition of bounded sequence, Every convergent sequence is bounded, Algebra of limits.
- 2.3 Monotone Sequences:  
Definition and examples of monotone sequences, Monotone convergence theorem and examples.
- 2.4 Subsequences and Bolzano -Weierstrass Theorem:  
Definition of subsequence and examples, Divergence criteria, Monotone Subsequence theorem (without proof), Bolzano -Weierstrass theorem (first proof).

**Unit 3. Limits (08 lectures)**

- 3.1 Functions and their Graphs:

Functions, domain and range, graphs of functions, representing a function numerically, Vertical line test, Piecewise defined functions, increasing and decreasing functions, even and odd functions symmetry, common functions

### 3.2 Limits of Functions:

Definition of cluster point and examples, definition of limit of a function, sequential criterion for limits, divergence criteria.

### 3.3 Limit Theorems:

Algebra of limits (proofs using sequential criterion) ,Squeeze theorem.

### 3.4 Some extension of limit concepts:

one-sided limits, infinite limits (without proof) .

## Unit 4: Continuity

(12 lectures)

### 4.1 Continuous Functions:

Definition of continuous function at a point , sequential criterion for continuity, Divergence criterion, combination of continuous functions.

### 4.2 Continuous Functions on Intervals:

Properties of continuous functions on an interval, Boundedness theorem (without proof), The minimum -maximum theorem(without proof), Location of root theorem (Without proof), Bolzano's intermediate value theorem. Continuous function maps closed bounded interval to closed bounded interval, Preservation of interval theorem.

## Textbook Books:

### 1. Introduction to Real Analysis by R.G. Bartle and D.R. Sherbert, John Wiley and Sons Inc, Fourth Edition.

Unit 1: Chapter 2: Sec 2.1 (2.1.1 to 2.1.13), Sec. 2.2(2.2.1 to 2.2.9), 2.3, 2.4(2.4.1, 2.4.3 to 2.4.6, 2.4.8, 2.4.9).

Unit 2: Chapter 3: Sec. 3.1(3.1.1 to 3.1.7, 3.1.10, 3.1.11), Sec. 3.2(3.2.1 to 3.2.11), Sec. 3.3(3.3.1, 3.3.4), Sec. 3.4 (3.4.1 to 3.4.3, 3.4.5 to 3.4.8).

Unit 3: Chapter 4: Sec. 4.1(4.1.1, 4.1.3 to 4.1.9), Sec. 4.2(4.2.1 to 4.2.8), Sec. 4.3 (4.3.1 to 4.3.9).

Unit 4: Chapter 5: Sec. 5.1, Sec. 5.2, Sec 5.3 ( 5.3.1 to 5.3.5, 5.3.7 to 5.3.10).

### 2. Thomas Calculus, Thirteenth edition, Pearson Publication.

Unit 3: Text book-2: Chapter 1: Sec. 1.1.

## Reference books:

- 1 Introduction to Real analysis, William F.Trench, Free edition, 2010.
- 2 Calculus of a single variable Ron Larson , Bruce Edwards, tenth edition.
- 3 Elementary Analysis, The Theory of Calculus, Kenneth A. Ross, Springer Publication, second edition.
- 4 Calculus and its Applications, Marvin L. Bittinger, David J. Ellenbogen and Scott A. Surgent, Addison Wesley, tenth edition.

### MT 113: Mathematics Practical

(Practicals based on the applications of articles in MT 111 and MT 112)

In Semester-I, we should conduct 3 written practical and 3 practical on maxima software for each paper MT-111 and MT-112.

#### List of Practical

Practical 1 : Problems on Unit 1 and Unit 2(Written) from MT-111.

Practical 2 : Problems on Unit 3 (Written) from MT-111.

Practical 3 : Problems on Unit 4(Written) from MT-111.

Practical 4 :Introduction to maxima software forMT-111.

Practical 5 : Problems on unit 1 and unit 2 from MT-111using maxima software.

Practical 6 : Problems on Unit 3 and Unit 4 from MT-111using maxima software.

Practical 7: Problems on Unit 1 and Unit 2(Written) from MT-112.

Practical 8 : Problems on Unit 3 (Written) from MT-112.

Practical 9 : Problems on Unit 4(Written) from MT-112.

Practical 10 :Introduction to maxima software for MT-112.

Practical 11 : Problems on unit 1 and unit 2 from MT-112using maxima software.

Practical 12 : Problems on Unit 3 and Unit 4 from MT-112 using maxima software.

#### Note:

1 The soft copy of practicals on maxima software will be prepared and provided by the Board of Studies in mathematics.

2. Practical on maxima software can be performed on computer and android mobiles.

3. Android mobiles are allowed for practical examination on maxima software .

4. Practical examination of 25 marks on written problems, 10 marks for problems on maxima software ( 5 marks for writing syntax and 5 marks to perform the same on android mobile or computer).

## Semester - II

### MT 121-Analytical Geometry

#### **Unit 1: Analytical Geometry of Two Dimension (10 Lectures)**

- 1.1. Change of axes: translation and rotation.
- 1.2. Conic Sections: General equation of second degree in two variables
- 1.3. Reduction to standard form, center of conic, nature of conic.

#### **Unit 2: Planes (10 Lectures)**

- 2.1. Direction cosines and direction ratios, Equation of plane, Normal form, Transform to the normal form, Plane passing through three non-collinear points, Intercept form, Angle between two planes.
- 2.2. Distance of a point from a plane, Distance between parallel planes, Systems of planes, two sides of planes, Bisector planes.

#### **Unit 3: Lines in three dimension (8 lectures)**

- 3.1. Equations of a line in Symmetric and unsymmetrical forms, Line passing through two points, Angle between a line and a plane.
- 3.2. Perpendicular distance of a point from a plane, Condition for two lines to be coplanar (without proof).

#### **Unit 4: Sphere (8 Lectures)**

- 4.1. Equation of a sphere in different forms, plane section of a sphere.
- 4.2. Equation of a circle, sphere through a given circle
- 4.3. Intersection of a sphere and a line, Equation of tangent plane to sphere.

#### **Text Books:**

**1. Analytic Geometry in Two and Three Dimensions : Von Steuben**

Unit1: Sec, 8.4

**2. Analytical Solid Geometry: Shantinarayan; S. Chand and Company Ltd, New Delhi, 1998.**

Unit2: Sec. 1.6,1.7, Sec. 2.1 to 2.7

Unit3: Sec. 3.1 to 3.4, 3.7

Unit4: Sec. 6.1 to 6.6.

#### **Reference Book:**

1. P.K.Jain and Khalil Ahmad, A Text Book of Analytical Geometry of Three Dimensions, Wiley Eastern Ltd. 1999.



**MT 122: Calculus-II****Unit 1: Differentiation (10 lectures)**

## 1.1. The Derivatives:

Definition of the derivative of a function at a point, every differentiable function is continuous, Rules of differentiation, Caratheodary's theorem (without proof), The chain rule, Derivative of inverse function (without proof, only examples).

## 1.2. The Mean Value Theorems:

Interior extremum theorem, Mean Value theorems and their Consequences, Intervals of increasing and decreasing of a function, first derivative test for extrema.

**Unit 2: L' Hospital Rule and Successive Differentiation (10 lectures)**

## 2.1 L'Hospital Rule:

Indeterminate forms, L'Hospital Rules (without proof)

## 2.2 Taylor's theorem: Taylor's theorem and Maclaurin's theorem with Lagrange's form of remainder (Without proof).

2.3 Successive Differentiation: The  $n$ th derivative and Leibnitz theorem for successive differentiation.**Unit 3: Ordinary Differential Equations (08 lectures)**

## 3.1 Linear first order equations.

## 3.2 Separable equations.

## 3.3 Existence and Uniqueness of solutions of nonlinear equations.

**Unit 4: Exact Differential Equations (08 lectures)**

## 4.1 Transformation of nonlinear equations to separable equations.

## 4.2 Exact differential equations.

## 4.3 Integrating factors.

**Textbooks:****1. Introduction to Real Analysis by R.G. Bartle and D.R. Sherbert, John Wiley and Sons, Inc., Fourth Edition.**

Unit 1: Chapter 6: Sec. 6.1(6.1.1 to 6.1.8), Sec 6.2(6.2.1 to 6.2.8).

Unit 2: Chapter 6: Sec 6.3(6.3.1 to 6.3.7), Sec 6.4(6.4.1 to 6.4.3).

**2. Differential Calculus by Shanti Narayan, Tenth Revised Edition.**

Units 2: Chapter 5: Sec. 5.1 to 5.6.

**3. Elementary Differential equations, William F. Trench, E-book (Free download)**

Unit 3: Chapter 2: Sec 2.1 to 2.3.

Unit 4: Chapter 2: Sec 2.4 to 2.6.

**Reference books:**

1. Introduction to Real analysis, William F.Trench, Free edition, 2010.
2. Calculus of a single variable Ron Larson , Bruce Edwards, tenth edition.
3. Elementary Analysis, The Theory of Calculus, Kenneth A. Ross, Springer Publication, second edition.
4. Calculus and its Applications, Marvin L. Bittinger, David J. Ellenbogen and Scott A. Surgent, Addison Wesley, tenth edition.
5. Ordinary and partial Differential equations,M.D. Raisingania, S. Chand andCompany,2009.

**MT 123: Mathematics Practical**

(Practical based on the applications of articles in MT 121 and MT 122)

In Semester-II, we should conduct 4 written practical and 2 practical on maxima software for each paper MT-121 and MT-122.

**List of Practical**

- Practical 1 : Problems on Unit 1 (Written) from MT-121.  
Practical 2 : Problems on Unit 2 (Written) from MT-121.  
Practical 3 : Problems on Unit 3(Written) from MT-121.  
Practical 4 :Problems on Unit 4(Written) from MT-121.  
Practical 5 : Problems on unit 1 and unit 2 from MT-121using maxima software.  
Practical 6 : Problems on Unit 3 and Unit 4 from MT-121using maxima software.  
Practical 7: Problems on Unit 1 (Written) from MT-122.  
Practical 8 : Problems on Unit 2 (Written) from MT-122.  
Practical 9 : Problems on Unit 3(Written) from MT-122.  
Practical 10 :Problems on Unit 4(Written) from MT-122.  
Practical 11 : Problems on unit 1 and Unit 2 from MT-122using maxima software.  
Practical 12: Problems on Unit 3 and Unit 4from MT-122 using maxima software.

**Note:**

- 1 The soft copy of practical on maxima software will be prepared and provided by the Board of Studies in mathematics.
2. Practicals on maxima software can be performed on computer and android mobiles.
3. Android mobiles are allowed for practical examination on maxima software .
- 4.Practical examination 25 marks on written problems, 10 marks for problems on maxima software ( 5 marks for writing syntax and 5 marks to perform the same on android mobile or computer).

**Modalities For Conducting The Practical and The Practical Examination:**

- 1) There will be one 3 hour practical session for each batch of 15 students per week.
- 2) The College will conduct the Practical Examination at least 15 days before the commencement of the Main Theory Examination. The practical examination will consist of written examination of 20 marks, 10 marks on maxima software and oral examination of 05 marks.
- 3) There will be no external examiner, the practical exam will be of the duration of 3 hours.
- 4) The subject teacher will set a question paper based on pattern as follows:
  - Q1.** Any 2 out of 4 each question of 5 marks on paper - I.
  - Q2.** Any 2 out of 4 each question of 5 marks on paper - II.
  - Q3.** (a) Any 1 out of 2 each question of 5 marks on maxima software from paper – I.  
(b) Any 1 out of 2 each question of 5 marks on maxima software from paper – II.
- 5) Each student will maintain a journal to be provided by the college.
- 7) The internal 15 marks will be given on the basis of journal prepared by student and the cumulative performance of student at practical.
- 8) It is recommended that concept may be illustrated using computer software maxima and graphing calculators wherever possible.
- 9) Study tours may be arranged at places having important mathematical institutes or historical places.
- 10) **Special Instruction:**
  - a) There should be well equipped mathematics practical laboratory of size 20 X 20 sq. fts containing at least 10 computers.
  - b) Examiners should set separate question papers, solutions and scheme of marking for each batch and claim the remuneration as per rule.
  - c) Before starting each practical necessary introduction, basic definitions, intuitive inspiring ideas and prerequisites must be discussed.



# **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Three Year B.Sc. Degree Program in Physics**

**(Faculty of Science & Technology)**

**F.Y.B.Sc. (Physics)**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2019-2020**

## **Title of the Course: B.Sc. (Physics)**

### **Preamble:**

The curriculum for the B. Sc. (Physics) programme is designed to cater to the requirement of Choice Based Credit System following the University Grants Commission (UGC) guidelines. In the proposed structure, due consideration is given to Core and Elective Courses (Discipline specific - Physics), along with Ability Enhancement (Compulsory and Skill based) Courses. Furthermore, continuous assessment is an integral part of the CBCS, which will facilitate systematic and thorough learning towards better understanding of the subject. The systematic and planned curricula from first year to the third year (comprised of six semesters) shall motivate the student for pursuing higher studies in Physics and inculcate enough skills for becoming an entrepreneur.

### **Objectives:**

- To foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics.
- To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
- To familiarize with recent scientific and technological developments.
- To create foundation for research and development in Physics.
- To help students to learn various experimental and computational tools thereby developing analytical abilities to address real world problems.
- To train students in skills related to research, education, industry, and market.
- To help students to build-up a progressive and successful career in Physics.

**Structure of the Course:**

Subject Name	Year	Semester	Course Type	Course Code	Course Name	Credit
Physics	1	I	Compulsory Course	PHY-111	Mechanics and Properties of Matter	2
				PHY-112	Physics Principles and Applications	2
				PHY-113	Physics Laboratory-IA	1.5
		II	Compulsory Course	PHY-121	Heat and Thermodynamics	2
				PHY-122	Electricity and Magnetism	2
				PHY-123	Physics Laboratory-IB	1.5
	2	III	Compulsory Course	PHY-231	Mathematical Methods in Physics I	2
				PHY-232	Electronics I /Instrumentation	2
				PHY-233	Physics Laboratory-2A	2
			Ability Enhancement Compulsory Course	PHY-2310	Environment -I	2
				PHY-2311	Language-I	2
				IV	Compulsory Course	PHY-241
		PHY-242	Optics			2
		PHY-243	Physics Laboratory-2B			2
		Ability Enhancement Compulsory Course	PHY-2410		Environment –II	2
			PHY-2411	Language-II	2	
	3	V	Discipline Specific Elective Course	PHY- 351	Mathematical Methods in Physics II	2
				PHY- 352	Electrodynamics	2
				PHY- 353	Classical Mechanics	2
				PHY- 354	Atomic and Molecular Physics	2
				PHY- 355	Computational Physics	2
				PHY- 356	Elective I (Select any One)	2
				PHY- 357	Physics Laboratory-3A	2
PHY- 358				Physics Laboratory-3B	2	
PHY- 359				Physics Laboratory-3C	2	
Skill Enhancement Course				PHY-3510	Maintenance and Repairing of Laboratory equipment – I	2
		PHY- 3511	Household Electrification, Maintenance and repairing - I	2		

		VI	Discipline Specific Elective Course	PHY- 361	Solid State Physics	2
				PHY- 362	Quantum Mechanics	2
				PHY- 363	Thermodynamics and Statistical Physics	2
				PHY- 364	Nuclear Physics	2
				PHY- 365	Electronics II /Advanced Electronics	2
				PHY- 366	Elective II (Select any One)	2
				PHY- 367	Physics Laboratory-4A	2
				PHY- 368	Physics Laboratory-4B	2
				PHY- 369	Project	2
		Skill Enhancement Course	PHY-3610	Maintenance and Repairing of Laboratory Equipment – II	2	
			PHY- 3611	Household Electrification, Maintenance and Repairing- II	2	

**SEMESTER-I****Course code and title: PHY-111 Mechanics and Properties of Matter****Lectures: 36** **(Credits-02)****1. Motion:** **(9 Lectures)**

Introduction to motion, Types of motion, Displacement, Velocity, Acceleration, Inertia, Newton's laws of motion with their explanations, Various types of forces in nature, Frames of reference (Inertial and Non inertial), Laws of motion and its real life applications, Problems.

**2. Work and Energy:** **(7 Lectures)**

Kinetic energy, Work Energy Theorem, Work done with constant force, Work done with varying force (spring force), Conservative and Non conservative forces, Potential energy, Law of energy conservation, Gravitational potential energy, Problems.

**3. Fluid Mechanics:** **(8 Lectures)**

Concept of viscous force and viscosity, Coefficient of viscosity, Steady and Turbulent flow, Reynolds number, Equation of continuity, Bernoulli's Principle, Applications of Bernoulli's Principle (Ventury Meter, PitotTube), Applications of viscous fluids, Problems.

**4. Properties of Matter:** **(12 Lectures)**

Surface tension, Angle of contact, Factors affecting surface tension, Jaeger's method for determination of surface tension, Applications of surface tension.

Stress and Strain, Hook's law and Coefficient of elasticity, Young's modulus, Bulk modulus, Modulus of rigidity, Work done during longitudinal strain, Volume strain, Shearing strain, Poisson's ratio, Relation between three elastic moduli, ( $Y$ ,  $\eta$ ,  $K$ ), Applications of elasticity, Problems.

## Reference Books

1. Physics: Resnick, Halliday & Walker 9/e, Wiley.
2. University Physics : Sears and Zeemansky, XIth/XIIth Edition, Pearson Education.
3. Mechanics: D. S. Mathur, S. Chand and Company, New Delhi.
4. Elements of Properties of Matter : D. S. Mathur, S. Chand, New Delhi.
5. Concepts of Physics: H. C. Verma, BharatiBhavan Publisher.
6. Problems in Physics: P. K. Srivastava, Wiley Eastern Ltd.
7. Applied Fluid Mechanics: Mott Robert, Pearson Benjamin Cummir VI Edition. Pearson Education/Prentice Hall International, New Delhi.
8. Fundamentals of Mechanics: J C Upadhyaya, Himalaya Publishing House.
9. Mechanics: D. S. Mathur, Revised by P. S. Hemne, S. Chand and Company, New Delhi.
- 10.



**Course code and title: PHY-112 Physics Principles and Applications****Lectures: 36****(Credits-02)****Learning Outcomes:**

On successful completion of this course students will be able to do the following:

1. To understand the general structure of atom, spectrum of hydrogen atom.
2. To understand the atomic excitation and LASER principles.
3. To understand the bonding mechanism and its different types.
4. To demonstrate an understanding of electromagnetic waves and its spectrum.
5. Understand the types and sources of electromagnetic waves and applications.
6. To demonstrate quantitative problem solving skills in all the topics covered.

**1. Physics of Atoms****(08-Lectures)**

1.1 Introduction to Atom

1.2 Atomic Models:

1.2.1 Thomson's Atomic Model

1.2.2 Rutherford's Atomic Model

1.2.3 Bohr's Atomic Model

1.3 Atomic Spectra:

1.3.1 Emission line Spectrum

1.3.2 Absorption line spectrum

1.3.3 Uses of Atomic Spectra

1.4 Classical planetary model of Hydrogen Atom

1.5 The Bohr Theory of the Hydrogen Atom

1.6 The Hydrogen Spectrum

1.7 Frank-Hertz experiment

Problems

**2. LASERS and Its Applications****(07-Lectures)**

2.1 Introduction to LASERS

2.2 Basic Principle of Lasers: Three Processes

2.3 Characteristics of Lasers: brief explanation

2.4 Boltzmann Distribution Law

2.5 Population Inversion and Pumping

2.6 Types of Lasers:

2.5.1 He-Ne Laser

2.5.2 Ruby Laser

2.7 Applications of Lasers

Problems

**3. Physics of Molecules****(08-Lectures)**

3.1 Introduction to Bonding Mechanisms

3.2 Forces between Atoms

3.3 Types of Bonding:

3.3.1 Ionic Bonds

3.3.2 Covalent Bonds

3.3.3 van der Waal's Bonds

3.3.4 Hydrogen Bond

3.3.5 Metallic Bond

3.4 Rotation energy levels of a diatomic molecule

3.5 Vibration energy levels of a diatomic molecule

Problems

**4. Sources of Electromagnetic Waves (06-Lectures)**

- 4.1 Introduction to Electromagnetic Waves: Historical Perspective
- 4.2 General properties of Electromagnetic radiations
- 4.3 Electromagnetic spectrums and its sources
- 4.4 Production of electromagnetic waves: Hertz experiment
- 4.5 Plank's hypothesis of Photons
- 4.6 Applications of various waves in electromagnetic spectrum

**5. Applications of Electromagnetic Waves (07-Lectures)**

- 5.1 Microwave oven
  - 5.2 RADAR
  - 5.3 Pyroelectric thermometer
  - 5.4 X-ray radiography
  - 5.5 CT Scan
  - 5.6 Solar cell and its types
- Problems

**Books/References**

1. Concepts of Modern Physics: A Beiser (6th ed., McGraw Hill, 2003)
2. Modern Physics: Raymond A. Serway, Clement J. Moses, Curt A. Moyer
3. Sears and Zemansky's University Physics: H.D. Young R. A. Freedman, Sandin (11th Ed. Pearson Education)
4. LASERS: M. N. Avdhanulu, S. Chand Publications.

**Course code and title: PHY-113 Physics Laboratory 1A****Practical: 10****(Credits-1.5)****Section I- Mechanics and Properties of Matter**

Sr. No	Title of the experiment
1	Study and use of various measuring Instruments. 1. Vernier caliper 2. Micrometer Screw Gauge 3. Travelling Microscope
2	Study of Modulus of Rigidity of wire using Torsional Oscillations
3	Determination of coefficient of Viscosity by Poiseuille's method
4	Determination of “Y” and “ $\eta$ ” by flat spiral spring
5	Determination of “Y” by bending method.
6	Study of surface tension by Jaeger's method
7	Study of Poisson's ratio of rubber using rubber tube /rubber chord
8	Study of surface tension of liquid using Fergusson Method

**Section II-Physics Principles and Applications**

Sr. No	Title of the experiment
1	Study of Spectrometer and determination of angle of prism
2	Study of Spectrometer calibration and determination of refractive indices of different colors
3	Study of divergence of LASER beam
4	Study of total internal reflection using LASER
5	Determination of Plank's constant
6	Determination of wavelength of LASER light by plane diffraction grating
7	Study of I-V characteristics of solar cell

Note: Any four experiments from each section be conducted during the semester, with a total of 10 experiments.

**SEMISTER-II****Course code and title: PHY-121 Heat and Thermodynamics****Lectures: 36** **(Credits-02)****1. Fundamentals of Thermodynamics** **(10 Lectures)**

Concept of thermodynamic state, Equation of state, Van der Waal's equation of state, Thermal equilibrium, Zeroth law of thermodynamics, Thermodynamic processes: Adiabatic, Isothermal, Isobaric and Isochoric changes, Indicator diagram, Work done during isothermal change, Adiabatic relations, Work done during adiabatic change, Internal energy, Internal energy as state function, First law of thermodynamics, Reversible and Irreversible changes, Problems.

**2. Applied Thermodynamics:** **(9 Lectures)**

Conversion of heat into work and its converse, Second law of thermodynamics, Concept of entropy, Temperature - entropy diagram, T-dS equations, Clausius - Clapeyron latent heat equations, Problems.

**3. Heat Transfer Mechanisms** **(9 Lectures)**

Carnot's cycle and Carnot's heat engine and its efficiency, Heat Engines: Otto cycle & its efficiency, Diesel cycle & its efficiency, Refrigerators: General principle and coefficient of performance of refrigerator, Simple structure of Vapour compression refrigerator, Air Conditioning: Principle and its applications, Problems.

**4. Thermometry:** **(8 Lectures)**

Concept of heat & temperature, Principle of thermometry, Temperature scales & inter-conversions, Principle, Construction and Working: (Liquid thermometers, Liquid filled thermometers, Gas filled thermometers, Bimetallic thermometers, Platinum resistance thermometer, Thermocouple), Problems.

Reference Books:

1. Concept of Physics: H. C. Verma, BharatiBhavan Publisher.
2. Heat and Thermodynamics: Brijlal, N. Subrahmanyam, S. Chand and Company Ltd.
3. Heat and Thermodynamics: Mark W. Zemansky, Richard H. Dittman, 7<sup>th</sup> Edition, Mc-Graw Hill International Edition.
4. Thermodynamics and Statistical Physics: J. K. Sharma, K. K. Sarkar, Himalaya Publishing House.
5. Thermal Physics (Heat and Thermodynamics): A. B. Gupta, H. P. Roy books and Allied (P) Ltd. Calcutta.
6. Instrumentation: Devices & Systems, Rangan, Mani, and Sarma.

**Course code and title: PHY-122 Electricity and Magnetism****Lectures: 36****(Credits-02)****Learning Outcomes:**

On successful completion of this course students will be able to do the following:

- 1) To understand the concept of the electric force, electric field and electric potential for stationary charges.
- 2) Able to calculate electrostatic field and potential of charge distributions using Coulomb's law and Gauss's law.
- 3) To understand the dielectric phenomenon and effect of electric field on dielectric.
- 4) To Study magnetic field for steady currents using Biot-Savart and Ampere's Circuital laws.
- 5) To study magnetic materials and its properties.
- 6) Demonstrate quantitative problem solving skills in all the topics covered.

**1. Electrostatics****(08-Lectures)**

- 1.1 Revision of Coulomb's law:
    - 1.1.1 Statement
    - 1.1.2 Variation of forces with distances
  - 1.2 Superposition principle:
    - 1.2.1 Statement
    - 1.2.2 Explanation with illustration
  - 1.3 Energy of system of charges
  - 1.4 Concept of electric field
    - 1.4.1 Due to point charge
    - 1.4.2 Due to group charges
  - 1.5 Concept of electric flux
  - 1.6 Gauss's law in electrostatics
- Problems

**2. Dielectrics****(08-Lectures)**

- 2.1 Introduction to dielectric materials
  - 2.2 Electric Dipole
    - 2.2.1 Electric dipole
    - 2.2.2 Dipole moment
  - 2.3 Electric potential and intensity at any point due to dipole
  - 2.4 Torque on a dipole placed in an electric field
  - 2.5 Polar and non-polar molecules
  - 2.6 Electric polarization of dielectric material
  - 2.7 Gauss' law in dielectric
  - 2.8 Electric vectors and its relation
- Problems

**3. Magnetization****(07-Lectures)**

- 3.1 Introduction to Magnetization
- 3.2 Magnetic materials
- 3.3 Types of Magnetic Materials
  - 3.3.1 Diamagnetic materials
  - 3.3.2 Paramagnetic materials
  - 3.3.3 Ferromagnetic materials
  - 3.3.4 Antiferromagnetic materials

3.4 Bohr magnetron  
Problems

#### 4. Magnetostatics

(07-Lectures)

- 4.1 Introduction to magnetization,
- 4.2 Magnetic Induction and Intensity of magnetization
- 4.3 Biot-Savart's law:
  - 4.3.1 Statement
  - 4.3.2 Long straight conductor
  - 4.3.3 Circular Coil
- 4.4 Ampere's circuital law:
  - 4.4.1 Statement
  - 4.4.2 Field of Solenoid
  - 4.4.3 Field of Toroid
- 4.5 Gauss law for magnetism  
Problems

#### 5. Magnetic Properties of Materials

(06-Lectures)

- 5.1 Definition
  - 5.1.1 Magnetization (M),
  - 5.1.2 Magnetic Intensity (H),
  - 5.1.3 Magnetic Induction (B),
  - 5.1.4 Magnetic Susceptibility
  - 5.1.5 Magnetic Permeability
- 5.2 Relation between B, M and H
- 5.3 Hysteresis and Hysteresis Curve
- 5.4 Ferrite materials and its Applications  
Problems

#### References:

1. Fundamentals of Physics: Halliday Resnik and Walker, 8<sup>th</sup> Edition.
2. Electromagnetics: B. B. Laud.
3. Foundations of Electromagnetic theory: Reitz, Milford, Christey.
4. Electricity and Electronics: D.C. Tayal, Himalaya Publishing House, Mumbai.
5. Introduction to Electrodynamics: D.G. Griffith.
6. Electricity and Magnetism: Brij Lal, Subramanyan, Ratan Prakashan (Revised edition, 1997).
7. Electricity and Magnetism: Khare, Shrivastav (Revised edition, 1997).

**Course code and title: PHY-123 Physics Laboratory 1B****Practical: 08****(Credits-1.5)****Section I- Heat and Thermodynamics**

Sr No	Title of the experiment
1	Interpretation of Isothermal and Adiabatic curve on P-V diagram and theoretical study of Carnot's cycle by drawing graphs of Isothermal and Adiabatic curves
2	Study of temperature coefficient of Thermistor.
3	Study of Thermocouple and determination of inversion temperature
4	Study of thermal conductivity by Lee's method
5	Study of specific heat of Graphite
6	Study of Solar constant
7	Determination of calorific values of different fuels

**Section II- Electricity and Magnetism**

Sr No	Title of the experiment
1	Study of charging and discharging of capacitor
2	Study of LR circuit
3	Study of LCR circuit
4	Study of Kirchhoff's Laws
5	Study of Diode characteristics
6	Study of Voltmeter, Ammeter and Multimeter ( AC, DC, ranges and least count)
7	Determination of frequency of AC mains
8	Comparison of capacitor using DeSauty's method

**Note: Any four experiments from each section be conducted during the semester.**



# **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Three Year B.Sc. Degree Program in Zoology**

**(Faculty of Science & Technology)**

## **F.Y.B.Sc. Zoology**

**Choice Based Credit System Syllabus**

**to be implemented from**

**Academic Year 2019-2020**



**Preamble:**

Zoology is one of the major subjects of Basic Sciences and deals with all aspects of animal biology. It includes an interesting range of highly diverse topics. A zoology student needs to gain understanding of many areas of the subject to keep pace with advancements in Life Sciences.

This under-graduate degree program has been designed by the Board of Studies in Zoology of Savitribai Phule Pune University with a substantial component of what is needed from zoologists as a skilled career and what zoologists need to pursue for post-graduation and further academic studies. It follows the guidelines laid down by the University Grants Commission, New Delhi. This newly designed curriculum is a perfect blend of the classical aspects in Zoology and the advanced and more specialized areas.

This degree offers Discipline Specific Core Courses [CC] in Animal Systematics, Animal Ecology, Animal Cell biology, Applied Zoology, Pest Management, Histology, Biological Chemistry, Genetics, Developmental Biology, Parasitology, Medical & Forensic Zoology, Animal Physiology, Molecular Biology, Entomology, Techniques in Biology and Evolutionary Biology.

In addition to the Core Courses, Ability Enhancement Compulsory Courses [AECC] have been added in the second year i.e. Semester III and Semester IV of the undergraduate course. In the third year i.e. Semester V and Semester VI, Discipline specific Elective Courses [DSEC] and Skill Enhancement Courses [SEC] have been offered. The students, therefore, have an opportunity to take courses in Environment Awareness, Language communication: English/Marathi, Aquarium Management, Poultry Management and Environmental Impact Assessment. In Semester VI the students also have a course dedicated to Project work.

The syllabus has been framed in such a way that the student gains each year, a broader perspective of the subject as he progresses towards completion of the degree program. Field trips, Educational visits and the Project work have been included for the student to experience the applications of the theory learnt in the classroom.

After completion of the program, it is expected that students will understand and appreciate: animal diversity, few applications of Zoology, the structure, functions and life processes at cellular, tissue, organ and system level, significance of evolution, and basic concepts of human health. The students would also gain an insight into laboratory and field work through the practical course, field work and the project.

While presenting this new syllabus to the teachers and students of F.Y.B.Sc. Zoology, I am extremely happy to state that efforts have been made to seek inputs of all the stake holders to make it more relevant.

The new course that will be effective from the academic year 2019- 2020 and will follow the Choice Based Credit System in a Semester mode. It has been primed keeping in view the distinctive requirements of B.Sc. Zoology students. The contents have been drawn-up to accommodate the widening prospects of the discipline of Life Sciences. They reflect the changing prerequisites of the students. This program has been introduced with 132 credits for the subject group while 08 credits to earn from any of the 08 groups offering a range of curricular, cocurricular and extracurricular activities. This pattern has been specially aimed towards the overall development of the students'. The calculation of credits and CGPA will

be as per the guidelines of the University. The B.Sc. Zoology program provides an appropriate blend of classical and applied aspects of the subject. This newly designed curriculum will allow students to acquire the skill in handling scientific instruments planning and performing in the laboratory and exercising critical judgement, independent thinking and problem solving skills. The Syllabus has been revised with the following aims

- To foster curiosity in the students for Zoology
- To create awareness amongst students for the basic and applied areas of Zoology
- To orient students about the importance of abiotic and biotic factors of environment and their conservation.
- To provide an insight to the aspects of animal diversity.
- To inculcate good laboratory practices in students and to train them about proper handling of lab instruments.

**1. Course Structure:****Course Structure with Credit Distribution of the Undergraduate Science Program in Zoology**

Course	Course Code and Name of the Course		Credits
<b>F.Y.B.Sc.</b>	<b>SEMESTER I</b>	<b>SEMESTER II</b>	
CC	ZO-111 Animal Diversity I	ZO-121 Animal Diversity II	2+2
CC	ZO-112 Animal Ecology	ZO-122 Cell Biology	2+2
CC	ZO-113 Zoology Practical Paper	ZO-123 Zoology Practical Paper	1.5 +1.5
<b>S.Y.B.Sc.</b>	<b>SEMESTER III</b>	<b>SEMESTER IV</b>	
CC	ZO-231 Animal Diversity III	ZO-241 Animal Diversity IV	2+2
CC	ZO-232 Applied Zoology I	ZO-242 Applied Zoology II	2+2
CC	ZO-233 Zoology Practical Paper	ZO-243 Zoology Practical Paper	2+2
AECC	EVS 231-Environment Awareness	EVA 241-Environment Awareness	2+2
AECC	LA 231-English/Marathi	LA 241- English /Marathi	2+2
<b>T.Y.B.Sc.</b>	<b>SEMESTER V</b>	<b>SEMESTER VI</b>	
DSEC	ZO-351 Pest Management	ZO-361 Medical & Forensic Zoology	2+2
DSEC	ZO-352 Histology	ZO-362 Animal Physiology	2+2
DSEC	ZO-353 Biological Chemistry	ZO-363 Molecular Biology	2+2
DSEC	ZO-354 Genetics	ZO-364 Entomology	2+2
DSEC	ZO-355 Developmental Biology	ZO-365 Techniques in Biology	2+2
DSEC	ZO-356 Parasitology	ZO-366 Evolutionary Biology	2+2
DSEC	ZO-357 Zoology Practical Paper 1	ZO-367 Zoology Practical Paper 1	2+2
DSEC	ZO-358 Zoology Practical Paper 2	ZO-368 Zoology Practical Paper 2	2+2
DSEC	ZO-359 Zoology Practical Paper 3	ZO-369 Zoology Practical Paper 3	2+2
SEC	ZO-3510 Aquarium Management	ZO-3610 Environmental Impact Assessment	2+2
SEC	ZO- 3511 Poultry Management	ZO-3611 Project	2+2

**Detailed Syllabus of F.Y.B.Sc.**

Paper	Semester I Course Code & Course	Credits	No of Lectures	Marks (Internal + University)	Semester II Course Code & Course	Credits	No of Lectures	Marks (Internal + University)
I	ZO-111 Animal Diversity I	02	30	15+ 35= 50	ZO-121 Animal Diversity II	02	30	15+ 35 = 50
II	ZO-112 Animal Ecology	02	30	15+ 35 = 50	ZO-122 Cell Biology	02	30	15+ 35 = 50
III	ZO-113 Zoology Practical Paper	01	15 practical	15+ 35 = 50	ZO-123 Zoology Practical Paper	01	15 Practical	15+ 35 = 50

Course No.	Course Title	Total Number of lectures/practical per Term	Standard of passing		
			Internal marks	University marks	Total marks
ZO-111 (First term)	Animal Diversity-I	Three lectures/Week (Total 30 lectures per term)	15	35	50
ZO-121 (Second term)	Animal Diversity-II	Three lectures/Week (Total 30 lectures per term)	15	35	50
ZO-112 (First term)	Animal Ecology	Three lectures/Week (Total 30 lectures per term)	15	35	50
ZO-122 (Second Term)	Cell Biology	Three lectures/Week (Total 30 lectures per term)	15	35	50
ZO-113 (First term)	Zoology Practical Paper	Practical session of 3 hours. 15 Practicals	15	35	50
ZO-123 (Second Term)	Zoology Practical Paper	Practical session of 3 hours. 15 Practicals	15	35	50

**Animal Diversity I & II****Objectives:**

1. To understand the Animal diversity around us.
2. To understand the underlying principles of classification of animals.
3. To understand the terminology needed in classification.
4. To understand the differences and similarities in the various aspects of classification.
5. To classify invertebrates and to be able to understand the possible group of the invertebrate observed in nature. to understand our role as a caretaker and promoter of life.

**Learning outcomes for the course:**

1. The student will be able to understand classify and identify the diversity of animals.
2. The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.
3. The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.

**Course Title: Animal Diversity –I****Course Code-ZO-111****Semester I****(2 credits-30 lectures)**

<b>No.</b>	<b>Title &amp; Contents</b>	<b>Number of lectures</b>
1.	<b>Principles of Classification:</b> Taxonomy & Systematics 1.1 Taxonomy: Basic terminology and Introduction <ul style="list-style-type: none"> <li>• Alpha, Beta and Gamma levels of taxonomy, Micro-taxonomy</li> <li>• Macro taxonomy: Phenetics (numerical taxonomy, Cladistics (Phylogenetic systematics), Evolutionary taxonomy (evolutionary systematics)</li> <li>• Classical taxonomy and experimental or neo taxonomy (biochemical taxonomy and Cytotaxonomy)</li> <li>• Significance of Taxonomy</li> </ul> 1.2 Systematics: definition introduction	<b>(05)</b>

- 1.3 Linnaean system of classification (Six level classification: Phylum, class, order, family, genus, species)
- 1.4 Concept of Species: Biological & Evolutionary
- 1.5 Introduction to Binomial Nomenclature.
- 1.6 Introduction to Five kingdom system.
2. **General Features of kingdom Animalia** (02)
- 2.1 General characters of Kingdom Animalia, Grades of organization
- 2.2 Symmetry.
3. **Kingdom Protista (Phylum: Protozoa)** (07)
- 3.1 Introduction to Phylum Protozoa
- 3.2 Salient features of Phylum Protozoa
- 3.3 Classification of Phylum Protozoa up to classes with two examples of each class (names only).
- Class Rhizopoda (e.g :*Entamoeba histolytica*, *Arcella*),
- Class Mastigophora (e.g: *Euglena viridis*, *Trypanosoma gambiense*),
- Class Ciliata (e.g *Paramecium caudatum*, *Opalina ranarum*),
- Class Sporozoa (e.g *Plasmodium vivax*, *Toxoplasma gondii*)
- 3.4 Locomotion in Protozoa: Amoeboid, Ciliary and Flagellar with suitable examples
- 3.5 Type Study: ***Paramecium caudatum***: Classification, Habit and Habitat, External morphology, Feeding and digestion, Excretion, Reproduction (binary fission and conjugation)
- 3.6. Economic importance of Protozoa (three harmful and one useful protozoan)
- 3.6.1-**Harmful Protozoa:**
- Plasmodium vivax* (malarial parasite),
- Entamoeba histolytica* (Amoebic dysentery),
- Trypanosoma gambiense* (Gambian sleeping sickness).
- 3.6.2- **Useful Protozoa:**
- Trichonympha*

4. **Origin of Metazoa** (01)  
4.1 Introduction Origin and importance of Metazoa
5. **Phylum Porifera** (06)  
5.1. Introduction to Phylum Porifera  
5.2 Classification of Phylum Porifera up to classes with two examples of each class (names only, no description of specimens).  
Class Calcarea (e.g.: *Leucosolenia*, *Sycon* (*Scypha*))  
Class Hexactinellida (e.g: *Euplectella* (venus flower basket), *Hyalonema* (glass sponge))  
Class Demospongiae (e.g: *Chalina* (Mermaid's gloves, *Spongilla* (fresh water sponge))  
5.3 Canal system in sponges: Ascon, Leucon and Rhagon type.  
5.4 Skeleton in sponges: Spicules, its types:  
Microscleres & Megascleres,  
Monoaxon – monactinal, diactinal, Amphidiscs, Triaxon, Polyaxon,  
Spongin fibres.  
5.5 Regeneration in sponges.  
5.6 Economic importance of Phylum Porifera.
6. **Phylum: Cnidaria** (05)  
6.1 Introduction to Phylum Cnidaria  
6.2 Salient features of Phylum Cnidaria  
6.3 Classification of Phylum Cnidaria up to class level with given examples each class (names of examples only)  
Class Hydrozoa e.g.: *Hydra*, *Physalia* (Portuguese man of war)  
Class Scyphozoa e.g: *Aurelia* (Jelly fish), *Leucernaria* (trumpet shaped Jellyfish)  
Class Anthozoa: e.g; *Metridium* (Common sea anemone)  
6.4 Polymorphism in Hydrozoa: Polyps & Medusa (polyp types: gastrozooids, dactylozooids, gonozooids) and functions  
6.5 Economic importance of Cnidarians with reference to Corals and Coral reefs.

**7. Phylum Platyhelminthes (04)**

7.1 Introduction to Phylum Platyhelminthes

7.2 Salient features of Phylum Platyhelminthes

7.3 Classification of Phylum Platyhelminthes up to classes with two examples each class (names of examples only).

Class: Turbellaria (e.g: *Dugesia*, *Bipallium*)

Class: Trematoda (e.g: *Fasciola hepatica*, *Schistosoma haematobium*)

Class Cestoda: (*Taenia solium* (pork tape worm), *Echinococcus granulosus* (dog tapeworm))

7.4 Parasitic adaptations in Platyhelminthes: structural and physiological.

7.5 Economic importance of Platyhelminthes

**Course Title: Animal Ecology**

**Course Code: ZO 112**

**Semester I**

**(2 Credits-30 Lectures)**

**Learning outcomes for the course:**

- The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population.
- To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature.
- The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community.
- The learner will be able to link the intricacies of food chains, food webs and link it with human life for its betterment and for non-exploitation of the biotic and abiotic components.
- The working in nature to save environment will help development of leadership skills to promote betterment of environment.



**ZO 112: Animal Ecology****(2 Credits-30 Lectures)**

<b>No.</b>	<b>Topic &amp; Content</b>	<b>Number of lectures</b>
1.	<b>Introduction to Ecology</b> 1.1 Concepts of Ecology, Environment, Population, Community, Ecosystem, Biosphere, Autecology and synecology.	<b>(02)</b>
2.	<b>Ecosystem</b> 2.1 Types of ecosystems: Aquatic (Freshwater, estuarine, Marine and terrestrial (Forest, Grassland and Desert) 2.2 Structure and Composition of Ecosystem (Abiotic components and biotic components. 2.3 Food chain: Detritus and grazing food chains, Food web, Energy flow through the ecosystem, Ecological pyramids: Number, Biomass, and Energy. 2.4 concept of Eutrophication in lakes and rivers.	<b>(08)</b>
3	<b>Population</b> 3.1 Characteristic of population: Density, Natality, Mortality, Fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. 3.2 Exponential and logistic growth, 3.3 Population regulation – density-dependent and independent factors. Population interactions, Gause's Principle with laboratory and field interactions, 3.4 Quadrant, line and belt transect methods.	<b>(08)</b>
4.	<b>Community</b> 4.1 Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Eco tone and edge effect; Ecological succession with one example.	<b>(07)</b>
5.	<b>Animal interactions</b> 5.1 Introduction to Animal interactions 5.2 Types of Animal interactions with at least to suitable examples of each 5.2.1-Competition: Interspecific and intraspecific	<b>(05)</b>

### 5.2.2- Beneficial Associations:

Commensalism (remora fish on shark, Cattle egrets on livestock),

Mutualism (Termite and *Trichonympha*, bees and flowers, cleaning symbiosis in fish by prawns.

5.3 Antagonistic associations: Parasitism (*Ascaris* and man, lice and humans), Prey predation (Lion and deer).

## Course Title: Zoology Practical Paper

Course Code: ZO113

Semester I

(1.5 Credits-45 Hours)

### Animal Diversity –I

1. Museum Study of phylum Protozoa: *Euglena*, *Paramecium*, *Amoeba*, *Plasmodium* sp.
2. Museum study of Phylum Porifera: *Sycon*, *Euplectella*, *Chalina*, *Spongilla*.
3. Museum study of phylum Cnidaria: *Hydra*, *Physalia*, *Aurelia*, *Metridium*.
4. Museum Study of phylum Platyhelminthes: *Planeria*, *Faciola hepatica*, *Taenia solium*
5. Study of *Paramecium*: Culture, External morphology, Conjugation and Binary fission.
6. Study of permanent slides: Spicules and Gemmules in Sponges, T.S. of *Sycon*, T.S. of *Hydra*, *Taeniasolium*: Scolex, Gravid proglottid.
7. Identification of any three museum specimen with help of taxonomic identification key.
8. Visit to Zoological survey of India/ Museum/National Park.

### Animal Ecology:

1. Estimation of Dissolved oxygen from given water sample.
2. Estimation of Water Alkalinity from given water sample.
3. Study of animal community structure by quadrat method (Field or Simulation).
4. Determination of density, frequency and abundance of species by quadrat method.
5. Study of microscopic fauna of freshwater ecosystem (from pond).
6. Estimation of water holding capacity of given soil sample.
7. Estimation of dissolved and free carbon dioxide from water sample.
8. Study of Eutrophication in lake/river.

**Course Title: Animal Diversity –II****Course Code: ZO-121:****Semester II****(2 credits-30 lectures)**

<b>No.</b>	<b>Title &amp; Contents</b>	<b>Number of lectures</b>
1.	<p><b>Phylum Aschelminthes</b></p> <p>1.1 Introduction to phylum Aschelminthes</p> <p>1.2 Salient features of Phylum Aschelminthes</p> <p>1.3 Classification of Phylum Aschelminthes (Class Nematoda only with two examples – <i>Ascaris lumbricoides</i> (common round worm), <i>Wuchereria bancrofti</i> (Elephantiasis)).</p> <p>1.4 Economic importance of class Nematoda.</p>	<b>(04)</b>
2.	<p><b>Phylum Annelida</b></p> <p>2.1 Introduction to Phylum Annelida</p> <p>2.2 Salient features of Phylum Annelida.</p> <p>2.3 Classification of Phylum Annelida up to classes with examples of following classes (names of examples only).</p> <p>Class Polychaeta ( e.g: <i>Nereis pelagica</i> (<i>neries</i>/ sand worm, <i>Aphrodita aculeata</i> (=Aphrodite/ seamouse)</p> <p>Class Oligochaeta (e.g.: <i>Pheritima posthuma</i> (earthworm),</p> <p>Class Hirudinea (e.g: <i>Hirudinaria granulosa</i> common cattle leech)</p> <p>2.4 Economic importance of Annelida with reference to earthworms as friends of farmers and in their role in vermicomposting.</p>	<b>(06)</b>
3.	<p><b>Phylum Arthropoda</b></p> <p>3.1 Introduction to Phylum Arthropoda</p> <p>3.2 Salient features of Phylum Arthropoda</p> <p>3.3 Classification of Phylum Arthropoda with specific classes and mentioned examples (names only)</p> <p>Class:Crustacea:<i>Palaemon palaemon</i> (Prawn) <i>Brachyura</i> spp. crabs)</p> <p>Class: Chilopoda: <i>Scolopendra</i> sp. (centipede)</p> <p>Class: Diplopoda: <i>Julus</i> sp. (millipede)</p>	<b>(06)</b>

Class Insecta: *Periplaneta americana* (American Cockroach),  
*Anopheles stephensi* (mosquito).

Class: Arachnida- Spiders, *Buthus sp* (scorpion)

3.4 mouth parts in insects: Mandibulate (cockroach), Piercing and sucking (female *Anopheles* mosquito), chewing and lapping type (honey bee)

3.5 Economic importance of Arthropoda

Useful Insects: Honey bee, Lac insect, Silkworm.

Harmful insects: Female *Anopheles* mosquito, Red cotton bug, Rice weevil

4. **Phylum Mollusca** (06)

4.1 Introduction to Phylum Mollusca

4.2 Salient features of Phylum Mollusca

4.3 Classification of Phylum Mollusca with specific classes and mentioned examples (names only)

Class Gastropoda e.g *Pila globosa* (apple snail)

Class Pelecypoda e.g *Lamellidens marginalis*(Bivalve)

Class Polyplacophora e.g *Chiton*

Class: Cephalopoda:e.g: *Octopus vulgaris* (common octopus), *Sepia officinalis* (common Cuttle fish)

4.4 Economic importance of Mollusca.

5. **Study of Phylum Echinodermata** (08)

5.1 Introduction to Phylum Echinodermata

5.2 Salient features of Phylum Echinodermata.

5.3 Classification of Phylum Echinodermata with specific classes and mentioned examples (names only)

Class Asteroidea (*Asterias rubens* sea stars or starfish)

Class: Holothuroidea. *Holothuria sp.* sea cucumbers)

Class: Echinoidea (*Echinus esculentis* common sea urchins)

Class: Crinoidea (sea lilies or feather stars)

5.4 **Type study: *Asterias rubens* (Sea Star):** Classification, Habit  
Habitat, External Morphology, Digestive system, Water vascular  
System and autotomy and regeneration

5.5 Pedicellaria in Echinodermata: straight, crossed, valvate,  
tridactylous, globigerous.

5.6 Economic importance of Echinodermata.

**Course Title: Cell biology**

**Course Code: ZO122:**

**Semester II**

**(2 credits-30 lectures)**

**Learning outcomes for Cell Biology**

- The learner will understand the importance of cell as a structural and functional unit of life.
- The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development.
- The dynamism of bio membranes indicates the dynamism of life. Its working mechanism and precision are responsible for our performance in life.
- The cellular mechanisms and its functioning depends on endo-membranes and structures. They are best studied with microscopy.

**ZO122: Cell biology**

**(2 credits-30 lectures)**

**No. Title & Contents**

**Number of lectures**

1. **Introduction:**

**(04)**

1.1 Introduction cell biology,

1.2 Cell as basic unit of life.

1.3 Importance of Cell Biology and its applications in industry.

**Overview of Cells**

1.3 Introduction to Prokaryotic and Eukaryotic cells.

1.4 Structure and function of Prokaryotic (*E. coli*)

1.5 Structure and function of Eukaryotic cells (Animal and Plant Cell)

- 2 **Techniques in Cell Biology:** (04)
- 3.1 Introduction
- 3.2 Microscopy: Basic Principle, Simple, Compound and applications of Electron Microscope.
- 3.3 Stains and dyes:  
Types of Stain: Acidic, basic and neutral.  
Dye (Preparation and chemistry of dyes not expected)
- 3.4 Micrometry.
- 3 **Plasma Membrane:** (06)
- 4.1 Introduction
- 4.2 Structure of plasma membrane: Fluid mosaic model.
- 4.3 Transport across membranes: Active and Passive transport, Facilitated transport, exocytosis, endocytosis, phagocytosis – vesicles and their importance in transport.
- 4.4 Other functions of Cell membrane in brief Protection, cell recognition, shape, storage, cell signalling.
- 4.5 Cell Junctions: Tight junctions, gap junctions, Desmosomes.
- 4 **Nucleus: Structure and function** (04)
- 5.1 Introduction to Nucleus
- 5.2 Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleoplasm, Nucleolus
- 5.3 Chromatin: Eu-chromatin and Hetro-chromatin, nature and differences.
- 5.4 Functions of nucleus
5. **Endomembrane System** (04)
- 6.1 Introduction
- 6.2 Structure, location and Functions: Endoplasmic Reticulum, Golgi apparatus, Lysosomes and vacuoles.
7. **Mitochondria and Peroxisomes** (03)
- 7.1 Introduction
- 7.2 Mitochondria: ultrastructure and function of mitochondrion.

7.3 Peroxisomes

**Cell Division**

**(05)**

7.1 Introduction

7.2 Cell cycle (G1, S, G2, M phases),

7.3 Mitosis.

7.4 Meiosis.

**Course Title: Zoology Practical Paper**

**Course Code: ZO123**

**Semester II**

**(1.5 Credits-45 Hours)**

**Animal Diversity –II**

1. Museum study of Phylum Aschelminthes: *Ascaris lumbricoides*,
2. Museum study of phylum Annelida: *Neries*, Earthworm, Leech.
3. Museum study of phylum Arthropoda: Prawn, Cockroach, Centipede, Millipede, Crab
4. Museum study of phylum Mollusca: *Pila*, *Chiton*, Bivalve, Octopus.
5. Museum study of phylum Echinodermata: Sea Star, Sea urchin, Brittle Star, sea cucumber.
6. Study of permanent slides: Mouthparts of Insects -Mandibulate, Piercing and sucking, Chewing and Lapping.
7. Types of Shells in Mollusca. *Pila*, Bivalve, *Chiton*, *Sepia*.
8. Economic importance of honey bees, Lac insects silk worms, red cotton bug, *Anopheles* mosquito
9. Earthworm: vermicomposting bin preparation and maintenance.
10. Visit to a vermicomposting unit/ field for insect pest collection and its identification

**Cell Biology**

1. Study of Microscope: Simple and Compound
2. Micrometry: Measurement of microscopic objects
3. Study of cell: Preparation of temporary mount of human buccal epithelial cells.
4. Preparation of blood smears to observe the blood cells
5. Temporary preparation of mitotic cell from onion roots
6. Study of Cell organelles (any three) by using microphotographs

## Recommended Reference Books

### Animal Diversity – I and II

1. Anderson, D.T (Ed) 1988: Invertebrate Zoology, Oxford University Press.
2. Barnes, R.D. (1982). Invertebrate Zoology, V Edition. Holt Saunders International Edition.
3. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). The Invertebrates: A New Synthesis, III Edition, Blackwell Science
4. Barrington, E.J.W. (1979). Invertebrate Structure and Functions. II Edition, E.L.B.S. and Nelson
5. Boradale, L.A. and Potts, E.A. (1961). Invertebrates: A Manual for the use of Students. Asia Publishing Home.
6. Brusca, R.C and Brusca, G. J (2003): Invertebrate (2<sup>nd</sup> ed.) Sinauer Associates Inc., Publishers Sunderland.
7. Hadzi, J (1963): The Evolution of Metazoa, Macmillan Newyork.
8. Hyman, L. H (1940): Invertebrates Vol I, Protozoa through ctenophore.
9. Hyman. L. H (1955): The Invertebrates Vol: IV, Echinodermata, the coelomate bilateria, Mcgraw Hill, Newyork.
10. Modern Text-Book of zoology, Vertebrates. By Kotpal, RL., Rastogi and Co., Meerut.
11. Nigam H.C., Zoology of Chordates, Vishal Publication, Jalandhar-144008.
12. Phylum Protozoa to Echinodermata (series) by Kotpal, RL. Rastogi and Co., Meerut
13. Parker T.J and W.A Haswell (1972): A text book of Zoology, Vol –I (7<sup>th</sup> edition by Marshall and Williams) Mcmillan Press ltd.
14. Jordan, E.L. and P.s.Verma Invertebrate Zoology, S. Chand and Co., Ltd. Ram Nagar, New Delhi.
15. Russel Hunter: - A Biology of higher invertebrates, MacMillon Co. Ltd. London



**Animal Ecology**

1. Colinvaux, P. A. (1993). Introduction to Ecology. II Edition. Wiley, John and Sons, Inc.
2. Krebs, C. J. (2001). Ecology: The Experimental Analysis of Distribution and Abundance, 6th Edition, ©2009, Pearson
3. Odum, E.P., (2008). Fundamentals of Ecology. Indian Edition. Brooks/Cole
4. Robert Leo Smith Ecology and field biology Harper and Row publisher
5. Ricklefs, R.E., (2000). Ecology. V Edition. Chiron Press
6. Sharma P.D. (2002) Ecology and Environment, Himalaya Publication

**Cell Biology**

1. Karp, G. (2010). *Cell and Molecular Biology: Concepts and Experiments*. VI Edition John Wiley and Sons. Inc.
2. De Robertis, E.D.P. and De Robertis, E.M.F. (2006). *Cell and Molecular Biology*. VII Edition. Lippincott Williams and Wilkins, Philadelphia.
3. Cooper, G.M. and Hausman, R.E. (2009). *The Cell: A Molecular Approach*. V Edition. ASM Press and Sunderland, Washington, D.C.; Sinauer Associates, MA.
4. Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. (2009). *The World of the Cell*. VII Edition. Pearson Benjamin Cummings Publishing, San Francisco.
5. Bruce Albert, Bray Dennis, Levis Julian, Raff Martin, Roberts Keith and Watson James (2008). *Molecular Biology of the Cell*, V Edition, Garland publishing Inc., New York and London
6. Inside the Cell (2005); US Department of Health Sciences, National Institute of Health, Natinal institute of General Medicine Sciences.
7. Lodish, H., D. Baltimore, A. Berk, L. Zipursky, M. Matsudaira and J. Darnell. (2010).
8. Molecular Cell Biology, Eds. 3, Scientific American & W. H. Freeman. New York.
9. Powar C B.: Cell Biology, Himalaya Publication, Meerut

*Note: Latest editions of the recommended books may be referred.*



**Savitribai Phule Pune University**  
*(Formerly University of Pune)*

**Three Year B.Sc. Degree Program in Botany**  
**(Faculty of Science & Technology)**

**S.Y.B.Sc Botany**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2020- 2021**

**Title of the Course: B. Sc Botany****1. Structure of Course:**

<b>Structure B.Sc. Botany syllabus</b>					
Year	Semester	Course Type	Course code	Course Name	Credits
1	1	Compulsory Course	BO 111	Plant life and utilization I	2
			BO 112	Plant morphology and Anatomy	2
			BO 113	Practical based on BO 111 & BO 112	1.5
	2	Compulsory Course	BO 121	Plant life and utilization II	2
			BO 122	Principles of plant science	2
			BO 123	Practical based on BO 121 & BO 122	1.5
2	3	Compulsory Course	BO 231	<b>Taxonomy of Angiosperms and Plant Ecology</b>	2
			BO 232	<b>Plant Physiology</b>	2
			BO 233	<b>Practical based on BO 231 &amp; BO 232</b>	2
	4	Compulsory Course	BO 241	<b>Plant Anatomy and Embryology</b>	2
			BO 242	<b>Plant Biotechnology</b>	2
			BO 243	<b>Practical based on BO 241 &amp; BO 242</b>	2
3	5	Discipline Specific Elective Course	BO 351	Botany Theory Paper 1	2
			BO 352	Botany Theory Paper 2	2
			BO 353	Botany Theory Paper 3	2
			BO 354	Botany Theory Paper 4	2
			BO 355	Botany Theory Paper 5	2
			BO 356	Botany Theory Paper 6	2
			BO 357	Botany Practical Paper 1	2
			BO 358	Botany Practical Paper 2	2
		BO 359	Botany Practical Paper 3	2	
		Skill Enhancement course	BO 3510	Botany Theory Paper 7	2
			BO 3511	Botany Theory Paper 8	2
3	6	Discipline Specific Elective Course	BO 361	Botany Theory Paper 1	2
			BO 361	Botany Theory Paper 2	2
			BO 362	Botany Theory Paper 3	2
			BO 363	Botany Theory Paper 4	2
			BO 364	Botany Theory Paper 5	2
			BO 365	Botany Theory Paper 6	2
			BO 366	Botany Practical Paper 1	2
			BO 367	Botany Practical Paper 2	2
		BO 368	Botany Practical Paper 3	2	
		Skill Enhancement course	BO 3610	Botany Theory Paper 7	2
			BO 3611	Botany Theory Paper 8	2

**2. Equivalence of Previous Syllabus:**

<b>Old Course (2014 Pattern)</b>	<b>New Course (2020 CBCS Pattern)</b>
BO-211: Taxonomy of Angiosperms and Plant community	BO 231: Taxonomy of Angiosperms and Plant Ecology
BO-212: Plant Physiology	BO 232: Plant Physiology
BO-221: Plant Anatomy and Embryology	BO 241: Plant Anatomy and Embryology
BO-222: Plant Biotechnology	BO 242: Plant Biotechnology
Practical based on theory courses (Paper I and Paper II)	Semester III: Practical based on BO 231 & BO 232 Semester IV: Practical based on BO 241 & BO 242

**S.Y.B.Sc. Botany CBCS Pattern  
(Semester III, Paper I) 2020-2021**

**BO 231: Taxonomy of Angiosperms and Plant Ecology - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
<b>Credit-I</b>		<b>15</b>
<b>1.</b>	<b>Introduction to Angiosperms Taxonomy</b> Definition, scope, objectives and importance of taxonomy Exploration, Description, Identification, Nomenclature and classification Concept of Systematics with brief historical background	<b>02</b>
<b>2.</b>	<b>Systems of classification</b> Comparative account of various systems of classification Artificial system- Carl Linnaeus Natural system- Bentham and Hooker Phylogenetic system- Engler and Prantl APG system- A brief review	<b>05</b>
<b>3.</b>	<b>Study of Plant Families</b> Study of following families with reference to systematic position (As per Bentham and Hooker's system of classification), salient features, floral formula, floral diagram and any five examples with their economic importance – Annonaceae, Brassicaceae, Myrtaceae, Rubiaceae, Solanaceae, Apocynaceae, Nyctaginaceae and Amaryllidaceae	<b>08</b>
<b>Credit-II</b>		<b>15</b>
<b>4.</b>	<b>Botanical Nomenclature</b> Concept of nomenclature, brief history, Binomial nomenclature International Code for Nomenclature of Algae, Fungi and Plants (ICN)- Principles, Rules and Recommendations; 'Type' specimen and its types (Holotype, Paratype, Isotype, Lectotype, Neotype). Concept of Typification. Ranks and endings of taxa names, Coining of Genus and Species names Single, double and multiple authority citations	<b>05</b>
<b>5.</b>	<b>Introduction to ecology</b> Definition, concept, scope, and interdisciplinary approach, autecology and synecology. Species diversity: definition, concept, scope, and types: Alpha, Beta and Gamma diversity. Methods of vegetation sampling: quadrat method, transect method, plot less method Genetic Diversity: definition, nature and origin of genetic variations Species Diversity: definition, origin of species diversity, diversity indices, species abundance Ecosystem Diversity: definition, major ecosystem types of the world, Hotspots in India – concept and basis of 'hotspot' identification.	<b>06</b>
<b>6.</b>	<b>Ecological grouping of the plants</b> Ecological grouping of the plants with reference to their significance of adaptive external and internal features: a) Hydrophytes, b) Mesophytes c) Xerophytes d) Halophytes with examples.	<b>04</b>

**References-**

1. Balfour Austin (2016). Plant Taxonomy. Syrawood Publishing House
2. Chapman, J.L. and Reiss, M.J. (1998). Ecology: Principles and applications. Cambridge, University Press.
3. Chopra G.L. (1984). Angiosperms: Systematics and Life-Cycle., Pradeep Publications
4. Cooke, Theodore (1903-8). The Flora of the Presidency of the Bombay Vol. I, II, III (Repr. ed), Botanical Survey of India.
5. Cronquist, A. (1968). The Evolution and Classification of Flowering Plants. Thomas Nel and Sons Ltd. London.
6. Datta S.C. (1988). Systematic Botany. New Age Publ.
7. Davis P.H and V.H Heywood (1963). Principles of Angiosperm Taxonomy. Oliver and Boyd, London.
8. Heywood V.H. (1967). Plant Taxonomy, Hodder & Stoughton Educational, London.
9. Judd Walter S., Campbell, C. S., Kellogg, E. A., Stevens, P.F. and M. J. Donoghue. (2008). Plant Systematics- A Phylogenetic Approach. Sinauer Associates, INC, Publishers.Sunderland, Massachusetts, USA.
10. Kormondy Edward (1995). Concepts of Ecology, Pearson Publ.
11. Lawrence G.H.M. (1955). An Introduction to Plant Taxonomy. McMillan, New York.
12. Lawrence, G.H.M. (1951). Taxonomy of Vascular Plants. McMillan, New York.
13. Michael P. (1984). Ecological Methods for field and Laboratory investigations TMH Co. ltd. Bombay.
14. Mondol A.K. (2016) Advanced Plant Taxonomy, New Central Book Agency (NCBA)
15. Naik V.N. (1988) Taxonomy of Angiosperms. Oxford and IBH
16. Odum E.P., (2004). Fundamentals of Ecology, Publ. Cengage Learning, Australia
17. Pande B.P. (1997). Taxonomy of Angiosperms. S. Chand.
18. Pande B.P. (2001) Taxonomy of Angiosperms. S. Chand.
19. Radford A.E. 1986. Fundamentals of Plant Systematics, Harper and Row N Y.
20. Santapau H. (1953). The Flora of Khandala on the Western Ghats of India. BSI
21. Sharma O.P. (2011), Plant Taxonomy, Tata Mc grow Hill
22. Shivrajan V.V. & N.K.P. Robson (1991). Introduction to Principles of Plant Taxonomy. Cambridge Univ. Press
23. Shukla Priti and Shital Mishra (1982). An introduction to Taxonomy of angiosperms. Vikas Publ.
24. Simpson, M.G. (2010). Plant Systematics. Elsevier, Amsterdam.
25. Singh Gurucharan (2005). Systematics: Theory and Practice. Oxford IBH.
26. Singh J.S., S.P. Singh, and S.R. Gupta (2006). Ecology, Environment and Resource Conservation. Anamaya Publ. New Delhi.
27. Singh N.P. (2001) Flora of Maharashtra Volume-II BSI, Kolkatta
28. Singh N.P. (2003) Flora of Maharashtra Volume-III BSI, Kolkatta
29. Singh N.P., S. Karthikeyan (1996) Flora of Maharashtra Volume-I, BSI, Kolkatta
30. Singh V. and D.K. Jain, (1981). Taxonomy of Angiosperms. Rastogi Publication, Meerut.
31. Singh, Gurcharan. (2012). Plant Systematics: Theory and Practice. Completely revised and enlarged 3rd edition. Oxford & IBH, New Delhi.
32. Stuessy, Tod F. (2009). Plant Taxonomy: The Systematic Evaluation of Comparative Data, second edition. Columbia University Press.

33. Swingle D.B. (1946). A Text book of Systematic Botany. McGraw Hill Book Co. New York.
34. Takhtajan A. (1969). Flowering Plants: Origin and Disposal.

#### IMPORTANT WEBSITES

THE FAMILIES OF FLOWERING PLANTS- L. Watson and M.J. Dallwitz

<https://www.delta-intkey.com/angio/index.htm>

ANGIOSPERM PHYLOGENY WEBSITE, version 14.

<http://www.mobot.org/MOBOT/research/APweb/>

THE PLANTS OF THE WORLD ONLINE PORTAL

<http://www.plantsoftheworldonline.org/>

INTERNATIONAL PLANT NAME INDEX (IPNI)

<https://www.ipni.org/>

TROPICOS

<https://www.tropicos.org/home>

BIODIVERSITY HERITAGE LIBRARY

<https://www.biodiversitylibrary.org/>

BOTANICUS DIGITAL LIBRARY

<https://www.botanicus.org/>

INTERNET ARCHIVE- DIGITAL LIBRARY

<https://archive.org/>

DATABASE OF PLANTS OF INDIAN SUBCONTINENT

<https://sites.google.com/site/efloraofindia/>

BOTANICAL SURVEY OF INDIA

[https://bsi.gov.in/content/1416\\_1\\_FloraofIndia.aspx](https://bsi.gov.in/content/1416_1_FloraofIndia.aspx)

FLOWERS OF INDIA

<http://www.flowersofindia.net/>

eFLORAS OF WORLD

<http://www.efloras.org/>

**S.Y.B.Sc. Botany CBCS Pattern  
(Semester III, Paper II) 2020-2021  
BO 232: Plant Physiology - 2 Credits (30 Lectures)**

**Credit I:**

- |  |           |
|--|-----------|
| <b>1. Introduction to Plant Physiology</b>   | <b>2L</b> |
| Scope and applications of plant physiology   |           |
| <b>2. Absorption of water</b>  | <b>3L</b> |
| 2.1 Role of water in plants  |           |
| 2.2 Mechanisms of water absorption with respect to crop plants   |           |
| 2.3 Factors affecting rate of water absorption   |           |
| <b>3. Ascent of sap</b>  | <b>3L</b> |
| 3.1 Introduction and definition.   |           |
| 3.2 Transpiration pull or cohesion-tension theory, evidences and objections                                      |           |
| 3.3 Factors affecting ascent of sap  |           |
| <b>4. Transpiration</b>  | <b>7L</b> |
| 4.1 Definition   |           |
| 4.2 Types of transpiration – cuticular, lenticular and stomatal  |           |
| 4.3 Structure of stomata   |           |
| 4.4 Mechanism of opening and closing of stomata –Steward’s hypothesis, active K <sup>+</sup> transport mechanism |           |
| 4.5 Factors affecting the rate of transpiration  |           |
| 4.6 Significance of transpiration  |           |
| 4.7 Antitranspirants   |           |
| 4.8 Guttation  |           |
| 4.9 Exudation  |           |
| <b>Credit II:</b>  |           |
| <b>5. Nitrogen metabolism</b>  | <b>7L</b> |
| 5.1 Introduction and role of nitrogen in plants  |           |
| 5.2 Nitrogen fixation by <i>Rhizobium</i> and BGA  |           |
| 5.2.1 Symbiotic nitrogen fixation, nitrogenase enzyme- structure and function                                    |           |
| 5.2.2 Non-symbiotic nitrogen fixation  |           |
| 5.3 Importance and production technique of BGA   |           |
| 5.4 Denitrification, ammonification and nitrification  |           |
| 5.5 Reductive amination and transamination   |           |
| <b>6. Seed dormancy and germination</b>  | <b>4L</b> |
| 6.1 Definition, types of seed dormancy and germination   |           |
| 6.2 Methods to break seed dormancy   |           |
| 6.3 Metabolic changes during seed germination  |           |
| 6.4 Role of phytohormones to improve seed germination  |           |
| 6.5 Vigor Index  |           |
| <b>7. Physiology of flowering</b>  | <b>4L</b> |
| 7.1 Photoperiodism – Concept, definition, short day plants, long day plants and day neutral plants.              |           |



- 7.2 Phytochrome theory, role of phytohormones in induction and inhibition of flowering
- 7.3 Applications of photoperiodism
- 7.4 Vernalization–concept and definition, mechanism of vernalisation, applications of vernalisation and devernialization

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**S.Y.B.Sc. Botany CBCS Pattern**  
**Practical (Semester III Paper III) 2020-2021**  
**BO 233: Practical based on BO 231 & BO 232**

**Practical based on Taxonomy of Angiosperms and Plant Ecology, and Plant Physiology**

Sr. No.	Title	No. of Practical
<b>Taxonomy of Angiosperms and Plant Ecology</b>		
1	Study of tools of taxonomy and ecological instruments (any four each)	1
2	Description of flowering plant in botanical terms	1
3	Study of plant families (any four)	3
4	Study of ecological adaptations in Hydrophytes with any two examples	1
5	Study of ecological adaptations in Xerophytes with any two examples	1
6	Study of vegetation by list count quadrat method.	1
<b>Plant Physiology</b>		
7	Perform phytochemical test for starch and protein in germinating and non germinating seeds	1
8	Isolation of Leaf Protein Concentration (LPC) from suitable plant material.	1
9	Determination of Diffusion Pressure Deficit (DPD)	1
10	Determine rate of transpiration under different conditions of Sunlight, Shade and Wind	1
11	Demonstration of the following a. Commercial biofertilizers b. Imbibition in seeds c. Ringing experiment d. Arc Auxanometer e. Spectrophotometer f. Nitrogen fixing bacteria / BGA (specimen/ slide)	1
12	Calculate seed germination percentage and vigor index	1
13	Botanical excursion tour and visit to Floriculture industry / Soil testing center / Seed testing center	1

**N.B. Botanical excursion tour and submission of report along with herbarium of any five weeds of the following (List of Weeds attached).**

**List of weeds**

**Acanthospermum hispidum DC. Asteraceae**

**Aerva javanica (Burm.f.) Juss. ex Schult. Amaranthaceae**

**Aeschynomene americana L. Fabaceae Tropical America**

**Ageratum conyzoides L. Asteraceae America**

**Alternanthera paronychioides St. Hill. Amaranthaceae Tropical America**

**Alternanthera philoxeroides (Mast.) Griseb. Amaranthaceae America**

**Alternanthera pungens Kunth Amaranthaceae Tropical America**

**Alternanthera sessilis (L.) R.Br. ex DC. Amaranthaceae Tropical America**

**Amaranthus spinosus L. Amaranthaceae Tropical America**

**Antigonon leptopus Hk. & Arn. Polygonaceae America**

**Argemone mexicana L. Papaveraceae West Indies**

**Asclepias curassavica L. Apocynaceae Tropical America**  
**Bidens pilosa L. Asteraceae Tropical America**  
**Blainvillea acmella (L.) Philipson Asteraceae Tropical America**  
**Blumea eriantha DC. Asteraceae Tropical America**  
**Blumea lacera (Burm.f.) DC. Asteraceae Tropical America**  
**Boerhavia erecta L. Nyctaginaceae Tropical America**  
**Cardamine hirsuta L. Brassicaceae Tropical America**  
**Cassia absus L. Caesalpiniaceae Tropical America**  
**Cassia occidentalis L. Caesalpiniaceae South America**  
**Cassia pumila Lam. Caesalpiniaceae Tropical America**  
**Cassia tora L. Caesalpiniaceae South America**  
**Celosia argentea L. Amaranthaceae Tropical America**  
**Chrozophora rottleri (Geis.) Spreng. Euphorbiaceae Tropical Africa**  
**Cleome viscosa L. Capparaceae Tropical America**  
**Conyza canadensis (L.) Cronquist Asteraceae South America**  
**Coronopus didymus (L.) Smith Brassicaceae South America**  
**Cronton bonplandianum Baillon Euphorbiaceae South America**  
**Crotalaria pallida Dryand Fabaceae Tropical America**  
**Crotalaria retusa L. Fabaceae Tropical America**  
**Cryptostegia grandiflora R.Br. Apocynaceae Madagascar**  
**Cuscuta chinensis Lam. Cuscutaceae Mediterranean**  
**Cuscuta reflexa Roxb. Cuscutaceae Mediterranean**  
**Cyperus difformis L. Cyperaceae Tropical America**  
**Cyperus iria L. Cyperaceae Tropical America**  
**Datura innoxia Mill. Solanaceae Tropical America**  
**Dicoma tomentosa Cass. Asteraceae Tropical America**  
**Digera muricata (L.) Mart. Amaranthaceae North America**  
**Eclipta prostrata (L.) L. Asteraceae Tropical America**  
**Eichhornia crassipes (Mart.) Solms Pontederiaceae Tropical America**  
**Emilia sonchifolia (L.) DC. Asteraceae Tropical America**  
**Eupatorium adenophorum Spreng. Asteraceae Central America**  
**Eupatorium odoratum L. Asteraceae South America**  
**Euphorbia heterophylla L. Euphorbiaceae Tropical America**  
**Euphorbia hirta L. Euphorbiaceae Tropical America**  
**Galinsoga parviflora Cav. Asteraceae Tropical America**  
**Hyptis suaveolens (L.) Poit. Lamiaceae South America**  
**Ipomoea carnea Jacq. Convolvulaceae Tropical America**  
**Ipomoea hederifolia L. Convolvulaceae Tropical America**  
**Ipomoea obscura (L.) Ker Gawl. Convolvulaceae Tropical Africa**  
**Ipomoea pes-tigridis L. Convolvulaceae Tropical Africa**  
**Lagascea mollis Cav. Asteraceae Tropical America**  
**Lantana camara L. Verbenaceae Tropical America**  
**Malachra capitata (L.) L. Malvaceae Tropical America**

**Malvastrum coromandelianum (L.) Garcke Malvaceae Tropical America**  
**Martynia annua L. Pedaliaceae Tropical America**  
**Mecardonia procumbens (Mill.) Small Scrophulariaceae Tropical America**  
**Mikania micrantha Kunth Asteraceae Tropical America**  
**Oxalis corniculata L. Oxalidaceae Europe**  
**Parthenium hysterophorus L. Asteraceae Tropical America**  
**Physalis minima L. Solanaceae Tropical America**  
**Pistia stratiotes L. Araceae Tropical America**  
**Portulaca oleracea L. Portulacaceae South America**  
**Prosopis juliflora (Sw.) DC. Mimosaceae Mexico**  
**Ruellia tuberosa L. Acanthaceae Tropical America**  
**Scoparia dulcis L. Scrophulariaceae Tropical America**  
**Solanum nigrum L. Solanaceae Tropical America**  
**Solanum torvum Sw. Solanaceae West Indies**  
**Sonchus oleraceus L. Asteraceae Mediterranean**  
**Spilanthes radicans Jacq. Asteraceae South America**  
**Synedrella nodiflora (L.) Gaertn. Asteraceae West Indies**  
**Tridax procumbens L. Asteraceae Tropical America**  
**Waltheria indica L. Sterculiaceae Tropical America**  
**Xanthium indicum Koenig Asteraceae Tropical America**  
**Youngia japonica (L.) DC. Asteraceae South America**

**SEMESTER IV****S.Y.B.Sc. Botany CBCS Pattern  
(Semester IV, Paper I) 2020-2021****BO 241: Plant Anatomy and Embryology- 2 Credits (30 Lectures)**

<b>Credit-I Plant anatomy:</b>	<b>(15 Lectures)</b>
<b>1. Introduction</b>	<b>2L</b>
1.1 Definition	
1.2 Scope of plant anatomy	
<b>2. Epidermal tissue system</b>	<b>3L</b>
2.1 Structure, types and functions of epidermis	
2.2 Structure, types and functions of Stomata	
2.3 Epidermal outgrowths- non-glandular and glandular	
2.4 Motor cells	
<b>3. Mechanical tissue system</b>	<b>3L</b>
3.1 Principles involved in distribution of mechanical tissues with one example each	
a) Inflexibility,	
b) Incompressibility,	
c) Inextensibility and	
d) Shearing stress	
3.2 Vascular tissue system: Structure and function of xylem, phloem and cambium	
<b>4. Normal secondary growth</b>	<b>3L</b>
4.1 Introduction	
4.2 Normal secondary growth in dicotyledonous stem	
4.3 Development of annual rings, periderm, bark, tyloses and lenticel	
<b>5. Anomalous secondary growth</b>	<b>4L</b>
5.1 Introduction	
5.2 Causes of anomalous secondary growth	
5.3 Anomalous secondary growth in:	
a) Dicotyledonous stem ( <i>Bignonia</i> ),	
b) Dicotyledonous root ( <i>Raphanus</i> ),	
c) Monocotyledonous stem ( <i>Dracaena</i> )	
<b>Credit-II Plant Embryology</b>	<b>(15 Lectures)</b>
<b>7. Introduction</b>	<b>1L</b>
7.1 Definition and scope of plant embryology	
<b>8. Microsporangium and male gametophyte</b>	<b>4L</b>
8.1 Structure of tetrasporangiate anther	
8.2 Types of tapetum	
8.3 Sporogenous tissue	
8.4 Microsporogenesis: process and its types	
8.5 Types of microspore tetrad	
8.6 Male gametophyte: structure and development of male gametophyte	

<b>9 Megasporangium and female gametophyte</b>	<b>4L</b>
9.1 Structure	
9.2 Types of ovules	
9.3 Types of megaspore tetrads	
9.4 Female gametophyte: structure of typical embryo sac	
9.5 Types of embryo sacs – monosporic, bisporic and tetrasporic	
<b>10. Pollination and Fertilization:</b>	<b>3L</b>
10.1 Introduction and definition	
10.2 Types of pollination	
10.3 Germination of pollen grain	
10.4 Entry of pollen tube- porogamy, mesogamy and chalazogamy	
10.5 Double fertilization and its significance.	
<b>11. Endosperm and embryo</b>	<b>3L</b>
11.1 Endosperm: Types – nuclear, helobial and cellular.	
11.2 Structure of Dicotyledonous and Monocotyledonous embryo.	

**References:**

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6. Esau, Plant Anatomy, Wiley Toppan Co. California, USA
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9. Bhojwani S S and Bhatnagar S P, An Embryology of Angiosperms
10. Maheshwari P, An introduction to Embryology of Angiosperm
11. Nair P K K Essentials of Palynology.

**S.Y.B.Sc. Botany CBCS Pattern  
(Semester IV, Paper II) 2020-2021  
BO 242: Plant Biotechnology (2 Cr- 30 Lectures)**

**Credit I:**

<b>Chapter 1 Introduction to Plant Biotechnology</b>	<b>3L</b>
1.1 History and definition	
1.2 Scope and importance of plant biotechnology	
1.3 Current status of biotechnology in India.	
<b>Chapter 2 Plant Tissue Culture</b>	<b>8L</b>
2.1 Concept of plant tissue culture and cellular totipotency	
2.2 Basic techniques: Types of culture, Media preparation, sterilization, inoculation, incubation, hardening	
2.3 Applications with reference to: Micropropagation, Somaclonal variation, Haploid production, Protoplast fusion & Somatic hybrids, Embryo rescue, Production of secondary metabolites.	
2.4 Commercial Plant Tissue culture laboratories in Maharashtra and India.	
<b>Chapter 3 Single Cell Protein (SCP)</b>	<b>4L</b>
3.1 Concept and definition	
3.2 Importance of proteins in diet	
3.3 Production of SCP from <i>Spirulina</i> and Yeast	
3.4 Importance & acceptability of SCP	
<b>Credit II:</b>	
<b>Chapter 4 Plant Genetic Engineering</b>	<b>5L</b>
4.1 Introduction, concept	
4.2 Tools of genetic engineering (restriction enzymes, ligases, plasmid vectors)	
4.3 Gene cloning Technique	
4.4 Applications of plant genetic engineering: insect pest resistance, abiotic stress tolerance, herbicide resistance	
<b>Chapter 5 Genomics, Proteomics and Bioinformatics</b>	<b>5L</b>
5.1 Genomics- concept, types, methods used for whole genome sequencing	
5.2 Proteomics-concept, types, methods used in proteome analysis	
5.3 Bioinformatics-concept, database and its classification, data retrieval tools.	
<b>Chapter 6 Bioremediation</b>	<b>2L</b>
6.1 Introduction and concept	
6.2 Microbial remediation	
6.3 Phytoremediation	
<b>Chapter 7 Biofuel technology</b>	<b>3L</b>
7.1 Definition, Concept and types of Renewable and nonrenewable energy sources	
7.2 Definition and concept of Biogas, Bioethanol, Biobutanol, Biodiesel & Biohydrogen	

**References**

1. B.D. Singh (4<sup>th</sup> Edn 2012) Biotechnology-expanding horizons, Kalyani Publishers.
2. K.S. Bilgrami & A.K. Pandey (2007) Introduction to Biotechnology CBS Publishers and Distributors PVT LTD
3. M.K. Razdan (2002) Introduction to Plant Tissue Culture. Oxford and IBH Publishing Co., New Delhi.
4. H.S. Chawla (2005) Introduction to Plant Biotechnology. Oxford and IBH Publishing Co. New Delhi.



**S.Y.B.Sc. Botany CBCS Pattern  
Practical (Semester IV Paper III) 2020-2021  
BO 243: Practical based on BO 241 & BO 242**

Sr. No.	Title	No. of Practical
<b>Plant Anatomy and Embryology</b>		
1	Study of epidermal tissue system – non-glandular and glandular trichomes, multilayered epidermis, typical stomata (Dicotyledonous and Monocotyledonous).	2
2	Study of mechanical tissues and their distribution in root, stem and leaves.	1
3	Study of normal secondary growth in dicot stem – <i>Annona /Moringa</i> (Double stained temporary preparation).	1
4	Study of anomalous secondary growth in <i>Bignonia</i> and <i>Dracaena</i> stem (Double stained temporary preparation).	1
5	Study of tetrasporangiate anther and types of ovules with the help of permanent slides	1
6	Study of dicot and monocot embryo.	1
<b>Plant Biotechnology</b>		
7	Instruments/equipments used in plant tissue culture laboratory: Principle and working of Autoclave, oven, laminar air flow cabinet, micropipette, culture bottles/tubes with cotton plug	1
8	Preparation & sterilization of MS medium	1
9	Surface sterilization and Inoculation of nodal sector, leaf, anther and maize embryo	2
10	Laboratory cultivation of <i>Spirulina</i>	1
11	Demonstration practical on transgenic crops viz; Bt-Cotton, Golden rice	1
12	Demonstration of principle and working of agarose gel electrophoresis, centrifuge, spectrophotometer	1
13	Visit to plant tissue culture laboratory	1

# University of Pune

## S.Y.B.Sc. Environmental Science Revised Syllabus 2020-21 Course Design

Semester	Paper	Course code	Course Title	Credits	Marks Distribution			
					Internal	University	Subtotal	Total
I	I	EVS – 231	Ecology & Ecosystem	02	15	35	50	150
	II	EVS – 232	Natural Resource Conservation and Management	02	15	35	50	
	III	EVS – 233	Practical Course Based on EVS - 231 & EVS – 232	02	15	35	50	
II	I	EVS-241	Biological Diversity & its Conservation	02	15	35	50	150
	II	EVS-242	Environmental Pollution Control Technology	02	15	35	50	
	III	EVS-243	Practical Course Based on EVS - 241 & EVS - 242	02	15	35	50	
				Total = 12				300

**Semester – I, Paper – I, EVS – 231**

**Ecology & Ecosystem**

**(Total Lectures- 40)**

<b>Unit No.</b>	<b>Name of the Unit</b>	<b>Content</b>	<b>Lectures</b>
1.	Ecology	<ul style="list-style-type: none"><li>• <b>Introduction &amp; Interdisciplinary nature of Ecology.</b></li><li>• <b>Levels of Organisation –</b><ul style="list-style-type: none"><li>a) Biological / Ecological Spectrum.</li><li>b) Ecological Hierarchy by Baret et al.</li></ul></li><li>• <b>Ecological Classification based on –</b><ul style="list-style-type: none"><li>a) Taxonomic Affinity (From Kingdom to Species Level Ecology).</li><li>b) Habitat Types (Terrestrial &amp; Aquatic Ecology).</li><li>c) Levels of Organisation (Autecology &amp; Synecology – Population, Community, Biome &amp; Ecosystem Ecology)</li></ul></li></ul>	08
2.	Ecosystem Structure & Function – Energy Flow	<ul style="list-style-type: none"><li>• <b>Concept</b> of the Ecosystem.</li><li>• <b>Macro &amp; Micro-ecosystems ...etc.</b></li><li>• <b>Ecosystem Structure –</b> Abiotic &amp; Biotic Components.</li><li>• <b>Ecosystem Function : Functional attributes-</b><ul style="list-style-type: none"><li>a) Food Chain – Grazing &amp; Detritus.</li><li>b) Food Web &amp; Ecosystem Stability</li><li>c) Ecological Energetics –<ul style="list-style-type: none"><li>i) Energy Input.</li><li>ii) Energy Flow – Single Channel &amp; Y shaped models.</li></ul></li><li>d) Productivity of Ecosystem –<ul style="list-style-type: none"><li>i) Primary Production – GPP &amp; NPP.</li><li>ii) Secondary Production.</li><li>iii) Standing Crop (Biomass).</li></ul></li><li>e) Ecological Pyramids – of Number, Biomass &amp; Energy with examples</li></ul></li></ul>	08
3.	Ecosystem Function : Nutrient Cycling	<ul style="list-style-type: none"><li>• <b>Concept of –</b><ul style="list-style-type: none"><li>a) Macro &amp; Micro-nutrients, deficiency syndrome, Functions</li><li>b) Nutrient Cycling-- Biogeochemical Cycles –</li></ul></li><li>• <b>Gaseous Cycles –</b> Hydrological, Carbon &amp; Nitrogen Cycles.</li><li>• <b>Sedimentary Cycles –</b> Phosphorus &amp; Sulphur Cycles.</li><li>• <b>Human Impact</b> on Biogeochemical Cycles.</li><li>• <b>Ecosystem Nutrient Cycling Model – Intra-system Cycling &amp; Extra-system Transfers.</b><ul style="list-style-type: none"><li>a) Nutrient Inputs.</li><li>b) Biotic Accumulation of Nutrient.</li><li>c) Nutrient Outputs.</li></ul></li></ul>	08

4.	<b>Population Ecology</b>	<ul style="list-style-type: none"> <li>• <b>Introduction &amp; Basic Concepts.</b></li> <li>• <b>Population Characteristics –</b> <ul style="list-style-type: none"> <li>a) Size &amp; Density.</li> <li>b) Dispersion – Random, Aggregate &amp; Uniform.</li> <li>c) Natality (Potential &amp; Realised).</li> <li>d) Fecundity</li> <li>e) Mortality (Potential &amp; Realised).</li> <li>f) Survivorship Curves.</li> <li>g) Age &amp; Sex Structure.</li> <li>h) Life Table and Viability analysis</li> </ul> </li> <li>• <b>The Concept of Carrying Capacity.</b></li> <li>• <b>Population Growth –</b> <ul style="list-style-type: none"> <li>a) Growth Curves – Exponential &amp; Logistic.</li> <li>b) Population Fluctuation.</li> <li>c) Biotic Potential &amp; Environmental Resistance.</li> </ul> </li> </ul>	08
5.	<b>Community Ecology and Succession</b>	<ul style="list-style-type: none"> <li>• <b>Characteristics of Community</b> - Species Diversity, Growth form &amp; Structure, Dominance, Succession, Trophic Structure, Ecological Niche, Ecotone &amp; Edge Effect.</li> <li>• <b>Characters used in Community Structure-</b> <ul style="list-style-type: none"> <li>a) Analytical Characters – <ul style="list-style-type: none"> <li>i) Quantitative.</li> <li>ii) Qualitative.</li> </ul> </li> <li>b) Synthetic Characters.</li> </ul> </li> <li>• <b>Inter-specific &amp; Intra-specific Relationships.</b></li> <li>• <b>Causes of Succession.</b></li> <li>• <b>Basic Types –</b> Primary, Secondary, Autogenic, Allogenic ...etc.</li> <li>• <b>Mechanism of Succession –</b> <ul style="list-style-type: none"> <li>a) Nudation.</li> <li>b) Invasion.</li> <li>c) Competition, Co-action &amp; Reaction.</li> <li>d) Stabilisation (Climax).</li> </ul> </li> <li>• <b>Models of succession –</b> <ul style="list-style-type: none"> <li>a) Hydrosere.</li> <li>b) Lithosere.</li> </ul> </li> </ul>	08

**Semester – I, Paper – II, EVS – 232**

**Natural Resources & their Management (Total Lectures- 40)**

Unit No.	Name of the Unit	Content	Lectures
1.	Resources	<ul style="list-style-type: none"><li>• <b>Meaning and Definition</b></li><li>• <b>Classification of Resources</b><ol style="list-style-type: none"><li>1. On the basis of Origin: Biotic &amp; Abiotic</li><li>2. On the basis of recovery rate: Renewable and Non Renewable</li><li>3. Natural and Artificial Resources</li><li>4. Material and Energy Resources</li></ol></li><li>• <b>Importance and Scope</b> of Resources</li><li>• <b>Nature</b> of Resources : Regenerative and Assimilative Capacity of Earth</li><li>• <b>Man's Interaction with Natural Resources:</b><ol style="list-style-type: none"><li>1. An important resource</li><li>2. A waste sink</li><li>3. Cultural Significance</li></ol></li><li>• <b>Problems</b> associated with Natural Resources</li></ul>	08
2.	Forest and Mineral Resources	<p>A. <b>Forest Resources :</b></p> <ul style="list-style-type: none"><li>• Function of Forest : Protective, Productive, Regulative and Accessory</li><li>• Importance of Forest : Ecological and Economical</li><li>• Human Interaction with Forest : Overexploitation, Deforestation (Causes and Effects)</li><li>• Forest Management in India—JFM, EDP, Protected Areas</li><li>• Case studies on Timber extraction, Dam construction and its effect on tribal people</li></ul> <p>B. <b>Mineral Resources</b></p> <ul style="list-style-type: none"><li>• Origin of Mineral Resources with examples</li><li>• Need of Mineral Resources</li><li>• Overexploitation of Mineral Resources</li><li>• Effects of Mining on Ecosystem with case studies.</li><li>• Conservation of Mineral resources and its importance</li></ul>	08
3.	Food Resources	<ul style="list-style-type: none"><li>• <b>World Food Problems:</b><ol style="list-style-type: none"><li>a) Increasing World Food Demand.</li><li>b) Nutritional deficiency in food.</li><li>c) Food Distribution.</li></ol></li><li>• <b>The Green Revolution in India-</b> Concept, Its Impacts in India.</li><li>• Introduction of Hybrid Varieties-HYV and Genetically Modified Crops.</li><li>• Effects of Modern Agriculture technologies</li><li>• Genetically Modified Crops &amp; Regulations in India</li><li>• <b>Fertilizer-Pesticide Problems</b> –NPK Fertilizers</li></ul>	08

4.	<b>Water Resources</b>	<ul style="list-style-type: none"> <li>• <b>Use and over-utilization</b> of surface and ground water,</li> <li>• Under-ground water pollution</li> <li>• Water Crisis--- the reasons</li> <li>• Conflicts over water ---World and India</li> <li>• <b>Conservation &amp; Management</b> <ul style="list-style-type: none"> <li>a) Traditional Methods.</li> <li>b) Rain-water Harvesting &amp; Ground Water Recharge.</li> <li>c) Watershed Management– the concept.</li> <li>d) Flood and flood plain management</li> </ul> </li> </ul>	<b>08</b>
5.	<b>Land Resource</b>	<ul style="list-style-type: none"> <li>• <b>Traditional &amp; Modern Agricultural Systems</b></li> <li>• <b>Major causes of soil degradation:</b> Soil erosion, Pollution , Use of fertilisers, pesticides, heavy metals, Plastic pollution</li> <li>• <b>Consequences of soil erosion</b> <ul style="list-style-type: none"> <li>a) Decline of soil fertility</li> <li>b) Water logging</li> <li>c) Salinity</li> <li>d) Shifting / jhum cultivation</li> </ul> </li> <li>• <b>Soil conservation methods</b></li> <li>• <b>Sustainable Agriculture Methods</b></li> </ul>	<b>08</b>

**Semester – II, Paper – I, EVS -241,**

**Biological Diversity & its Conservation**

**(Total Lectures- 40)**

Unit No.	Name of the Unit	Content	Lectures
1.	<b>Biological Diversity – Ecosystem Diversity</b>	<b>Biological Diversity---</b> <ul style="list-style-type: none"><li>• The Concept, Definition</li><li>• Levels – Ecosystem, Species &amp; Genetic.</li><li>• Methods of assessment of Biological diversity</li></ul> <b>Ecosystem Diversity</b> <ul style="list-style-type: none"><li>• Classification of Ecosystem –<ol style="list-style-type: none"><li>a) Udvardy’s Classification.</li><li>b) Bailey’s Classification.</li><li>c) Olsen’s Classification.</li><li>d) Holdridge’s Classification.</li></ol></li><li>• <b>Major Ecosystem types of India</b> with their physical &amp; biological characteristics.</li><li>• <b>Major Ecosystem types of the World</b> with their physical &amp; biological characteristics.</li><li>• <b>Importance of Ecosystem in maintaining Ecological balance</b></li></ul>	<b>08</b>
2.	<b>Species Diversity</b>	<ol style="list-style-type: none"><li>a) <b>Species Diversity</b> at Local , National and International Level</li><li>b) Special features and Latest estimates for major groups of Plants, Animals &amp; Microbes.</li></ol> <ul style="list-style-type: none"><li>• <b>Measuring Species Diversity</b> – Species Richness, Species Abundance and Species Evenness.</li><li>• <b>Factors</b> affecting global distribution of Species Richness – Latitudinal, Altitudinal, Rainfall gradients, temperature ...etc.</li><li>• <b>Endemism</b> –<ol style="list-style-type: none"><li>a) The Concept.</li><li>b) Types with Examples.</li><li>c) Endemism in India.</li></ol></li><li>• <b>Centers of Diversity</b> –<ol style="list-style-type: none"><li>a) The Concept.</li><li>b) Centers of Diversity : Analyses at Global Level –</li></ol></li><li>• <b>Concept of hotspot</b><ol style="list-style-type: none"><li>i) Myer’s Hot-spots.</li><li>ii) Mega-diversity Centers / Countries.</li></ol></li><li>c) <b>Western Ghat as a Hot-spot.</b></li><li>d) <b>India as a Mega-diversity Country.</b></li></ul>	<b>08</b>
3.	<b>Genetic Diversity</b>	<ul style="list-style-type: none"><li>• <b>Meaning &amp; Introduction</b> to Genetic Variations in Species.</li><li>• <b>Nature &amp; Origin</b> of Genetic Variations.</li><li>• <b>Factors</b> affecting Genetic Diversity.</li><li>• <b>Darwin’s theory of Evolution and Lamarck’s theory of Natural Selection</b></li><li>• <b>Measurement of Genetic Diversity</b> –<ol style="list-style-type: none"><li>a) Based on DNA &amp; Chromosomes.</li><li>b) Molecular Marker Techniques.</li></ol></li><li>• <b>Transgenic Organisms.</b></li><li>• <b>Diversity in Domesticated Species</b> –</li></ul>	<b>08</b>

		<ul style="list-style-type: none"> <li>a) Variations since the first domestication to the present.</li> <li>• Land Races, Advanced Cultivars, Wild Relatives of Cultivated Plants &amp; Feral Plants.</li> </ul>	
4.	<b>Significance &amp; Threat to Biodiversity</b>	<p>(Significances)</p> <ul style="list-style-type: none"> <li>• Ecological Significances – Contribution of Biodiversity to various Eco- Services.</li> <li>• Non Ecological Significances – Nutritional, Medicinal, Aesthetic, Cultural, Commercial Values ...etc.</li> <li>• Optional Values, Use of microorganism in remediation of pollution</li> </ul> <p>(Threats)</p> <ul style="list-style-type: none"> <li>• Threats with suitable Examples – <ul style="list-style-type: none"> <li>a) Large Scale Dev. Projects – Habitat Destruction &amp; Fragmentation.</li> <li>b) Changing Agri. &amp; Forestry Practices.</li> <li>c) Invasion by Introduced Species.</li> <li>d) Over-exploitation.</li> <li>e) Environment Pollution.</li> <li>f) Global Climate Change.</li> <li>g) Loss of Traditional Knowledge.</li> <li>h) Nature of Legal &amp; Mgmt. System – Human Wildlife Conflict.</li> <li>i) Genetically Modified Organisms ...etc.</li> </ul> </li> </ul>	08
5.	<b>Biodiversity Conservation</b>	<ul style="list-style-type: none"> <li>• <b>Conservation Methods</b> – In-situ &amp; Ex-situ methods with Example.</li> <li>• <b>National Conservation Efforts</b> – <ul style="list-style-type: none"> <li>a) The laws – Environment Protection Act, Forest Act, Wildlife Act, Biodiversity Act 2002</li> <li>b) Involving People’s Participation – NBSAP, PBR</li> <li>c) Involving Community Participation – JFM, EDP</li> <li>d) People’s Movement – Silent Valley Movement, Beej Bachao Andolan</li> </ul> </li> <li>• <b>International Conservation Efforts</b> – <ul style="list-style-type: none"> <li>a) IUCN – The World Conservation Union.</li> <li>b) CBD.</li> <li>c) CITES.</li> </ul> </li> <li>• <b>Traditional Methods of Conservation</b> – Sacred Groves / Ponds / Species, Periodic restrictions on resource harvesting ...etc.</li> <li>• <b>Need &amp; Awareness.</b></li> </ul>	08



Semester – II, Paper – II, EVS – 242

Environmental Pollution Control Technology

(Total Lectures- 40)

Unit No.	Name of Unit	Content	Lectures
1	Air Quality Parameters and Monitoring	<p><b>Air Quality Monitoring</b></p> <ul style="list-style-type: none"><li>• <b>National standards</b> for ambient air quality by WHO</li><li>• <b>Site and Parameter selection,</b></li><li>• <b>Air Sampling Techniques</b></li><li>• <b>Monitoring</b> of important <b>ambient air components</b> such as Particulate matter (PM) of 10 micron or less in size and 2.5 micron and less in size, Oxides of Sulfur, Nitrogen, Carbon monoxide</li><li>• <b>Methods of analysis of SO<sub>x</sub> , NO<sub>x</sub></b></li><li>• <b>Monitoring tools/instruments</b> used for the same and its work principle, Stack gases monitoring technique</li><li>• <b>Plume behaviour</b></li></ul>	08
2	Water Quality Monitoring	<ul style="list-style-type: none"><li>• <b>Purpose/objectives</b> of monitoring</li><li>• <b>Water Quality Monitoring Protocol</b></li><li>• <b>Collection of sample</b> (types of sample, chain of custody, sampling method, number of samples, sample containers, sample volume, etc.)</li><li>• <b>Sample preservation,</b> handling &amp; storage guidelines/criteria</li><li>• <b>Water quality monitoring</b> on field test parameters, off-field test parameters</li><li>• <b>Waste Water Treatment:</b><ol style="list-style-type: none"><li>a) Primary Treatment – Screening, Grit removal, Sedimentation</li><li>b) Secondary Treatment -<ul style="list-style-type: none"><li>• Aerobic Method-<ol style="list-style-type: none"><li>i) Activated Sludge Process.</li><li>ii) Trickling Filter.</li><li>iii) Rotating Contractor</li><li>iv) Oxidation Pond</li></ol></li><li>• Anaerobic Method.</li></ul></li><li>d) Tertiary Treatment – Disinfection (Chlorination).</li><li>e) Biogas—one stage and second stage digester, Principle</li></ol></li></ul>	08
3	Soil Quality Monitoring	<ul style="list-style-type: none"><li>• <b>Objectives</b> of soil monitoring/testing</li><li>• <b>Sampling</b> and sample units; sample number, frequency and timing; Sampling methodology<ol style="list-style-type: none"><li>a. Site selection</li><li>b. Infield sampling technique</li><li>c. Describing the soil profile</li><li>d. Site description</li><li>e. Setting a transect instruments / Equipment used</li></ol></li></ul>	08

		<ul style="list-style-type: none"> <li>Guidelines for handling and storage of samples</li> <li>Physiochemical and Biological parameters</li> </ul> <p><b>Biological Method to control soil pollution---</b></p> <p>a) To reduce dependency on chemicals – Use of Bio fertilizers &amp; Bio pesticides, Conservational Tillage, Mixed Cropping, Crop rotation, Biological Pest Mgmt., Organic Farming</p> <p>b) Bio / Phyto-remediation of contaminated sites.</p> <p><b>Soil carbon Flux</b></p>	
4	<b>Forest Monitoring</b>	<ul style="list-style-type: none"> <li><b>Classification of forests</b></li> <li><b>Measurement of individual trees:</b> <ol style="list-style-type: none"> <li>Measurement of diameter and girth of trees</li> <li>Measurement of heights of trees</li> <li>Measurement of form of trees</li> <li>Measurement of volume of felled trees</li> <li>Measurement of volume of standing trees</li> <li>Determination of age of trees</li> </ol> </li> <li><b>Forest inventory</b></li> <li><b>Kinds of sampling</b>, sampling units, sampling intensity</li> </ul>	<b>08</b>
5.	<b>Noise Quality Parameters</b>	<p><b>Noise and Vibration Monitoring</b></p> <ul style="list-style-type: none"> <li>Measuring techniques for noise &amp; vibration</li> <li>Noise monitoring methods</li> <li>The Basic Noise Unit; Lmax, SEL, Leq(h), Ldn, 24-Hour Exposure from All Events</li> <li><b>Noise Control Techniques-</b> Sound Insulation, Sound Absorption, Vibration Damping and Isolation</li> <li><b>Noise Control at Source—</b> <ol style="list-style-type: none"> <li>Selection &amp; Maintenance of machines.</li> <li>Control over vibrations.</li> <li>Installation of barriers / enclosures.</li> <li>Using protective equipment</li> <li>Noise proof walls</li> </ol> </li> </ul>	<b>08</b>

**Semester I, Paper-III****Practical Course Based on EVS -231 & EVS- 232.**

<b>Sr. No.</b>	<b>Description</b>	<b>Practical Type</b>	<b>Practical Sessions</b>
1.	Measurement of Primary Productivity of grassland by Harvest Method.	Field + Laboratory.	01
2.	Estimation of Total Chlorophyll from plants in Clean & Polluted Environment.	Laboratory.	01
3.	Study of grassland vegetation by List Count Quadrat Method to determine the Frequency, Density & Abundance.	Field + Laboratory	01
4.	Determination of Frequency & Abundance of species across terrestrial – aquatic transitional zone, by Line Transect Method.	Field + Laboratory	01
5.	Determination of Density of species across terrestrial – aquatic transitional zone by Belt Transect Method.	Field + Laboratory	01
6.	Field visit to study Watershed Mgmt. Techniques.	Visit.	01
7.	Visit to Nature Interpretation / Information Centre.	Visit.	01
8.	Visit to National Park / Wildlife Sanctuary to study Wildlife & various Inter-specific & Intra-specific Relations.	Visit.	≥ 01 Day
9.	Continuation of the use of Social Media for e-networking & dissemination of ideas on Environmental Issues Pertaining to the Course.	---	≥ 02
10.	Identification of advanced cultivars in the Local market	Visit.	01
11.	Field visit to study Rain water Harvesting technique	Visit.	01
12.	Determination of minimum area and number of quadrates for vegetation	Field + Laboratory	01
13.	Determination of Shannon Diversity Index of a vegetation ( Data sheet)	Laboratory.	01
14.	Determination of Simpson Diversity Index of a vegetation ( Data sheet)	Laboratory.	01
15.	Visit to Soil Survey Department.	Visit.	01
16.	Study of Soil sampling techniques	Visit.	01

## **Semester II, Paper-III**

### **Practical Course Based on EVS -241 & EVS- 242.**

<b>Sr. No.</b>	<b>Description</b>	<b>Practical Type</b>	<b>Practical Sessions</b>
1.	Sampling of Air by High Volume Sampler	Field + Laboratory	<b>01</b>
2.	Determination of Optimum Dose of Alum (Coagulant) required for water.	Laboratory.	<b>01</b>
3.	Determination of Turbidity of water. (Turbidimeter / Nephelometer)	Laboratory.	<b>01</b>
4.	Determination of Residual Chlorine from treated water.	Laboratory.	<b>01</b>
5.	Determination of Dissolved Oxygen in water by Winkler's method	Laboratory.	<b>01</b>
6.	Determination of Nitrate from water ( Calorimeter)	Laboratory.	<b>01</b>
7.	Determination of Phosphate from water. (Colorimeter)	Laboratory.	<b>01</b>
8.	Determination of Soluble Salts from Soil.	Laboratory.	<b>01</b>
9.	Determination of Available Nitrogen from soil.	Laboratory.	<b>01</b>
10.	Study of Water Sampling and Preservation techniques	Field + Laboratory	<b>01</b>
11.	Measurement of sounds by DB meter / SLM in silent, industrial, residential and commercial zones and Analysis	Field + Laboratory	<b>01</b>
12.	Estimation of AGB, BGB and Carbon from sampling of trees	Field + Laboratory	<b>01</b>
13.	Determination of Lime required for Acidic soil	Laboratory	<b>01</b>
14.	Estimation of Productivity of Lake using DO method	Field + Laboratory	<b>02</b>
15.	Estimation of NO <sub>x</sub> content of given samples	Laboratory.	<b>01</b>
16.	Estimation of SO <sub>x</sub> content of given samples	Laboratory.	<b>01</b>

## **Reference Books**

- Understanding Environment; Chokkar K. B., Pandya M. & Raghunathan M.; Centre for Environment Education; Sage Publication, New Delhi.
- An Advanced Textbook on Biodiversity – Principles & Practice; Krishnamurthy K.V.; Oxford & IBH Publishing Co. Pvt. Ltd.; New Delhi.
- Ecology – Principles & Applications; Chapman J. L. & Reiss M. J.; Cambridge University Press.
- Fundamentals of Ecology; Odum P.E.; Natraj Publishers; Dehradun; 3 Edt..
- Ecology, Environment & Resource Conservation; Singh J.S., Singh S.P. & Gupta S.R.; Annamaya Publishers; New Delhi.
- Ecology & Environment; Sharma P.D.; Rastogi Publication; Meerut; 11 Rev. Edt..
- Environment Science; Tyler M.G.; Wadsworth Publishing Co.; 1997.
- Perspective in Environmental Studies; Kaushik & Kaushik; New Age International Pvt. Ltd. Publishers.
- Environmental Science; Santra S.C.; New Central Book Agency (P) Ltd.; 2 Edt..
- Environmental Chemistry, Dey A. K.; New Age International Publishers; 6 Edt..
- Air Pollution; Rao M.N. & Rao H.V.N.; Tata McGraw Hill; New Delhi; 1989.
- Environmental Pollution Control & Environmental Engineering; Rao C. S.; Tata McGraw Hill; New Delhi; 1994.
- Pollution Management; Agarwal S.K.
- Environmental Science; Daniel Chiras.
- Waste Water Engineering, Treatment, Disposal & Reuse; Metcalf & Eddy.
- Manual for Field Ecology; Mishra R.
- Handbook of Methods in Environmental Studies Vol-I &II; Mailti S.K.; ABD Publishers; Jaipur.
- Physico-Chemical Examination of Water, Sewage & Industrial Effluents; Manivasakam N.; Pragati Prakashan; Meerut; 1984.
- Chemical & Biological Methods for Water Pollution Studies; Trivedi R.K. & Goel P.K.; Environmental Publications; Karad; 1986.
- Instrumental Methods of Analysis; Willard; cbspd; 7 Edt..
- Pollution Management; Agarwal S.K.
- Waste Water Engineering, Treatment, Disposal & Reuse; Metcalf & Eddy
- Advanced Air and Noise Pollution Control – L.K Wang & N.C Pereira
- Textbook of Noise Pollution & Its Control – S.C. Bhatia
- Waste Water Engineering, Treatment, Disposal & Reuse; Metcalf & Eddy
- Environmental Pollution Control & Environmental Engineering; Rao C. S.; Tata McGraw Hill; New Delhi; 1994.
- Air Pollution; Rao M.N. & Rao H.V.N.; Tata McGraw Hill; New Delhi; 1989











# **SYBSC & SYBSC (Computer Science)**

## **ENGLISH**

### **(Ability Enhancement Course-AEC)**

### **(Choice Based Credit System-35:15-Pattern)**

**(w. e. f- 2020- 2021)**

### **(03 Credit Course-2+1)**

**Text: *Horizons: English in Multivalent Contexts* (Board of Editors- Orient BlackSwan)**

#### **Preamble:**

This is an ABILITY ENHANCEMENT COURSE. Considering the needs of students and the requirements of professional sectors, the syllabus of this paper is designed to enhance linguistic and professional skills of the students. In the age of technology, it's high time for the students to acquire and exercise the skill and sub-skills of using English in multivalent contexts.

The paper aims at a balanced up-gradation of the students, focussing on their ability enhancement. Hence, to avoid a lopsided professional development, the humane values are also taken care of by accommodating literature section in the syllabus. The other units cater to the needs of enhancing speaking ability, writing ability, the ability to face an interview, the ability of using soft skills effectively while planning one's work and working on the plans. By and large, the present syllabus is an attempt to galvanise the existing competencies of the students and enhancing their abilities for a better performance and better results.

**Each** semester shall have 2+1=3 credits for teaching (One credit is for practical/discussion purpose). However, each credit is equal to 15 hours, so this course shall have 45 teaching hours. In addition to that there shall be 03 hours allotted to internal evaluation. **(3x15=45+3=48)**.

#### **Objectives:**

1. To introduce the use of English in multimedia
2. To acquaint the students with the language skills in multivalent contexts
3. To acquaint and enlighten students regarding the speaking skill in various contexts
4. To acquaint and familiarize the students with advanced writing skills in different contexts
5. To acquaint and familiarize the students with soft skills
6. To minimize the gap between the existing communicative skills of the students and the skills they require at professional level
7. To develop competence among the students to appreciate and analyze short stories and poetry

## Semester-III

**Text:** *Horizons: English in Multivalent Contexts* (Board of Editors- Orient BlackSwan)

### **Content-**

#### **UNIT-I- LITERATURE**

**10 Clock Hours**

**1. Short Story:**

i) 'A Shadow': R. K. Narayan

**2. Poetry:**

i) La Belle Dame sans Merci: John Keats

ii) Where the Mind is without Fear: Rabindranath Tagore

**3. Practical/Discussion**

**05 Clock Hours**

#### **UNIT-II-CONVERSATIONAL SKILL**

**10 Clock Hours**

(Sample Dialogues, Useful Expressions and Exercises)

1. Introducing Yourself and Others

2. Asking, Giving and Refusing Permission

3. Describing Daily Routine

4. Complaining and Apologizing

**5. Practical/Discussion**

**05 Clock Hours**

#### **UNIT-III-INTERVIEW TECHNIQUES**

**10 Clock Hours**

1. Job Application Letter

2. Resume Writing

3. GDPI

4. Presentations

**5. Practical/Discussion**

**05 Clock Hours**

## Semester-IV

**Text:** *Horizons: English in Multivalent Context* (Board of Editors- Orient BlackSwan)

#### **UNIT-I-LITERATURE**

**10 Clock Hours**

**1. Short Story:**

i) My Lost Dollar: Stephen Leacock

**2. Poetry:**

i) The Bird Sanctuary: Sarojini Naidu

ii) Stopping by Woods on a Snowy Evening: Robert Frost

**3. Practical/Discussion:**

**05 Clock Hours**

#### **UNIT-II-WRITING SKILLS**

**10 Clock Hours**

(Sample Passages, Useful Techniques and Exercises)

1. Notices
2. Agenda
3. Minutes
4. Content Writing
5. **Practical/Discussion** **05 Clock Hours**

**UNIT-III-SOFT SKILLS AND PERSONALITY DEVELOPMENT 10 Clock Hours**

(Sample Situations, Useful Techniques and Exercises)

1. An Introduction to Soft Skills
2. SWOC Analysis
3. Goal Setting
4. Project Management
5. **Practical/Discussion** **05 Clock Hours**

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**BIBLIOGRAPHY:**

1. Adair, John. Effective Communication, London: Pan Macmillan Ltd. 2003.
2. Amos, Julie-Ann. Handling Tough Job Interviews. Mumbai: Jaico Publishing, 2004.
3. Baron, N.S., (2008). Always On: Language in an Online and Mobile World. Oxford University Press. Oxford.
4. Borg, James.(2010). Body Language: 7 Easy Lessons to Master the Silent Language. FT Press.
5. Collins, Patrick. Speak with Power and Confidence. New York: Sterling, 2009.
6. Kroehnert, Gary. Basic Presentation Skills. Sidney: McGraw Hill, 2010.
7. Linda B., Iris V. (2001). Intercultural Communication in the Global Workplace. 2nd Edition. Tata McGraw
8. Mitra, B. (2011). Personality Development & Soft Skills. 1st edition. Oxfor.
9. Moore, Ninja-Jo, et al. Nonverbal Communication: Studies and Applications. New York: Oxford University Press, 2010.
10. Nelson, Paul E. & Judy C. Pearson, Confidence in Public Speaking.
11. Prasad, H. M. How to Prepare for Group Discussion and Interview. New Delhi: Tata McGraw-Hill Publishing Company Limited, 2001.

12. Pease, Allan. Body Language. Delhi: Sudha Publications, 1998.
13. Raman, Meenakshi & Sangeeta Sharma. Technical Communication: Principles and Practice. Second Edition. New Delhi: Oxford University Press, 2011.
14. Rutherford, Andrea J. Basic Communication Skills for Technology: Second Edition. Delhi: Pearson Education, 2007.
15. Sharma, R. C. & Krishna Mohan. Business Correspondence and Report Writing: Third Edition. New Delhi: Tata McGraw-Hill Publishing company Limited, 2007.

### **WEB LINKS:**

<http://networketiquette.net/>

<https://public.wsu.edu/~brians/errors/>

[http://users3.ev1.net/~pamthompson/body\\_language.htm](http://users3.ev1.net/~pamthompson/body_language.htm)

<http://www.albion.com/netiquette/corerules.html>

[http://www.bbc.co.uk/worldservice/learningenglish/radio/specials/15\\_35\\_questionanswer/page15.shtml](http://www.bbc.co.uk/worldservice/learningenglish/radio/specials/15_35_questionanswer/page15.shtml)

<http://www.colostate.edu/Depts/Speech/rccs/theory44.html>

<http://www.dailywritingtips.com/>

### **EVALUATION PATTERN**

Considering the choice-based credit system (CBCS) and the semester pattern, both Semesters-III & IV will have a uniform evaluation pattern of **50 marks** each. There will be an '**Internal Examination**' for **15 marks** and **Semester-end Examination** for **35 marks**.

The Internal Examination for **15 marks** will be conducted in two parts.

#### **1) Practical Examination for 05 marks:**

(The choices like Group Discussion, Mock Interviews, Seminar, Project Presentation, Role Play, Home Assignment, Library Work, Lecture Notes etc. can be considered.)

#### **2) A Mid-semester Written Test for 10 marks:**

The Mid-semester Written Test will be based on the book prescribed for the syllabus. The test aims at assessing students' writing competence in general. Hence, descriptive and essay type questions can be considered while setting the question paper.

#### **Semester-end Examination:**

The Semester-end Examination will have a uniform question paper pattern for both semesters. The pattern of the question paper is given below.

**SEMESTER-END EXAMINATION**

**Question Paper Patterns**

**(Sem-III)**

**Marks: 35**

**Time: 2 Clock Hours**

**Instructions:**

- 1. All questions are compulsory.**
- 2. Figures to the right indicate full marks.**

Q.1) Long-answer question on Unit-1

(Any 1 out of 2) (15)

Q.2) Short notes on Unit-2

(Any 2 out of 3) (10)

Q.3) Short notes on Unit-3

(Any 2 out of 3) (10)

**(Sem-IV)**

**Marks: 35**

**Time: 2 Clock Hours**

**Instructions:**

- 1. All questions are compulsory.**
- 2. Figures to the right indicate full marks.**

Q.1) Long-answer question on Unit-1

(Any 1 out of 2) (15)

Q.2) Short notes on Unit-2

(Any 2 out of 3) (10)

Q.3) Short notes on Unit-3

(Any 2 out of 3) (10)

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**Savitribai Phule Pune University [SPPU]**

**B.Sc. (Chemistry)**

(Three Years Integrated Degree Program)

**Choice Based Credit System [CBCS]**

**2019 Pattern**

**Second Year Bachelors of Science**

**(S. Y. B. Sc.)**

From Academic Year

2020-21

**Board of Studies in Chemistry**

Savitribai Phule Pune University [SPPU]

Pune-411007



## Structure of S. Y. B. Sc. Chemistry

(According to CBCS – 2019 Pattern of SPPU)

Semester	Course	Discipline Specific Core (DSCC)*
<b>III</b>	Theory	<b>CH-301</b> : Physical and Analytical Chemistry ( 2 credit, 36 L)
	Theory	<b>CH-302</b> : Inorganic and Organic Chemistry ( 2 credit, 36 L)
	Practical	<b>CH-303</b> : Chemistry Practical - III ( 2 credit, 72 L)
<b>IV</b>	Theory	<b>CH-401</b> : Physical and Analytical Chemistry ( 2 credit, 36 L)
	Theory	<b>CH-402</b> : Inorganic and Organic Chemistry ( 2 credit, 36 L)
	Practical	<b>CH-403</b> : Chemistry Practical - IV ( 2 credit, 72 L)

### **\*Important Notice:**

- i. Each lecture (L) will be of 50 minutes.
- ii. Each practical of 4 hours and 12 practical sessions per semester
- iii. 12 weeks for teaching 03 weeks for evaluation of students (theory as well as practical).
- iv. For details refer UG rules and regulations (CBCS for Science program under Science & Technology) published on SPPU website.

### **Evaluation Pattern (As per CBCS rules, SPPU 2019 Pattern)**

1. Each theory and practical course carry 50 marks equivalent to 2 credits.
2. Each course will be evaluated with Continuous Assessment (CA) and University Assessment (UA) mechanism.
3. Continuous assessment shall be of 15 marks (30%) while university Evaluation shall be of 35 marks (70%).
4. To pass each course, a student has to secure 40% mark in continuous assessment as well as university assessment i.e. 6 marks in continuous assessment and 14 marks in university assessment for the respective course.
5. For Continuous Assessment (internal assessment) minimum two tests per paper must be organized, of which one must be written test of 10 marks.
6. Method of assessment for internal exams: Viva-Voce, Project, survey, field visits, tutorials, assignments, group discussion, etc. (on approval of the head of centre).

**Theory - University Assessment Question Paper Pattern****(According to CBCS - 2019 Pattern of SPPU)**

Note that in theory question paper weightage will be given to each topics equivalent to number of lectures assigned in the syllabus.

<b>Total Marks: 35</b>		<b>Duration: 2 Hours</b>	
<b>Note:</b> i) Question -1 will be compulsory (5 marks). ii) Solve any three questions from question 2- 5. iii) Questions 2 to 5 carry equal marks (10 each).			
Q-1		Solve any five of the following (a) (b) (c) (d) (e) (f)	a) four tricky questions and b)two question on problem type (if applicable).  5 marks
Q-2	(A)	Describe type of question(s) i) ii)	6 mark
	(B)	Short question, but tricky	4 mark
Q-3	(A)	Explain type of question(s) i) ii)	6 mark
	(B)	Problem based question if applicable. Justification type of question	4 mark
Q-4	(A)	Discuss type of question(s) i) ii)	6 mark
	(B)	Problem based question if applicable. Justification type of question	4 mark
Q-5		Attempt any two of the following  (A) Questions A, B, C, - will be Explain, Derivation, Discuss, Notes, (B) etc. type of long questions (C)	10 mark

**S. Y. B. Sc. Chemistry Syllabus****(CBCS - 2019 Semester Pattern)****From Academic Year 2020-21****Equivalence with Previous Syllabus (2013 Pattern)**

<b>New Course (2019 Pattern)</b>	<b>Old Course (2013 Pattern)</b>
<b>CH-301</b> : Physical and Analytical Chemistry	<b>CH-211</b> : Physical and Analytical Chemistry
<b>CH-302</b> : Inorganic and Organic Chemistry	<b>CH-212</b> : Organic and Inorganic Chemistry
<b>CH-303</b> : Chemistry Practical - III	<b>CH-223</b> : Chemistry Practical
<b>CH-401</b> : Physical and Analytical Chemistry	<b>CH-221</b> : Physical and Analytical Chemistry
<b>CH-402</b> : Inorganic and Organic Chemistry	<b>CH-222</b> : Organic and Inorganic Chemistry
<b>CH-403</b> : Chemistry Practical - IV	<b>CH-223</b> : Chemistry Practical

**Preamble:**

The syllabus of Chemistry for second year has been redesigned for Choice based Credit System (CBCS: 2019 pattern) to be implemented from 2020-21.

In CBCS pattern semester system has been adopted for FY, SY and TY which includes Discipline Specific Core Course (DSCC) at F Y level, Ability Enhancement Compulsory Course (AECC), Discipline Specific Elective Course (DSEC) and Skill Enhancement Course (SEC). A DSCC course has been introduced at FY level and AECC courses at SY level along with DSEC. At TY level DSEC and SEC courses has been introduced.

Syllabus for Specific Core Courses of Chemistry (2 Theory and 1 Practical) subject for F. Y. B. Sc. is to be implemented from the year 2019-20. Syllabus for S. Y. and T. Y. B. Sc. will be implemented from the year 2020-21 and 2021-22 respectively as per structure approved.

**Learning Outcome:**

1. To understand basic concept/principles of Physical, Analytical, Organic and Inorganic chemistry.
2. To impart practical skills and learn basics behind experiments.
3. To prepare background for advanced and applied studies in chemistry.

**Overall Syllabus**

<b>SEMESTER-III</b>			
<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits and No of Lect.</b>
1	CH-301	Physical and Analytical Chemistry	Credit -2, 36 L
2	CH-302	Inorganic and organic Chemistry	Credit -2, 36 L
3	CH-303	Practical Chemistry-III	Credit -2, 72 L
<b>SEMESTER-IV</b>			
4	CH-401	Physical and Analytical Chemistry	Credit -2, 36 L
5	CH-402	Inorganic and organic Chemistry	Credit -2, 36 L
6	CH-403	Practical Chemistry-IV	Credit -2, 72 L

The detailed Semester and Course wise of Syllabus is as follows:

### SEMESTER-III

#### CH-301: Physical and Analytical Chemistry [Credit -2, 36 L]

Chapter No.	Chapter	No of Lectures
1	Chemical Kinetics	12
2	Surface Chemistry	06
3	Errors in Quantitative Analysis	05
4	Volumetric analysis	13

#### 1. Chemical Kinetics:

[12 L]

Introduction to kinetics, the rates of chemical reactions – definition of rates, rate laws and rate constants, reaction order and molecularity, determination of rate law, factors affecting reaction rates, integrated rate laws – zeroth-order reactions, first-order reactions, second-order reactions (with equal and unequal initial concentration of reactants), half-life period, methods for determination order of a reactions, Arrhenius equation- temperature dependence of reaction rates, interpretation of Arrhenius parameters, reaction dynamics - collision theory and transition-state theory of bimolecular reactions, comparison of the two theories, Problems.

(*Ref. No: 1- 725-728, 731-733, 741-742, 780-784, 792-794, Ref. No: 2- 1033- 1067*)

#### Learning Outcome:

After studying the Chemical Kinetics student will able to-

1. Define / Explain concept of kinetics, terms used, rate laws, molecularity, order.
2. Explain factors affecting rate of reaction.
3. Explain / discuss / derive integrated rate laws, characteristics, expression for half-life and examples of zero order, first order, and second order reactions.
4. Determination of order of reaction by integrated rate equation method, graphical method, half-life method and differential method.
5. Explain / discuss the term energy of activation with the help of energy diagram.
6. Explanation for temperature coefficient and effect of temperature on rate constant k.
7. Derivation of Arrhenius equation and evaluation of energy of activation graphically.
8. Derivations of collision theory and transition state theory of bimolecular reaction and comparison.
9. Solve / discuss the problem based applying theory and equations.

**2. Surface Chemistry****[6L]**

Introduction to surface chemistry - some basic terms related to surface chemistry adsorption, adsorption materials, factors affecting adsorption, characteristics of adsorption, types of adsorption, classification of adsorption isotherms, Langmuir adsorption isotherm, Freundlich's adsorption isotherm, BET theory (only introduction), application of adsorption, problems. (*Ref. No:1- 824-826, 832-837, Ref. No: 2- 1251-1264; Ref. No: 3- 932-938*)

**Learning Outcomes**

- Define / explain adsorption, classification of given processes into physical and chemical adsorption.
- Discuss factors influencing adsorption, its characteristics, differentiates types as physisorption and Chemisorption
- Classification of Adsorption Isotherms, to derive isotherms.
- Explanation of adsorption results in the light of Langmuir adsorption isotherm, Freundlich's adsorption Isotherm and BET theory.
- Apply adsorption process to real life problem.
- Solve / discuss problems using theory.

**Reference Books (Physical Chemistry)**

1. Atkins' Physical Chemistry by Peter Atkins, Julio de Paula, James Keeler -11th edition
2. Principles of physical chemistry by B.R. Puri, L.R. Sharma, M.S. Pathania
3. Essentials of Physical chemistry by BahlTuli-Revised Multicolour Edition 2009, S. Chand and Company Ltd.
4. Physical-Chemistry-4<sup>th</sup> Edition - Gilbert W. CastellanNarosa (2004).
5. Principles of ChemicalKinetics-2<sup>nd</sup>Edition- James E. House
6. Barrow, G.M. Physical Chemistry Tata McGraw-Hill (2007).
7. Principles of Physical Chemistry, Fourth Edition by S.H. Marron and C. F. Pruton
8. Kotz, J.C., Treichel, P.M. & Townsend, J.R. General Chemistry, Cengage Learning India Pvt. Ltd.: New Delhi (2009).
9. Mahan, B.H. University Chemistry, 3rd Ed. Narosa (1998).
10. Petrucci, R.H. General Chemistry, 5th Ed., Macmillan Publishing Co. New York, 1985).
11. Physical Chemistry by Thomas Engel, Philip Reid, Warren Hehre.

**3. Errors in Quantitative Analysis****[5 L]**

Introduction to errors, limitations of analytical methods, classifications of errors, accuracy, precision, minimization of errors, significant figures and computation, methods of

expressing accuracy and precision: mean and standard deviations, reliability of results and numerical. (*Ref-1: 127-138, supplementary references- Ref-2: 62-75, Ref-3: 82-121*)

### Learning Outcomes

- Define, explain and compare meaning of accuracy and precision.
- Apply the methods of expressing the errors in analysis from results.
- Explain / discuss different terms related to errors in quantitative analysis.
- Apply statistical methods to express his / her analytical results in laboratory.
- Solve problems applying equations.

## 4. Volumetric Analysis

[13 L]

Introduction to volumetric analysis, classification of reactions in volumetric analysis, standard solutions, equivalents, normalities, and oxidation numbers, preparation of standard solutions, primary and secondary standards. **Types of Volumetric Analysis methods:**  
**1. Neutralization titrations:** Theory of indicators, neutralization curves for strong acid strong base, weak acid strong base, weak base strong acid. Preparation of approximate 0.1 M HCl and standardization against anhydrous sodium carbonate, determination of  $\text{Na}_2\text{CO}_3$  content in washing soda. **2. Complexometric Titrations:** Definition of complexing agent and complexometric titration, EDTA-as complexing agent (structure of EDTA and metal ion-EDTA complex), Types of EDTA titration (direct and back titration), pH adjustment and amount of indicator in EDTA titration, metal ion indicators (general properties, solochrome black – T, Patton and Reeder's indicator only), standard EDTA solution, determination of Ca(II) and Mg(II), total hardness of water. **3. Redox Titrations:** Definition of oxidizing agent, reducing agent, redox titration,  $\text{K}_2\text{Cr}_2\text{O}_7$  and  $\text{KMnO}_4$  as oxidizing agents, 1,10-phenanthroline as indicator in reduction titration, diphenyl amine as oxidation indicator,  $\text{KMnO}_4$  as self-indicator, Standard  $\text{KMnO}_4$  solution and standardization with sodium oxalate, Determination of  $\text{H}_2\text{O}_2$ . **4. Precipitation titrations:** precipitation reactions, determination of end point (formation of coloured ppt, formation of soluble coloured compound, adsorption indicator), standard  $\text{AgNO}_3$  soln., standardization of  $\text{AgNO}_3$  soln. – potassium chromate indicator- Mohr's titration, determination of chloride and bromide, determination of iodide. Problems based on analysis.

(*Ref-1: Pages-257-275, 286, 295, 309 -322, 328-332, 340-351, 364-372.; supplementary reference Ref-2: 382-302, 322-334, 366-374, 437-452*)

### Learning Outcome:

After studying the Volumetric Analysis student will able to-

1. Explain / define different terms in volumetric analysis such as units of concentration, indicator, equivalence point, end point, standard solutions, primary and secondary standards, complexing agent, precipitating agent, oxidizing agent, reducing agent, redox indicators, acid base indicators, metallochrome indicators, etc.
2. Perform calculations involved in volumetric analysis.
3. Explain why indicator show colour change and pH range of colour change.
4. To prepare standard solution and **b.** perform standardization of solutions.
5. To construct acid – base titration curves and performs choice of indicator for particular titration.
6. Explain / discuss acid-base titrations, complexometric titration / precipitation titration / redox titration.
7. Apply volumetric methods of analysis to real problem in analytical chemistry / industry.

**Reference Books: (Analytical Chemistry)**

1. Vogel's Textbook of quantitative Chemical Analysis, 5<sup>th</sup> Ed. G. H. Jeffry, J. Basset, J. Mendham, R. C. Denney, Longman Scientific and Technical, 1989.
  2. Analytical Chemistry, G. D. Christian, P. K. Dasgupta, K. A. Schug, 7<sup>th</sup> Ed, Wily, 2004.
  3. Fundamentals of Analytical Chemistry- Skoog, west, Holler, Crouch, 9<sup>th</sup> Ed. Brooks / Cole, 2014/2004.
  4. Basic Concept of Analytical Chemistry- S. M. Khopkar
  5. Instrumental methods of chemical analysis- Chatwal Anand
  6. Analytical Chemistry, G.R. Chatwal, Sham Anand.
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**CH-302: Inorganic and Organic Chemistry [2Credit, 36 L]**

Chapter No.	Chapter	No of Lectures
1	Molecular Orbital Theory of Covalent Bonding	13
2	Introduction to Coordination chemistry	05
3	Aromatic hydrocarbons	05
4	Alkyl and Aryl Halides	07
5	Alcohols, Phenols and Ethers	06

**1. Molecular Orbital Theory of Covalent Bonding****[13 L]**

Introduction to Molecular Orbital Method (MOT) and postulates of MO theory, LCAO approximation, s-s combination of orbitals, s-p combination of orbitals, p-p combination of orbitals, p-d combination of orbitals, d-d combination of orbitals, non-bonding combination of orbitals, Rules for linear combination of atomic orbitals, example of molecular orbital treatment for homonuclear diatomic molecules: Explain following molecules with respect to MO energy level diagram, bond order and magnetism:  $H_2^+$  molecule ion,  $H_2$  molecule,  $He_2^+$  molecule ion,  $He_2$  molecule,  $Li_2$  molecule,  $Be_2$  molecule,  $B_2$  molecule,  $C_2$  molecule,  $N_2$  molecule,  $O_2$  molecule,  $O_2^-$  and  $O_2^{2-}$  ion,  $F_2$  molecule, Heteronuclear diatomic molecules:  $NO$ ,  $CO$ ,  $HF$ .

(Ref-1:89-112, Ref-4: 278-292, Ref-5: 33-38)

**Learning Outcome:**

After studying the Molecular Orbital Theory student will able to-

1. Define terms related to molecular orbital theory (AO, MO, sigma bond, pi bond, bond order, magnetic property of molecules, etc).
2. Explain and apply LCAO principle for the formation of MO's from AO's.
3. Explain formation of different types of MO's from AO's.
4. Distinguish between atomic and molecular orbitals, bonding, anti-bonding and non-bonding molecular orbitals.
5. Draw and explain MO energy level diagrams for homo and hetero diatomic molecules. Explain bond order and magnetic property of molecule.
6. Explain formation and stability of molecule on the basis of bond order.
7. Apply MOT to explain bonding in diatomic molecules other than explained in syllabus.

**2. Introduction to Coordination Compounds****[5 L]**

Double salt and coordination compound, basic definitions: *coordinate bond, ligand, types of ligands, chelate, central metal ion, charge on complex ion, calculation of oxidation state of central metal ion, metal ligand ratio*; Werner's work and theory, Effective atomic number, equilibrium constant (**Ref-6: 138-140**), *chelate effect, IUPAC nomenclature*. (**Ref-1: 194-200, 222-224; Ref-4: 483-492**)

**Learning Outcome:**

After studying the Introduction to Coordination Compounds student will able to-

1. Define different terms related to the coordination chemistry (double salt, coordination compounds, coordinate bond, ligand, central metal ion, complex ion, coordination number, magnetic moment, crystal field stabilization energy, types of ligand, chelate effect, etc.)
2. Explain Werner's theory of coordination compounds. Differentiate between primary and secondary valency. Correlate coordination number and structure of complex ion.
3. Apply IUPAC nomenclature to coordination compound.

**Reference Books: (Inorganic Chemistry)**

1. Concise Inorganic Chemistry, J. D. Lee, 5<sup>th</sup> Ed (1996) Blackwell Science
2. Inorganic Chemistry, James E. House, Academic Press (Elsevier), 2008
3. Inorganic Chemistry by Miessler and Tarr, Third Ed. (2010), Pearson.
4. Principles of Inorganic Chemistry, Brian W. Pfennig, Wiley (2015)
5. Inorganic Chemistry, Catherine Housecroft, Alan G. Sharpe, Pearson Prentis Hall, 2008.
6. Basics Inorganic Chemistry, Cotton and Wilkinson

**3. Aromatic Hydrocarbons:****[5 L]**

Introduction and IUPAC nomenclature, preparation (Case benzene): from phenol, by decarboxylation, from acetylene, from benzene sulphonic acid. *Reactions* (Case benzene): Electrophilic substitution: nitration, halogenation and sulphonation. Friedel-Craft's reaction (alkylation and acylation) (up to 4 carbons on benzene). Side chain oxidation of alkyl benzenes (up to 4 carbons on benzene).

(**Ref-1: 493-513**)

**Learning Outcome:**

After studying the aromatic hydrocarbons student will able to-

1. Identify and draw the structures aromatic hydrocarbons from their names or from structure name can be assigned.

2. Explain / discuss synthesis of aromatic hydrocarbons.
3. Give the mechanism of reactions involved.
4. Explain /Discuss important reactions of aromatic hydrocarbon.
5. To correlate reagent and reactions.

**4. Alkyl and Aryl Halides:****[7 L]**

**Alkyl Halides (up to 5 Carbons):** Introduction and IUPAC nomenclature, Types of Nucleophilic Substitution ( $SN^1$ ,  $SN^2$  and  $SNi$ ) reactions. *Preparation:* from alkenes and alcohols. *Reactions:* hydrolysis, nitrite & nitro formation, nitrile & isonitrile formation. Williamson's ether synthesis: Elimination vs. substitution.

**Aryl Halides:** Introduction and IUPAC nomenclature, *Preparation:* (Chloro, bromo and iodo-benzene case): from phenol, Sandmeyer and Gattermann reactions. *Reactions (Chlorobenzene):* Aromatic nucleophilic substitution (replacement by  $-OH$  group) and effect of nitro substituent. Benzyne Mechanism:  $KNH_2/NH_3$  (or  $NaNH_2/NH_3$ ). Reactivity and Relative strength of C-Halogen bond in alkyl, allyl, benzyl, vinyl and aryl halides.

(*Ref.-1: 165-211 and 943-967*)

**Learning Outcome:**

After studying the Alkyl and Aryl Halides student will able to-

1. Identify and draw the structures alkyl / aryl halides from their names or from structure name can be assigned.
2. Explain / discuss synthesis of alkyl / aryl halides.
3. Write / discuss the mechanism of Nucleophilic Substitution ( $SN^1$ ,  $SN^2$  and  $SNi$ ) reactions.
4. Explain /Discuss important reactions of alkyl / aryl halides.
5. To correlate reagent and reactions.
6. Give synthesis of expected alkyl / aryl halides.

**5. Alcohols, Phenols and Ethers (Up to 5 Carbons):****[6 L]**

**Alcohols:** Introduction and IUPAC nomenclature, *Preparation:* Preparation of 1o, 2o and 3o alcohols: using Grignard reagent, ester hydrolysis, reduction of aldehydes, ketones, carboxylic acid and esters. *Reactions:* with sodium, HX (Lucas test), esterification, oxidation (with PCC, alc.  $KMnO_4$ , acidic dichromate, conc.  $HNO_3$ ). Oppeneauer oxidation *Diols:* (Up to 6 Carbons) oxidation of diols. Pinacol-Pinacolone rearrangement.

**Phenols (Phenol case):** Introduction and IUPAC nomenclature, *Preparation:* Cumene hydroperoxide method, from diazonium salts. *Reactions:* Electrophilic substitution: Nitration, halogenation and sulphonation. Reimer-Tiemann Reaction, Gattermann Reaction, Houben–Hoesch Condensation, Schotten–Baumann Reaction. **Ethers (aliphatic and aromatic):** Cleavage of ethers with HI.

(Ref-1: 213-244 and 889-912)

### Learning Outcome:

After studying the Alcohols and Phenols student will able to-

1. Identify and draw the structures alcohols / phenols from their names or from structure name can be assigned.
2. Able to differentiate between alcohols and phenols
3. Explain / discuss synthesis of alcohols / phenols.
4. Write / discuss the mechanism of various reactions involved.
5. Explain /Discuss important reactions of alcohols / phenols.
6. To correlate reagent and reactions of alcohols / phenols
7. Give synthesis of expected alcohols / phenols.

### References: (Organic Chemistry)

1. Morrison, R.T. & Boyd, R.N. *Organic Chemistry*, Prentice Hall of India, Sixth Edition, 2002, 283-308.

### Other Reference Books for All Chapters:

2. Jonathan Clayden, Nick Greeves, Stuart Warren, Peter Wothers *Organic Chemistry* - Oxford University Press, USA, 2<sup>nd</sup> Ed.
  3. Bahl, A. and Bahl, B.S. *Advanced Organic Chemistry*, S. Chand, 2010.
  4. Graham Solomon, T.W., Fryhle, C.B. & Snyder, S.A. *Organic Chemistry*, John Wiley and Sons (2014).
  5. Mc Murry, J.E. *Fundamentals of Organic Chemistry*, 7<sup>th</sup> Ed. Cengage Learning India Edition, 2013.
  6. Sykes, P. *A Guidebook to Mechanism in Organic Chemistry*, Orient Longman, New Delhi (1988).
  7. Finar, I. L. *Organic Chemistry* (Vol. I and II), E.L.B.S.
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**CH-303: Practical Chemistry-III [2 credit, 72\* L]**

\* 72 L distributed as 58 L for performing practicals and 14 L for internal evaluation.

For practicals, see the manual prepared by BOS of Chemistry. The examination will be held according to this manual.

**Instructions**

1. Use molar concentrations for volumetric /estimations/synthesis experiments.
2. Use optimum concentrations and volumes
3. Two burette method should be used for volumetric analysis (Homogeneous mixtures)
4. Use of Microscale technique is recommended wherever possible

**A. Chemical Kinetics: (Any Three)**

1. To Study the Acid catalysed hydrolysis of an ester (methyl Acetate) and determine the rate constant (k). (first order reaction)
2. To study the kinetics of saponification reaction between sodium hydroxide and ethyl acetate.
3. To compare the relative strength of HCl and H<sub>2</sub>SO<sub>4</sub> or HNO<sub>3</sub> by studying the kinetics of hydrolysis of methyl acetate.
4. Energy of activation of the reaction between K<sub>2</sub>S<sub>2</sub>O<sub>8</sub> and KI with unequal initial concentration.

OR

4. To determine the order of the reaction with respect to K<sub>2</sub>S<sub>2</sub>O<sub>8</sub> by fractional life method following the kinetics of per sulphate-iodide reaction.

**References:**

- i) Systematic experimental physical chemistry, S. W. Rajbhoj, T. K. Chondekar, Anjali publication.
- ii) Practical Physical Chemistry, Vishwanathan and Raghwan , Viva book.
- iii) Practical Chemistry, O. P. Pandey, D. N. Bajpai Dr. S. Giri, S Chand Publication
- iv) Experiments in Chemistry, D. V. Jahagirdar, Himalaya Publication.

**B. Inorganic quantitative / qualitative analysis (Any two)**

1. Estimation of Fe(III) from given solution by converting it to Fe(II) using Zn metal and then by titrating with standard solution of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>-A Green Approach (Ref.-1,3).

- Determination of  $\text{BaCO}_3$  content in a given sample by precise determination of volume of  $\text{CO}_2$  (Ref-2).
- Separation and Identification of metal ions by Paper Chromatography (Ref.,4,5)

**References:**

- Iron Analysis by Redox Titration A General Chemistry Experiment, *Journal of Chemical Education*, Volume 65, Number 2, February 1988.183.
- A Precise Method for Determining the  $\text{CO}_2$  Content of Carbonate Materials, *Journal of Chemical Education*, Vol. 75, No. 12, December 1998.
- Vogel's Textbook Quantitative Chemical Analysis, 3<sup>rd</sup> and 6<sup>th</sup> Ed.
- Advanced Practical Chemistry, Jagdamba Sing et al, Pragati Prakashan, Merrut.
- Practical Chemistry, Panday, Bajpai, Giri, S.Chand and Co.

**C. Organic Qualitative Analysis (Two mixtures: solid-solid type)**

- Separation of Two Components** from given binary mixture of organic compounds containing mono-functional group (Ex. - carboxylic acid, phenols, amines, amide, nitro, etc.) and systematic identification of each component qualitatively.

**D. Organic Preparations (Any two)**

- Preparation of benzoic acid from ethyl benzoate (Identification and confirmatory Test of  $-\text{COOH}$  group, M.P and purity by TLC)
- Acetylation of primary amine (Green approach)
- Base catalyzed Aldol condensation (Green approach)
- Preparation of Quinone from hydroquinone (Confirm the conversion by absence of phenolic  $-\text{OH}$  group in product, M.P and purity by TLC)

**E. pH Metry (Compulsory)**

- To determine equivalence point of neutralisation of acetic acid by pH-metric titration with NaOH and to find best indicator for the titration.

**F. Volumetric Analysis (Any two)**

- Estimation of Aspirin from a given tablet and find errors in quantitative analysis. (*Standardization of acid must be performed with standard  $\text{Na}_2\text{CO}_3$  solution, prepared from dried anhydrous AR grade  $\text{Na}_2\text{CO}_3$* )
- Determination of acetic acid in commercial vinegar by titrating with standard NaOH. Express your results as average  $\pm$  standard deviation. (*Standardization of base must be performed with standard KHP*)

- Determination of Hardness of water from given sample by complexometric titration (Using E.D.T.A.) method and total dissolve solids by conductometry. Express your results as average  $\pm$  standard deviation. (*Standardization of Na<sub>2</sub>EDTA must be performed with standard Zn(II) solution*)

**Reference:**

- Vogel's Textbook Quantitative Chemical Analysis, 3<sup>rd</sup> and 5<sup>th</sup> Ed.
- Experiments in chemistry, D. V. Jahagirdar, Himalaya Publication.

**Examination Pattern:** At the time of examination student will have to perform one experiment. In case of organic qualitative analysis, after separation of binary mixture any one component has to be analysed according to OQA scheme. Distribution of 35 marks: 30 marks for experimental performance and 5 mark for oral.

To cope up with NACC criterion and to motivate and inculcate research culture among the students, interested students can be assigned mini-scale project. Project should be based either on applications of chemistry in day to day life or application or novel / applied synthesis / demonstrating principles of chemistry. The project work is equivalent to three experiments. *Student performing project can be exempted from 3 experiments from two semester. (\*from three different sections of two semester) and project will be evaluated by external examiner. Project being choice based activity; student will not get any exemption in external examination.* Systematic project report (Name page, certificate, introduction/theory, importance of project, learning outcome, requirements, safety precautions, procedure, observations, calculations, results and conclusions) be submitted separately in binding form duly certified by mentor teacher and HOD.

**Illustrative list of some projects is given below for your perusal.**

- Synthesis of soap from different types of oils with respect to i) percent yield ii cost of obtaining 50 g soap (students will learn saponification or alkaline hydrolysis of oils – a chemical reaction for the synthesis of day to day life product, which oil is better for soap making).
- Synthesis of biodegradable plastic (Principles demonstrated: Chemical reactions for more safe products and to mitigate environmental pollution).
- Synthesis of azo dyes and effect substituents of benzene ring on colour of azo dye (Principle demonstrated -Inductive effect a visible demonstration, strategy to change the colour of dye, chemical reactions for industries).

4. Quality of Consumer products: identification reactions and Purity of  $\text{NaHCO}_3$  (eating soda) of different brands by thermal decomposition. (Application of analytical chemistry and simple decomposition reaction for the determination of purity of consumer product)
5. Determination pH, surface tension, CMC and washing action of detergent of different brands for comparing their quality. (Application of chemistry principles in determination of quality of consumer product)
6. Removal of dyes / nitrophenols / by Fenton's process or by adsorption on activated charcoal. (Applications of principles of chemistry in mitigation of environmental pollution, an industrial application of chemistry).
7. Study of deionization water using cation and anion exchange resins / zeolites. Amount of zeolites / resin required for the softening of water. (Day to day life application of chemistry, student can apply their knowledge and can construct their own deionizer).
8. Preparation shampoo. Ingredients required, their proportion, mixing and testing.
9. Eudiometer: Determination of oxidation state, equivalent wt. and determine stoichiometry of the reaction between i) iron metal and HCl. Fe can have oxidation state +2 or +3. ii) Zn and HCl iii) Al and HCl. What happens with  $\text{HNO}_3$ ? Why similar method cannot used to investigate reaction between  $\text{HNO}_3$  and these metals?
10. Study stoichiometry of simple chemical reactions thereby determination of equivalent wt. of one of the reactant: i)  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  and  $\text{KMnO}_4$  (determine equivalent wt. of  $\text{KMnO}_4$ ) ii) Mn(II) and  $\text{KMnO}_4$  (determine equivalent wt. of  $\text{KMnO}_4$ ). Explain the concept of variable oxidation state and variable equivalent wt. for same substance i.e. mol. wt. is constant. (Known  $\text{Fe}^{2+}$  oxidizes to  $\text{Fe}^{3+}$  only).
11. Synthesis /isolation of essences, purity by TLC/ B.P. (at least two).
12. Synthesis and estimation of purity of aspirin (medicinal compound) by green chemistry route.
13. Compare the paracetamol content in tablet of different brands (at least three different brands).
14. Compare the vitamin-c content in tablet of different brands. (at least three different brands).
15. Determination of Avagadro Number (N) by various technics such as Brownian Moment, Electrodeposition, number of molecules in monolayer etc.
16. Hess Law verification
- 17 Determination of Faraday constant and Avagadro number
- 18 To determine thermodynamic values of various compounds



- 19 To determine density of various substances
- 20 Preparation of Nylon and study its properties
- 21 Microscale techniques in Chemistry

**References:**

1. A laboratory manual for general, organic and biological chemistry, 3<sup>rd</sup> Ed. Pearson.
2. Safety-Scale Laboratory Experiments for Chemistry for Today: General, Organic and Biochemistry Seventh Edition, Spencer L. Seager, Michael R. Slabaugh, Cengage Learning, 2010
3. Laboratory Manual for Principles of General Chemistry, Bearen, 8<sup>th</sup> Ed. Wiley.
4. Green Chemistry Laboratory Manual for General Chemistry, Sally A. Henrie, CRC Press Taylor & Francis Group, and Informa Business. 2015
5. Experiments in General Chemistry, G. S. Weiss T. G. Greco L. H. Rickard, Ninth Edition, Pearson Education Limited, 2014.
6. Mini-scale and micro-scale organic chemistry laboratory experiments 7<sup>th</sup> Ed. Schoffstall, Gaddis, Mc-Graw-Hill Higher Education, 2004.
7. Journal of Chemical Education, ACS, (search relevant topics).

**II. Students short activity (for both semesters)**

These are the extra-time activities for the students which can be performed with the permission of mentor. Mentor can arrange a demonstration on these activities to explain basic principles of chemistry. **Teacher can design many such activities to explain theory that you taught in the class.** Systematic report of activity performed be written in journal. Sample list of small activities is given below. These short activities can be considered for internal evaluation. Some activities are given below.

1. Amphoteric nature of  $\text{Al}(\text{OH})_3$  (Principle demonstrated-demonstration of amphoteric nature substance and why  $\text{Al}(\text{OH})_3$  is used in antacid preparations)
2. Enzyme deactivation by  $\text{Hg}^{2+}$  (Principle demonstrated-catalyst deactivation and toxicity effect of  $\text{Hg}^{2+}$ )
3. Adsorption of dyes on activated charcoal (Principle demonstrated and application- surface adsorption for removal of dyes from effluents)
4. Detection of adulteration in milk / chilli powder / turmeric powder / food colours
5. Use of EXCEL in drawing of graphs and calculations.
6. Catalysis by  $\text{Mn}(\text{II})$  in  $\text{KMnO}_4$ -Oxalic acid titration. (Principle, demonstrated - Homogeneous catalysis)

7. Identification of type of salt (strong acid – strong base, strong acid – weak base, weak acid – strong base) by hydrolysis reactions and indicators. (Principle demonstrated – hydrolysis reaction of salts, it really takes place)
8. Identification of inorganic ions in soft drinks / tooth paste, form of iodide in table salt / waste water / bore well water.
9. Spectrochemical series using  $\text{CuSO}_4$  solution and i) NaCl, ii) KBr, iii) Ammonia, iv) ethylene diamine, v) salicylic acid [correlate colour with wavelength and predict ligand strength]
10. Green Chemistry principles in Organic Chemistry.

**References:** Journal of Chemical Education, ACS, (search relevant topics).

### **Learning Outcome- Practical Chemistry-III**

1. Verify theoretical principles experimentally.
2. Interpret the experimental data on the basis of theoretical principles.
3. Correlate theory to experiments. Understand/verify theoretical principles by experiment observations; explain practical output / data with the help of theory.
4. Understand systematic methods of identification of substance by chemical methods.
5. Write balanced equation for the chemical reactions performed in the laboratory.
6. Perform organic and inorganic synthesis and is able to follow the progress of the chemical reaction by suitable method (colour change, ppt. formation, TLC).
7. Set up the apparatus / prepare the solutions - properly for the designed experiments.
8. Perform the quantitative chemical analysis of substances explain principles behind it.
9. Systematic working skill in laboratory will be imparted in student.

### **Important Notes:**

- i) Wherever feasible develop and practice micro or semi-micro methods from known / recommended procedures and the reference books. This is to i) minimize the cost of experiment, ii) reduce wastage of chemicals iii) reduce environmental pollution.
- ii) Mentor should promote students to ***complete the Journal on the same day before leaving of the lab***. Ensure that the original data is retained and used by the candidate. Students may adjust the data from their lab work to reach close to theoretical values. If journal is completed before leaving the lab it will not encourage students to “adjust” the facts from their lab work. (Ref-Journal of Chemical Education, Min J. Yang and George F. Atkinson, Designing New Undergraduate Experiments, Vol. 75, No. 7, July 1998).

### **Internal Evaluation Strategy for practical (Both semester):**

During start of the practical course methodology of internal evaluation should be discussed with students. Internal evaluation is a continuous assessment (CA). Hence during each practical, internal evaluation must be done with different tools. **Guidelines for internal evaluation:** To each practical 15 marks can be assigned which can be distributed as follows:

Overall performance and timely arrival	Interaction	Accuracy of results	Journal /Lab report	Post laboratory quiz / assignment / oral
4	2	2	5	2

At the end of semester, average of 12 experiments can be assigned as internal marks out of 15. Systematic record of internal evaluation must be maintained which is duly sign by mentor and student. If student is absent with prior-intimation her/his absentee will be considered but student will have to complete the experiment in the same week or in with the permission of mentor. Mentor or practical in-charge should arrange the practical for such students. Students performing projects (one mini project equivalent to three practical session) / student activities (4 to 6 activities equivalent to three practical session) can be assigned up to 3 marks out of 15.

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**SEMSER-IV****CH-401: Physical and Analytical Chemistry [Credit: 2, 36 L]**

Chapter No	Chapter	No of Lectures
1	Phase Equilibrium	09
2	Ideal and Real Solutions	09
3	Conductometry	06
4	Colorimetry	06
5	Column Chromatography	06

**1. Phase equilibrium****[9L]**

Introduction; definitions of phase, components and degrees of freedom of a system; stability of phases, criteria of phase equilibrium. Gibbs phase rule and its thermodynamic derivation, phase diagrams of one- component systems- water, carbon dioxide and sulphur systems, problems. (*Ref. No: 1, Page No- 119 - 126, Ref. No: 2, Page No – 661-675, Ref. No:4, Page No 344- 354*).

**Learning Outcomes**

- Define the terms in phase equilibria such as- system, phase in system, components in system, degree of freedom, one / two component system, phase rule, etc.
- Explain meaning and Types of equilibrium such as true or static, metastable and unstable equilibrium.
- Discuss meaning of phase, component and degree of freedom.
- Derive of phase rule.
- Explain of one component system with respect to: Description of the curve, Phase rule relationship and typical features for i) Water system ii) Carbon dioxide system iii) Sulphur system

**Reference Books (Physical Chemistry)**

1. Atkins' Physical Chemistry by Peter Atkins, Julio de Paula, James Keeler -11th edition
2. Principles of Physical chemistry by B.R. Puri, L.R. Sharma, M.S. Pathania
3. Essentials of Physical chemistry by Bahl Tuli-Revised Multicolour Edition 2009, S. Chand and Company Ltd.
4. Principles of Physical Chemistry, Fourth Edition by S.H. Marron and C. F. Pruton
5. Physical-Chemistry-4<sup>th</sup> Edition - Gilbert W. Castellan Narosa (2004).
6. Principles of Chemical Kinetics- 2<sup>nd</sup> Edition- James E. House.

7. Barrow, G.M. Physical Chemistry Tata McGraw-Hill (2007).
8. Kotz, J.C., Treichel, P.M. & Townsend, J.R. General Chemistry, Cengage Learning India Pvt. Ltd.: New Delhi (2009).
9. Mahan, B.H. University Chemistry, 3rd Ed. Narosa (1998).
10. Petrucci, R.H. General Chemistry, 5th Ed., Macmillan Publishing Co.: New York (1985).
11. Physical Chemistry by Thomas Engel, Philip Reid, Warren Hehre.

## 2. Ideal and real solutions

[9L]

Introduction, chemical potential of liquids - ideal solutions, ideal dilute solutions - Raoult's and Henry's Law, liquid mixtures, phase diagram of binary systems : liquids - vapour pressure diagrams, temperature composition diagrams, liquid-liquid phase diagrams, solubility of partially miscible liquids-critical solution temperature, effect of impurity on partially miscible liquids, Problems. (*Ref. No: 1, Page Nos- 150-153, 155-157, 166 – 175, Ref. No: 2, Page No. - 750-775, 696-705**Ref. No:4, Page No. 261-292, 298- 302*).

### Learning Outcomes

- Define various terms, laws, differentiate ideal and non-ideal solutions.
- Discuss / explain thermodynamic aspects of Ideal solutions-Gibbs free energy change, Volume change, Enthalpy change and entropy change of mixing of Ideal solution.
- Differentiate between ideal and non-ideal solutions and can apply Raoult's law.
- Interpretation of i) vapour pressure–composition diagram ii) temperature- composition diagram.
- Explain distillation of liquid solutions from temperature – composition diagram.
- Explain / discuss azeotropes, Lever rule, Henry's law and its application.
- Discuss / explain solubility of partially miscible liquids- systems with upper critical. Solution temperature, lower critical solution temperature and having both UCST and LCST.
- Explain / discuss concept of distribution of solute amongst pair of immiscible solvents.
- Derive distribution law and its thermodynamic proof.
- Apply solvent extraction to separate the components of from mixture interest.
- Solve problem by applying theory.

## 3. Conductometry

[6 L]

Introduction, Electrolytic Conductance, Resistance, conductance, Ohm's law, cell constant, specific and equivalent conductance, molar conductance, variation of equivalent and specific conductance with concentrations, Kohlrausch's law and its applications, conductivity cell, conductivity meter, Wheatstone Bridge, determination of cell constant,

conductometric titrations (strong acid-strong base, strong acid-weak base, weak acid strong base) and Numericals. **Ref-1:** 398-402, 414-423, 433-434, **Ref-2:** 519-527, **SupplementaryRef-3:** 746-756, **Ref-4:** 528-532.

### Learning Outcomes

- Explain / define different terms in conductometry such as electrolytic conductance, resistance, conductance, Ohm's law, cell constant, specific and equivalent conductance, molar conductance, Kohlrausch's law, etc.
- Discuss / explain Kohlrausch's law and its Applications, Conductivity Cell, Conductivity Meter, Whetstone Bridge.
- Explain / discuss conductometric titrations.
- Apply conductometric methods of analysis to real problem in analytical laboratory.
- Solve problems based on theory / equations.
- Correlate different terms with each other and derive equations for their correlations.

### 4. Colorimetry:

[6 L]

Introduction, interaction of electromagnetic radiation with matter, essential terms: radiant power, transmittance, absorbance, molar, Lambert's Law, Beer's Law, Lambert-Beer's Law, molar absorptivity, deviations from Beer's Law, Colorimeter: *Principle, Construction and components, Working*. Applications—unknown conc. By calibration curve method, Determination of unknown concentration of Fe(III) by thiocyanate method, Numericals. (**Ref-2:** 645-651, 658-661, 690, **Ref-3:** 97, 100, 159-172, **Ref-4:** 144-153, 157-160, **Ref-6-Relevant pages**).

### Learning Outcomes

- Explain / define different terms in Colorimetry such as radiant power, transmittance, absorbance, molar, Lambert's Law, Beer's Law, molar absorptivity
- Discuss / explain / derive Beer's law of absorptivity.
- Explain construction and working of colorimeter.
- Apply colorimetric methods of analysis to real problem in analytical laboratory.
- Solve problems based on theory / equations.
- Correlate different terms with each other and derive equations for their correlations.

### 5. Column Chromatography

[6 L]

Introduction, Principle of Column Chromatography, **Ion Exchange Chromatography:** Ion exchange resins, action of ion exchange resin (Ion exchange equilibria, Ion exchange capacity), Experimental technique, Application: i) Separation of

Metal ions / non-metal ions on Ion Exchange Chromatography ( *Zn(II)* and *Mg(II)*, *Cl<sup>-</sup>* and *Br<sup>-</sup>*), ii) Purification of water, (**Ref-2:** 186-192, 205-209) **Adsorption Chromatography – Liquid solid chromatography:** Introduction, the technique of conventional chromatography, column packing materials, Selection of solvent for adsorption chromatography, Adsorption column preparation and loading, Application – Purification of anthracene (**Ref-5:** 209-215, 221), Size Exclusion Chromatography(*Supplementary - Ref-4: pages 111-153, 212-215, Ref-6-Relevant pages*)

### Learning Outcomes

- Explain / define different terms in column chromatography such as stationary phase, mobile phase, elution, adsorption, ion exchange resin, adsorbate, etc.
- Explain properties of adsorbents, ion exchange resins, etc.
- Discuss / explain separation of ionic substances using resins.
- Discuss / explain separation of substances using silica gel / alumina.
- Apply column chromatographic process for real analysis in analytical laboratory.

### References (Analytical Chemistry)

1. Principles of Physical Chemistry, S.H. Marron and C. F. Pruton<sup>4th</sup> ed., Oxford and IBH publishing company / CBS, new Delhi.
  2. Vogel's Textbook of quantitative Chemical Analysis, 5<sup>th</sup> Ed. G. H. Jeffry, J. Basset, J. Mendham, R. C. Denney, Longman Scientific and Technical, 1989.
  4. Basic Concept of Analytical Chemistry- S. M. Khopkar
  5. Vogel's Text Book of Practical Organic Chemistry, Furniss, Hannaford, Smith, Tatchel, 5<sup>th</sup> Ed., Longman Scientific and Technical, 2004.
  6. Analytical Chemistry, G.R. Chatwal, Sham Anand.
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**CH-402: Inorganic and Organic Chemistry [2 credit, 36L]**

Chapter No.	Chapter	No of Lectures
1	Isomerism in coordination complexes	02
2	Valance Bond Theory of Coordination Compounds	04
3	Crystal field Theory	12
4	Aldehydes and ketones	05
5	Carboxylic acids and their derivatives	05
6	Amines and Diazonium Salts	04
7	Stereochemistry of Cyclohexane	04

**1. Isomerism in coordination complexes [2 L]**

Introduction, polymerization isomerism, ionization isomerism, hydrates isomerism, linkage isomerism, coordination isomerism, coordination position isomerism, geometric isomerism, optical isomerism.

(Ref-1: 232-236)

**Learning Outcome:**

After studying the aromatic hydrocarbons student will able to-

1. Isomerism in coordination complexes
2. Explain different types of isomerism in coordination complexes.

**2. Valance Bond Theory of Coordination Compounds [4 L]**

Aspects and assumptions of VBT, applications of VBT on the basis of hybridization to explain the structure and bonding in  $[\text{Ag}(\text{NH}_3)_2]^+$ ,  $[\text{Ni}(\text{Cl}_4)]^{2-}$ ,  $[\text{Ni}(\text{CN})_4]^{2-}$ ,  $[\text{Cr}(\text{H}_2\text{O}_6)]^{3+}$ ,  $[\text{Fe}(\text{CN})_6]^{3-}$  (Inner orbital complex) and  $[\text{FeF}_6]^{3-}$  (outer orbital complex). Use of observed magnetic moment in deciding the geometry in complexes with C.N.4, limitations of VBT.

(Ref-2: 592-597, Ref-3:350-351).

**Learning Outcome:**

After studying the aromatic hydrocarbons student will able to-

1. Apply principles of VBT to explain bonding in coordination compound of different geometries.
2. Correlate no of unpaired electrons and orbitals used for bonding.
2. Identify / explain / discuss inner and outer orbital complexes.
4. Explain / discuss limitation of VBT.



**3. Crystal Field Theory****[12 L]**

Shapes of d-orbitals, Crystal field Theory (CFT): Assumptions, Application of CFT to  
i) Octahedral complexes (*splitting of 'd' orbitals in Oh ligand field, effect of weak and strong ligand fields, colour absorbed and spectrochemical series, crystal splitting energy, Crystal field stabilization energy and factors affecting it, tetragonal distortion in Cu(II) complexes*)  
ii) Square planar complexes and iii) Tetrahedral complexes; spin only magnetic moment of Oh and Td complexes.

(Ref-1:194-225).

**Learning Outcome:**

After studying the aromatic hydrocarbons student will able to-

1. Explain principle of CFT.
2. Apply crystal field theory to different type of complexes (Td, Oh, Sq. Pl complexes)
3. Explain: i) strong field and weak field ligand approach in Oh complexes ii) Magnetic properties of coordination compounds on the basis of weak and strong ligand field ligand concept. iii) Origin of colour of coordination complex.
4. Calculate field stabilization energy and magnetic moment for various complexes.
5. To identify Td and Sq. Pl complexes on the basis of magnetic properties / unpaired electrons.
6. Explain spectrochemical series, tetragonal distortion / Jahn-Teller effect in Cu(II) Oh complexes only.

**Reference Books: (Inorganic Chemistry)**

1. Concise inorganic chemistry, J. D. Lee, 5<sup>th</sup> Ed (1996), Blackwell Science
2. Inorganic Chemistry, James E. House, Academic Press (Elsevier), 2008
3. Inorganic Chemistry by Miessler and Tarr, Third Ed. (2010), Pearson.

**4. Aldehydes and Ketones (aliphatic and aromatic)****[5 L]**

(Formaldehyde, acetaldehyde, acetone and benzaldehyde)

Introduction and IUPAC nomenclature, *Preparation*: from acid chlorides and from nitriles. *Reactions* – Reaction with HCN, ROH, NaHSO<sub>3</sub>, NH<sub>2</sub>-G derivatives. Iodoform test, Aldol Condensation, Cannizzaro's reaction, Wittig reaction, Benzoin condensation, Clemenson reduction and Wolff Kishner reduction. Meerwein-Ponndorf Verley reduction.  
(Ref-1: 657-700 and 797-816)

**Learning Outcome:**

After studying the aldehydes and ketones student will able to-

1. Identify and draw the structures aldehydes and ketones from their names or from structure name can be assigned.
2. Explain / discuss synthesis of aldehydes and ketones.
3. Write / discuss the mechanism reactions aldehydes and ketones.
4. Explain /Discuss important reactions of aldehydes and ketones.
5. To correlate reagent and reactions of aldehydes and ketones
6. Give synthesis of expected aldehydes and ketones.
7. Perform inter conversion of functional groups.

### 5. Carboxylic acids and their derivatives

[5 L]

**Carboxylic acids (aliphatic and aromatic):** Introduction and IUPAC nomenclature, *Preparation:* Acidic and Alkaline hydrolysis of esters. *Reactions:* Hell–Vohlard - Zelinsky Reaction.

**Carboxylic acid derivatives (aliphatic):** (up to 5 carbons) *Preparation:* Acid chlorides, Anhydrides, Esters and Amides from acids and their inter conversion. Reaction: Comparative study of nucleophilicity of acyl derivatives. Reformatsky Reaction, Perkin condensation. (*Ref-1:* 713-745 and 753-785).

#### Learning Outcome:

After studying the carboxylic acids and their derivatives student will able to-

1. Identify and draw the structures carboxylic acids and their derivatives from their names or from structure name can be assigned.
2. Explain / discuss synthesis of carboxylic acids and their derivatives.
3. Write / discuss the mechanism reactions carboxylic acids and their derivatives.
4. Explain /Discuss important reactions of carboxylic acids and their derivatives.
5. Correlate reagent and reactions of carboxylic acids and their derivatives
6. Give synthesis of expected carboxylic acids and their derivatives.
7. Perform inter conversion of functional groups.

### 6. Amines and Diazonium Salts:

[4 L]

**Amines (Aliphatic and Aromatic):** Introduction and IUPAC nomenclature, *Preparation* from alkyl halides, Gabriel's Phthalimide synthesis, Hofmann Bromamide reaction. *Reactions:* Hofmann vs. Saytzeff elimination, Electrophilic substitution (Case Aniline): nitration, bromination, sulphonation.

**Diazonium salts:** Preparation from aromatic amines. (*Ref-1:* 821-877)

**Learning Outcome:**

After studying the amines and diazonium Salts student will able to-

1. Identify and draw the structures amines from their names or from structure name can be assigned.
2. Explain / discuss synthesis of carboxylic amines.
3. Write / discuss the mechanism reactions carboxylic amines.
4. Explain /Discuss important reactions of carboxylic amines.
5. To correlate reagent and reactions of carboxylic amines.
6. Give synthesis diazonium salt from amines and reactions of diazonium salt.
7. Perform inter conversion of functional groups.

**7. Stereochemistry of Cyclohexane: [4 L]**

Bayer's strain theory, heat of combustion of cycloalkanes, structure of cyclohexane, axial and equatorial H atoms, conformations of cycloalkane, stability of conformations of cyclohexane, methyl and t-butyl monosubstituted cyclohexane, 1,1 and 1,2 dimethyl cyclohexane and their stability.

(*Ref-1*: 283-308).

**Learning Outcome:**

After studying the aromatic hydrocarbons student will able to-

1. Draw the structures of different conformations of cyclohexane.
2. Define terms such as axial hydrogen, equatorial hydrogen, confirmation, substituted cyclohexane, etc.
3. Convert one conformation of cyclohexane to another conformation and should able to identify governing structural changes.
4. Explain / discuss stability with respect to potential energy of different conformations of cyclohexane.
5. Draw structures of different conformations of methyl / t-butyl monosubstituted cyclohexane (axial, equatorial) and 1, 2 dimethyl cyclohexane.
6. Identify cis- and trans-isomers of 1, 2 dimethyl substituted cyclohexane and able to compare their stability.

**Reference Books: (Organic Chemistry)**

1. Morrison, R.T. and Boyd, R.N. *Organic Chemistry*, Prentice Hall of India, Sixth Edition, 2002, 283-308.

**Other Reference Books for all chapters:**

2. Jonathan Clayden, Nick Greeves, Stuart Warren, Peter Wothers, *Organic Chemistry*-Oxford University Press, USA, 2<sup>nd</sup> Ed.
  3. Bahl, A. and Bahl, B.S. *Advanced Organic Chemistry*, S. Chand, 2010.
  4. Graham Solomon, T. W., Fryhle, C. B. and Snyder, S. A. *Organic Chemistry*, John Wiley and Sons (2014).
  5. Mc Murry, J.E. *Fundamentals of Organic Chemistry*, 7<sup>th</sup> Ed. Cengage Learning India Edition, 2013.
  6. Sykes, P. A *Guidebook to Mechanism in Organic Chemistry*, Orient Longman, New Delhi (1988).
  7. Finar, I.L. *Organic Chemistry* (Vol. I & II), E.L.B.S.
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**CH-403:****Practical Chemistry-IV****[2 credit, 72\* L]**

\* 72 L will be distributed as 58 L performing practical and 14 L for internal evaluation.

**Instructions:**

1. Use molar concentrations for volumetric /estimations/synthesis experiments.
2. Use optimum concentrations and volumes
3. Two burette method should be used for volumetric analysis ( Homogeneous Mixtures)
4. Use of Microscale technique is recommended wherever possible.

**A. Conductometry (Compulsory)**

- a) To determine the cell constant of the given cell using 0.01 M KCl solution and determine dissociation constant of a given monobasic weak acid.
- b) To investigate the conductometric titration of any one of the following a) Strong acid against strong base b) Strong base against weak acid. (*standardization of base must be performed with KHP*)

**B. Chromatography (compulsory)**

1. Separation of binary mixture of cations by Column Chromatography by ion exchange resins / cellulose (any one mixture) (Co + Al, Cu + Mg, Zn+Mg). Separation of cations must be confirmed by qualitative test

**References:**

- i. Vogel's Textbook Quantitative Chemical Analysis, 3<sup>rd</sup>, 6<sup>th</sup> Ed.
- ii) Experiments in chemistry, D. V. Jahagirdar, Himalaya publication.

**C. Ideal and Real solutions (Any two)**

1. To study the variation of mutual solubility temperature with % concentration for the phenol - water system
2. To study the effect of added electrolyte on the critical solution temperature of phenol-water system and to determine the concentration of the given solution of electrolyte.
3. To obtain the temperature-composition phase diagram for a two component liquid system with maximum (or minimum) boiling point and to determine the maximum (or minimum) boiling point and composition.

**D. Adsorption (Compulsory)**

1. To verify the Freundlich and Langmuir adsorption isotherm for adsorption of acetic acid on activated charcoal.

**References:**

- i) Systematic experimental physical chemistry, S. W. Rajbhoj, T. K. Chondekar, Anjali publication.
- ii) Practical Physical Chemistry, Vishwanathan and Raghwan , Viva book.
- iii) Practical Chemistry, O. P. Pandey, D. N. Bajpai Dr. S. Giri, S Chand Publication

#### E. Synthesis of Coordination compounds (any two)

1. Synthesis of sodium cobaltinitrite (a laboratory chemical) from Co(II) salt and  $\text{NaNO}_2$  salts. Comment on colour and magnetic properties of the complex. (Ref.-1, 2)
2. Synthesis of potassium Tris(oxalate)aluminium(III) using Al metal powder(Scrap aluminium). Comment on colour and magnetic properties of the complex. (Ref-2, 3, 4)
3. Synthesis of Tris(acetylacetonate)iron(III) by green chemistry method by reaction between  $\text{Fe(OH)}_3$  and acac. Comment on colour and magnetic properties of the complex. (Ref.- 5,6).
4. Synthesis of Tris(ethylenediamine)nickel(II) from Ni(II) salt, ethylenediamine and sodium thiosulfate. Comment on colour and magnetic properties of the complex. (Ref.-7)

#### F. Inorganic colorimetric investigations (Any two)

1. Prepare standard solutions of  $\text{KMnO}_4$  /  $\text{CuSO}_4$ , record their absorbance and Verify Beer's Law and determine unknown concentration. **(Compulsory)**
2. Prepare solution of Fe(III) and  $\text{SCN}^-$  in different molar proportion, record their absorbance and calculate equilibrium constant of  $[\text{Fe(SCN)}]^{2+}$  complex (Ref.-9,10)
3. Prepare solution of Fe(III)/Cu(II) and salicylic acid in different molar proportion and determine metal ligand ratio in Fe(III) or Cu(II)–Salicylic acid complex. (Ref.-11, 12, 13)

#### References

1. Handbook of Preparative Inorganic Chemistry, Volume 2, Second Edition, Edited By Georg Brauer, Academic Press, New York, London, 1965. (Page-1541)
2. Practical Chemistry, Pandey, Bajpai, Giri, S.Chand and Co.
3. McNeese, T.J.; Wierda, D.A. Synthesis of Potassium Tris(oxalato)aluminate(III) Trihydrate. *Journal of Chemical Education*, 1983, 60(11), 1001.
4. Inorganic Syntheses Vol -1 by H S Booth. First Ed, 1939. (page-36).
5. Novel Synthesis of Tris(acetylacetonato)-iron(III), *Journal of Chem. Soc. Dalton Trans.* 1983
6. Metal Acetylacetonate Synthesis Experiments: Which Is Greener?, *Journal of Chemical Education*, 2011, 88, 947–953, dx.doi.org/10.1021/ed100174f

7. Experimental Inorganic/Physical Chemistry: An Investigative, Integrated Approach to Practical Project Work, Mounir A. Malati, Woodhead Publishing Limited, 1999.
8. Vogel's Textbook Quantitative Chemical Analysis, 6<sup>th</sup> Ed.
9. Colorimetric Determination of the Iron(III)-Thiocyanate Reaction Equilibrium Constant with Calibration and Equilibrium Solutions Prepared in a Cuvette by Sequential Additions of One Reagent to the Other, *Journal of Chemical Education*, Vol.88 No.3 March 2011.
10. Experiments in chemistry, D. V. Jahagirdar, Himalaya publication.
11. A spectrophotometric study of complex formation between Fe(III) and salicylic acid, Kinya Ogawa, Nobuko Tobe, Bulletin of chemical society of Japan, 39, 227-232, 1966.
12. Salicylate determination by complexation with Fe(III) and optical absorbance spectroscopy
13. Determination of Equilibrium Constants of Metal Complexes from Spectrophotometric Measurements: An Undergraduate Laboratory Experiment, *Journal of Chemical Education*, Vol. 76, No. 9, September 1999.

#### G. Organic Estimations (any two)

1. **Determination of molecular weight:** Determination of molecular weight of organic acid by titration against standardized NaOH - a) monobasic acid or b) dibasic acid
2. **Estimation of amides:** Determine the amount of acetamide in given solution by volumetric method. (Standardization of acid must be performed)
3. **Estimation of Ethyl benzoate:** To determine the amount of ethyl benzoate in given solution volumetrically. (Standardization of acid must be performed).

#### References:

- i) Vogel's textbook of practical organic chemistry
- ii) Comprehensive Practical Organic Chemistry by V.K. Ahluwalia and Renu Aggarwal

**Examination Pattern:** At the time of examination student has to perform one experiment either from inorganic sections or organic section. 50% students must be assigned inorganic chemistry and 50% organic chemistry experiment. In case of organic qualitative analysis, after separation of binary mixture any one compound has to be analysed. Distribution of or 35 marks: 30 marks for experimental performance and 5 mark for oral.

#### Section - C: Industrial Visit

Visit any Chemical / Pharmaceutical / Polymer / Research Institutes / Sugar Factories / waste water treatment plant, etc. and submit report.

#### Learning Outcomes

1. Verify theoretical principles experimentally

2. Interpret the experimental data on the basis of theoretical principles.
  3. Correlate the theory to the experiments. Understand / verify theoretical principles by experiment or explain practical output with the help of theory.
  4. Understand systematic methods of identification of substance by chemical methods.
  5. Write balanced equation for all the chemical reactions performed in the laboratory.
  6. Perform organic and inorganic synthesis and able to follow the progress of the chemical reaction.
  7. Set up the apparatus properly for the designed experiments.
  8. Perform the quantitative chemical analysis of substances and able to explain principles behind it.
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**Savitribai Phule Pune University, Pune**  
*(Formerly University of Pune)*

**Second Year B.Sc in Mathematics**

**(Faculty of Science & Technology)**

Revised Syllabi for

**S.Y.B.Sc. - Mathematics**

**(For Colleges Affiliated to Savitribai Phule Pune University, Pune)**

**Choice Based Credit System Syllabus**

**To be implemented from the Academic Year 2020-2021**

**SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE**  
**Board of Studies in Mathematics Syllabus for S. Y. B. Sc**

**Subject: MATHEMATICS**  
(With effect from June 2020)

**Introduction:**

Savitribai Phule Pune University, Pune has decided to change the syllabi of various faculties from June 2020. Taking into consideration the rapid changes in science and technology and new approaches in different areas of mathematics and related subjects Board of studies in Mathematics with concern of teachers of Mathematics from different colleges affiliated to Savitribai Phule Pune University, Pune has prepared the syllabus of S.Y.B.Sc. Mathematics. To develop the syllabus the U.G.C. Model curriculum is followed.

**Aims:**

- Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerable power of mathematical ideas and tools and know how to use them by modeling ,solving and interpreting.
- Reflecting the broad nature of the subject and developing mathematical tools for continuing further study in various fields of science.
- Enhancing students overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment .
- Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

**Objectives:**

- A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays ,state important facts resulting from their studies.
- A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
- A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.
- A student be able to apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.
- A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture.

**Eligibility:** F. Y. B. Sc., as per University rules.

**Structure of the course:**

Semester - III			Semester -IV	
Paper I	MT-231	Calculus of Several Variables	MT-241	Linear Algebra
Paper II	MT-232(A)	Numerical Methods and Its Applications	MT-242(A)	Vector Calculus
	MT-232(B)	Graph Theory	MT-242(B)	Dynamical Systems
Paper III	MT-233	Mathematics Practical based on MT - 231 and MT - 232	MT-243	Mathematics Practical based on MT - 241 and MT-242

- All three above courses are compulsory.
- In Semester-III, select any one from **MT-232(A) and MT-232(B)**.
- In Semester-IV, select any one from **MT-242(A) and MT-242(B)**.

**Medium of Instruction:** English.

**Examination:**

**A) Pattern of examination:** Semester.

**B) Standard of passing:** 20 marks out of 50 marks for each papers.

But for MT- 231, MT -232(A), MT -232(B), MT -241, MT -242(A), MT -242(B), MT -233 and MT-243 for passing a student should obtain minimum 14 marks out of 35 in the theory examination and overall total marks for theory and internal should be minimum 20.

**C) Pattern of question papers:** For MT- 231, MT -232(A), MT -232(B), MT -241, MT -242(A), MT -242(B).

Q1. Attempt any 05 out of 07 questions each of 01 marks. [05 Marks]

Q2. Attempt any 02 out of 04 questions each of 05 marks. [10 Marks].

Q.3. Attempt any 02 out of 04 questions each of 05 marks. [10 Marks].

Q4. Attempt any 02 out of 04 questions each of 10 marks. [10 Marks].

**D) External Students:** Not allowed.

**E) Verification /Revaluation:** Allowed for MT- 231, MT -232(A), MT -232(B), MT - 241, MT -242(A), MT -242(B).

The pattern of question paper for MT -233, MT-243 is given in the detailed syllabus.

**Equivalence of Previous syllabus along with new syllabus:**

	Semester-III		Semester-IV	
	New Course	Old Course	New Course	Old Course
<b>Paper I</b>	<b>MT-231: Calculus of Several Variables</b>	<b>MT-211 : Multivariable Calculus-I</b>	<b>MT-241:Linear Algebra</b>	<b>MT-221: Linear Algebra</b>
<b>Paper II</b>	<b>MT-232(A): Numerical Methods and Its Applications</b>	<b>MT-212(A): Discrete Mathematics</b>	<b>MT-242(A): Vector Calculus</b>	<b>MT-222(A): Multivariable Calculus - II</b>
	<b>MT-232(B): Graph Theory</b>	<b>MT- 212(B): Laplace Transform and Fourier Series</b>	<b>MT-242(B): Dynamical Systems</b>	<b>MT-212(B): Numerical Analysis</b>
<b>Paper III</b>	<b>MT-233: Mathematics Practical based on MT-231 and MT-232</b>	<b>MT-213 : Mathematics Practical based on MT-211 and MT-212</b>	<b>MT-243: Mathematics Practical based on MT-241 and MT-242</b>	<b>MT-223: Mathematics Practical based on MT-221 and MT-222</b>

**Qualifications for Teacher:** M.Sc. Mathematics (with NET /SET as per existing rules).

**Semester – III**

**MT-231: Calculus of Several Variables**

**Unit-1 Limits and Continuity** **[06 lectures]**

**1.1** Functions of Several Variables :- Functions of two variables, Domain and Range, Graphs, Level Curves, Functions of Three or More Variables

**1.2** Limits and Continuity.

**Unit-2 Partial Derivatives and Differentiability** **[10 lectures]**

**2.1** Definition and examples.

**2.2** Higher Derivatives, Clairaut’s Theorem (Statement Only) , Partial Differential Equations, Wave equation.

2.3 Differentiable function, Differentials

2.4 Chain Rule, Homogeneous Functions, Euler's theorem

**Unit-3 Extreme Values**

**[08 lectures]**

3.1 Extreme values of functions of two variables.

3.2 Necessary conditions for extreme values.

3.3 Second Derivative Test (without proof).

3.4 Lagrange Multipliers ( with one constraints)

**Unit-4 Multiple Integrals**

**[12 lectures]**

4.1 Iterated Integrals, Fubini's Theorem (Statement only)

4.2 Double integral over general regions, Change of order of integration for two variables.

4.3 Double integral in Polar coordinates.

4.4 Triple integrals , Evaluation of triple integrals. Triple integrals in spherical coordinates

4.5 Jacobians , Change of variables in multiple integrals .(Results without proofs)

**Text book:** Multivariable Calculus 7th Edition By James Stewart, Brooks/Cole, Cengage Learning, 2012, 2008.

Unit 1:- Chapter 14: Sec- 14.1, 14.2

Unit 2:- Chapter 14: Sec- 14.3(except the Cobb-Douglas production function), 4.4  
(except Tangent Planes and Linear Approximations), Sec-14.5

Unit 3:- Chapter 14: Sec 14.7, 14.8 (except two constraints)

Unit 4:- Chapter 15: Sec 15.2, 15.3, 15.4, 15.7 (without Riemann sum and  
Application), 15.9, 15.10

**Reference Books:**

1. Basic Multivariable Calculus, J. E. Marsden, A. J. Tromba , A. Weinstein, Springer Verlag (Indian Edition).
2. Shanti Narayan, R.K. Mittal, A Text-book of Vector Calculus, S.Chand and Company.
3. D.V. Widder, Advanced Calculus (2nd Edition), Prentice Hall of India ,NewDelhi,(1944).
4. T.M. Apostol , Calculus Vol. II (2nd Edition), John Wiley, New York, (1967).

**MT-232(A): Numerical Methods and It's Applications**

**Unit1: Solution of Algebraic and Transcendental Equations**

**[10 Lectures]**

1.1 Errors and their computations

1.2 Bisection method.

1.3 The method of False position

1.4 Newton- Raphson method

**Unit 2: Interpolation**

**[12 Lectures]**

2.1 Finite Difference Operators and their relations (Forward, Backward difference and Shift operator).

2.2 Differences of a polynomial

2.3 Newton's Interpolation Formulae (Forward and Backward )

2.4 Lagrange's Interpolation Formula

**Unit 3: Numerical Differentiation and Integration [06 Lectures]**

3.1 Numerical Differentiation (Derivatives using Newton's forward difference formula)

3.2 Numerical Integration, General quadrature formula.

3.3 Trapezoidal rule.

3.4 Simpsons's 1/3rd rule.

3.5 Simpsons's 3/8th rule.

**Unit 4: Numerical solution of first order ordinary differential equations [08 Lectures]**

4.1 Taylor's Series method

4.2 Picard's method of successive approximations

4.3 Euler's method.

4.4 Modified Euler's methods.

4.5 Runge - Kutta Methods.

**Text book:**

**1. S.S. Sastry, Introductory Methods of Numerical Analysis, 5<sup>th</sup> edition, Prentice Hall of India.**

Unit 1: Chapter 1: section 1.3, Chapter 2: section 2.2, 2.3, 2.5

Unit 2: Chapter 3: section 3.3, 3.5, 3.6, 3.9(3.9.1 only)

Unit 3: Chapter 4: section 6.2 (excluding 6.2.1 to 6.2.3), 6.4

Unit 4: Chapter 5: section 8.2, 8.3, 8.4 (excluding 8.4.1).

**Reference Books:**

1. C.F. Gerald and O.P. Wheatley, Applied Numerical Analysis, Addison Wesley;

7<sup>th</sup>edition (2003).

2. K.E. Atkinson; An Introduction to Numerical Analysis, Wiley Publications.

3. T. Sauer, Numerical analysis, 3<sup>rd</sup> edition, Pearson.

4. M. K. Jain, SRK Iyengar and R.K. Jain, Numerical Methods For Scientific & Engg 5e,

New Age International (P) Ltd (2008).

**MT-232(B) : Graph Theory**

**Unit 1. Introduction**

**[04 Lectures]**

1.1 What is a Graph?

1.2 Application of Graphs

1.3 Finite and Infinite Graphs

1.4 Incidence and Degree

1.5 Isolated Vertex, Pendant Vertex and Null Graph

**Unit 2. Paths and Circuits**

**[12 Lectures]**

- 2.1 Isomorphism
- 2.2 Subgraphs
- 2.4 Walks, Paths, and Circuits
- 2.5 Connected Graphs, Disconnected Graphs, and Components
- 2.6 Euler Graphs
- 2.7 Operations on Graphs
- 2.8 More on Euler Graphs
- 2.9 Hamiltonian Paths and Circuits
- 2.10 The Traveling Salesman Problem

**Unit 3. Trees and Fundamental Circuits**

**[14 Lectures]**

- 3.1 Trees
- 3.2 Some Properties of Trees
- 3.3 Pendant Vertices in a Tree
- 3.4 Distance and Centers in a Tree
- 3.5 Rooted and Binary Trees
- 3.6 On Counting Trees
- 3.7 Spanning Trees
- 3.8 Fundamental Circuits
- 3.10 Spanning Trees in a Weighted Graph

**Unit 4. Cut-Sets and Cut-Vertices**

**[06 Lectures]**

- 4.1 Cut-Sets
- 4.2 Some Properties of a Cut-Set
- 4.3 All Cut-Sets in a Graph
- 4.4 Fundamental Circuits and Cut-Sets
- 4.5 Connectivity and Separability

**Recommended Book :**

1. Narsingh Deo, "Graph Theory with Applications to Engineering and Computer Science"  
Printice-Hall, of India Pvt. Lt. New Delhi.

Unit 1 : Chapter 1: Sec.1.1 to 1.5

Unit 2: Chapter 2: Sec. 2.1 to 2.10 (Excluding 2.3)

Unit 3: Chapter 3: Sec. 3.1 to 3.10 (Excluding 3.9)

Unit 4: Chapter 4 : Sec. 4.1 to 4.5

**Reference books:**

1. John Clark and Derek Holton, A First Look at Graph Theory (Allied Publishers)
2. Robin J. Wilson, Introduction to Graph Theory, Fourth Edition (low price edition)
3. Introduction to Graph Theory, Douglas West 2nd edition.
4. A Textbook of Graph Theory, Balakrishnan, R., Ranganathan, K.

**Outcomes of Course:**

**Upon completion of the course, the students will achieve the following.**

- (i) **The mathematical maturity of students in their current and future courses shall develop.**

- (ii) The student develops theoretical, applied and computational skills.**
- (iii) The student gains confidence in proving theorems and solving problems.**

### **MT 233: Mathematics Practical**

#### **(Practicals based on the applications of articles in MT - 231 and MT - 232)**

In Semester-III, we should conduct 4 written practical and 2 practical on maxima software for each paper MT-231 and MT-232.

#### **List of Practical**

Practical 1 : Problems on Unit 1(Written) from MT-231.

Practical 2 : Problems on Unit 2 (Written) from MT-231.

Practical 3 : Problems on Unit 3 (Written) from MT-231.

Practical 4 : IProblems on Unit 4 (Written) from MT-231.

Practical 5 : Problems on unit 1 and unit 2 from MT-231 using maxima software.

Practical 6 : Problems on Unit 3 and Unit 4 from MT-231 using maxima software.

Practical 7 : Problems on Unit 1 (Written) from MT-232.

Practical 8 :Problems on Unit 2 (Written) from MT-232.

Practical 9 : Problems on Unit 3 (Written) from MT-232.

Practical 10 : IProblems on Unit 4 (Written) from MT-232.

Practical 11 : Problems on unit 1 and unit 2 from MT-232 using maxima software.

Practical 12 : Problems on Unit 3 and Unit 4 from MT-2322 using maxima software.

#### **Note:**

1. The soft copy of practicals on maxima software will be prepared and provided by the Board of Studies in mathematics.
2. Practicals on maxima software can be performed on computer only.
3. Practical examination of 25 marks on written problems, 10 marks for problems on maxima software ( 5 marks for writing syntax and 5 marks to perform the same on computer).



**Semester - IV**  
**MT-241: Linear Algebra**

**Unit-1: Matrices and System of Linear Equations** [06 lectures]

- 1.1 Row echelon form of a matrix, reduced row echelon form of a matrix.
- 1.2 Definition of rank of a matrix using row echelon or row reduced echelon form.
- 1.3 System of linear equations- Introduction, matrix form of linear system, definition of row equivalent matrices.
- 1.4 Consistency of homogeneous and non-homogeneous system of linear equations using rank, condition for consistency.
- 1.5 Solution of System of Equations: Gauss elimination and Gauss-Jordan elimination method, examples.

**Unit-2: Vector Spaces-I** [10 lectures]

- 2.1 Definition and Examples.
- 2.2 Subspaces.
- 2.3 Linear Dependence and Independence.
- 2.4 Basis of Vector Space

**Unit-3: Vector Spaces-II** [08 lectures]

- 3.1 Dimension of a Vector Space.
- 3.2 Row, Column and Null Space of a matrix.
- 3.3 Rank and nullity.

**Unit-4: Linear Transformations** [12 lectures]

- 4.1 Definition and Examples, Properties, Equality.
- 4.2 Kernel and range of a linear Transformation
- 4.3 Rank-Nullity theorem.
- 4.4 Composite and Inverse Transformation.
- 4.5 Matrices and Linear Transformation.
- 4.6 Basic Matrix Transformations in  $\mathbb{R}^2$  and  $\mathbb{R}^3$
- 4.7 Linear Isomorphism.

**Text Book::**

**Howard Anton, Chris Rorres, Elementary Linear Algebra, Application Version, Ninth Edition, Wiley, 11<sup>th</sup> edition.**

Unit-1: Chapter-1: Sec. 1.1, 1.2.

Unit-2: Chapter- Sec. 4: 4.1 to 4.4.

Unit-3: Chapter- Sec. 4: 4.5, 4.7, 4.8

Unit- 4: Chapter- Sec.8: 8.1 to 8.4, 1.8, 4.9.

**Reference Books:**

- (1) K. Hoffman and R. Kunze, Linear Algebra, 2<sup>nd</sup> edition(2014), Prentice Hall of India, New Delhi
- (2) Steven J. Leon, Linear Algebra with Applications, 4<sup>th</sup> edition(1994), Prentice Hall of India. New Delhi
- (3) Vivek Sahai, Vikas Bist, Linear Algebra, 4<sup>th</sup> Reprint 2017, Narosa Publishing House, New Delhi
- (4) Promode Kumar Saikia, Linear Algebra, 2009, Pearson, Delhi
- (5) S. Lang, Introduction to Linear Algebra, 2<sup>nd</sup> edition,1986, Springer-Verlag, New York, Inc.

**MT 242(A): Vector Calculus**

**Unit 1: Vector-Valued Functions** **[08 lectures]**

- 1.1 Curves in Space, Limits and Continuity, Derivatives and Motion, Differentiation Rules for Vector Function, Vector Functions of Constant Length.
- 1.2 Integrals of Vector Functions.
- 1.3 Arc Length along a Space Curve, Speed on a Smooth Curve, Unit Tangent Vector.
- 1.4 Curvature of a Plane Curve, Circle of Curvature for Plane Curves, Curvature and Normal Vectors for a Space Curve.

**Unit 2: Integrals** **[12 Lectures]**

- 2.1 Line Integral of Scalar Functions, Additivity, Line integral in the Plane.
- 2.2 Vector Fields, Gradient Fields, Line Integral of Vector Fields, Line Integrals with respect to  $dx$ ,  $dy$ ,  $dz$ .
- 2.3 Work done by a Force over a Curve in Space, Flow Integrals and Circulation for Velocity Fields, Flow across the Simple Closed Plane Curve.
- 2.4 Path Independence, Conservative and Potential Functions.
- 2.5 Divergence, Two forms for Green's Theorem, Green's Theorem in the Plane (Proof for special regions),

**Unit 3: Surface Integrals** **[08 Lectures]**

- 3.1 Parameterizations of Surfaces, Implicit surfaces.
- 3.2 Surface integrals, Orientation of Surfaces.
- 3.3 Surface Integrals of Vector Fields.

**Unit 4: Applications of Integrals** **[08 Lectures]**

- 4.1 The Curl Vector Field, Stokes' Theorem(without proof), Conservative Fields and Stokes' Theorem.

4.2 Divergence in three Dimensions, Divergence Theorem (without proof).

4.3 Unifying the Integral Theorems.

**Text Book:**

- Thomas' Calculus (14<sup>th</sup> Edition) by Hass, Heil, Weir, Pearson Indian Education Services Pvt. Ltd.  
Unit 1: Chapter 13: Sec- 13.1, 13.2, 13.3, 13.4  
Unit 2: Chapter 16: Sec-16.1, 16.2, 16.3, 16.4  
Unit 3: Chapter 16: Sec- 16.5, 16.6  
Unit 4: Chapter 16: Sec- 16.7, 16.8

**Reference books:**

- (1) Basic Multivariable Calculus by J.E. Marsden, A.J. Tromba, A. Weinstein, Springer Verlag (Indian Edition)
- (2) Advanced Calculus by M.R. Spiegel, Schaum Series.
- (3) Advanced Calculus (2<sup>nd</sup> Edition) by D.V. Widder, Prentice Hall of India, New Delhi (1944).
- (4) Advanced Calculus by John M. H. Olmsted, Eurasia Publishing House, New Delhi (1970)
- (5) Calculus Vol. II (2<sup>nd</sup> Edition) by T.M. Apostol, John Wiley, New York (1967).

**MT-242(B): Dynamical Systems**

**Unit 1: Eigenvalues and Eigenvectors** [08 Lectures]

- 1.1 Eigenvalues and Eigenvectors
- 1.2 Diagonalisation (matrices with real and distinct eigenvalues)

**Unit 2: First-Order Equations and Planar Linear Systems** [12 Lectures]

- 2.1 The Simplest Example
- 2.2 The Logistic Population Model
- 2.3 Second-Order Differential Equations
- 2.4 Planar Systems
- 2.5 Preliminaries from Algebra
- 2.6 Planar Linear Systems
- 2.7 Eigenvalues and Eigenvectors
- 2.8 Solving Linear Systems
- 2.9 The Linearity Principle.

**Unit 3: Phase Portraits for Planar Systems** [08 Lectures]

- 3.1 Real Distinct Eigenvalues
- 3.2 Complex Eigenvalues
- 3.3 Repeated Eigenvalues
- 3.4 Changing Coordinates

**Unit 4: Classification of Planar Systems and Exponential of a matrix** [08 Lectures]

4.1 The Trace-Determinant Plane

4.2 Exponential of a matrix.

**Textbooks :**

**1) Elementary Linear Algebra by Howard Anton and Chris Rorres (9<sup>th</sup> edition ), Applications Version.**

Unit 1: Chapter 7 : Section 7.1 ( Examples, Theorems with Statements only ) , Section 7.2 (  $2 \times 2$  and  $3 \times 3$  matrices with real and distinct eigenvalues, Theorems with Statements only )

**2) Differential Equations, Dynamical Systems and An Introduction to Chaos (2<sup>nd</sup> edition) by Morris Hirsch, Stephen Smale and Robert Devaney, Academic Press.**

Unit 2: Chapter 1 : Section - 1.1 to 1.2, Chapter 2 : Section - 2.1 to 2.7.

Unit 3: Chapter 3 : Section, 3.1 to 3.4,

Unit 4: Chapter 4 :Section 4.1, Chapter 6 : Section 6.4 (  $2 \times 2$  matrices with distinct real, repeated real and complex eigenvalues,  $3 \times 3$  matrices with distinct real eigenvalues).

**Reference Books :**

1. K.B.Datta, Matrix and Linear Algebra, Prentice hall of India Pvt.Ltd, New Delhi 2000.

2. Differential Equations and Dynamical Systems (Third Edition) by Lawrence Perko, Texts in Applied Mathematics 7, Springer.

**Outcomes of Course:**

**Upon completion of the course, the students will achieve the following.**

- (i) The mathematical maturity of students in their current and future courses shall develop.**
- (ii) The student develops theoretical, applied and computational skills.**
- (iii) The student gains confidence in proving theorems and solving problems.**

**MT 243: Mathematics Practical**

**(Practical based on the applications of articles in MT- 241 and MT -242)**

In Semester-IV, we should conduct 4 written practical and 2 practical on maxima software for each paper MT-241 and MT-242.

**List of Practical**

Practical 1 : Problems on Unit 1 (Written) from MT-241.

Practical 2 : Problems on Unit 2 (Written) from MT-241.

Practical 3 : Problems on Unit 3(Written) from MT-241

Practical 4 : Problems on Unit 4(Written) from MT-241.

Practical 5 : Problems on unit 1 and unit 2 from MT-241 using maxima software.

Practical 6 : Problems on Unit 3 and Unit 4 from MT-241 using maxima software.

Practical 7 : Problems on Unit 1 (Written) from MT-242.

Practical 8 : Problems on Unit 2 (Written) from MT-242.

Practical 9 : Problems on Unit 3(Written) from MT-242.

Practical 10 : Problems on Unit 4(Written) from MT-242.

Practical 11 : Problems on unit 1 and Unit 2 from MT-242 using maxima software.

Practical 12 : Problems on Unit 3 and Unit 4 from MT-242 using maxima software.

**Note:**

1 The soft copy of practical on maxima software will be prepared and provided by the Board of Studies in mathematics.

2. Practicals on maxima software shall be performed on computer only..

3. Practical examination 25 marks on written problems, 10 marks for problems on maxima software ( 5 marks for writing syntax and 5 marks to perform the same on computer only).

**Modalities For Conducting The Practical and The Practical Examination:**

1) There will be one 4 hour 10 minutes (250 minutes) practical session for each batch of 15 students per week.

2) The College will conduct the Practical Examination at least 15 days before the commencement of the Main Theory Examination. The practical examination will consist of written examination of 20 marks, 10 marks on maxima software and oral examination of 05 marks.

3) There will be external examiner; the practical exam will be of the duration of 3hours.

4) The teacher will set a question paper at the time of paper setting meeting conducted by Savitribai Phule Pune University, Pune based on pattern as follows

**Q1.** Any 2 out of 4 each question of 5 marks on paper - I.

**Q2.** Any 2 out of 4 each question of 5 marks on paper - II.

**Q3.** (a) Any 1 out of 2 each question of 5 marks on maxima software from paper – I.

(b) Any 1 out of 2 each question of 5 marks on maxima software from paper – II.

5) Each student will maintain a journal to be provided by the college.

7) The internal 15 marks will be given on the basis of journal prepared by student and the cumulative performance of student at practical.

8) It is recommended that concept may be illustrated using computer software maxima and graphing calculators wherever possible.

9) Study tours may be arranged at places having important mathematical institutes or historical places.

**10) Special Instruction:**

- a) There should be well equipped mathematics practical laboratory of size 20x20 sq. fts containing at least 20 computers.
- b) Examiners should set separate question papers, solutions and scheme of marking for each batch and claim the remuneration as per rule.
- c) Before starting each practical necessary introduction, basic definitions, intuitive inspiring ideas and prerequisites must be discussed.



# **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Three Year B. Sc. Degree Program in Physics**

**(Faculty of Science & Technology)**

**S. Y. B. Sc. (Physics)**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2020-2021**

**SEMISTER-III****Course code and title: PHY-231: Mathematical Methods in Physics-I****Total Lectures: 36****(Credits-02)****Learning Outcomes:** After the completion of this course students will be able to

- Understand the complex algebra useful in physics courses.
- Understand the concept of partial differentiation.
- Understand the role of partial differential equations in physics.
- Understand vector algebra useful in mathematics and physics.
- Understand the concept of singular points of differential equations.

**1. ComplexNumbers****(9L)**

- 1.1 Introduction to complex numbers
- 1.2 Rectangular, polar and exponential forms of complex numbers
- 1.3 Argand diagram
- 1.4 Algebra of complex numbers using Argand diagram
- 1.5 De-Moivre's Theorem (Statement only)
- 1.6 Power, root and log of complex numbers
- 1.7 Trigonometric, hyperbolic and exponential functions
- 1.8 Applications of complex numbers to determine velocity and acceleration in curved motion.
- 1.9 Problems.

**2. Partial Differentiation****(9L)**

- 2.1 Definition of partial differentiation
- 2.2 Successive differentiation
- 2.3 Total differentiation
- 2.4 Exact differential
- 2.5 Chain rule
- 2.6 Theorems of differentiation
- 2.7 Change of variables from Cartesian to polar co-ordinates
- 2.8 Conditions for maxima and minima(without proof)
- 2.9 Problems.

**3. Vector Algebra and Analysis****(12L)**

- 3.1 Introduction to scalars and vectors, dot product and cross product of two vectors and their physical significance. (Revision)



3.2 Scalar triple product and its geometrical interpretation

3.3 Vector triple product and its proof

3.4 Scalar and vector fields

3.5 Differentiation of vectors with respect to scalar

3.6 Vector differential operator and Laplacian operator

3.7 Gradient of scalar field and its physical significance

3.8 Divergence of scalar field and its physical significance

3.9 Curl of vector field and its physical significance.

3.10 Vector Identities.

a.  $\nabla \times (\nabla \Phi) = 0$

b.  $\nabla \cdot (\nabla \times \mathbf{V}) = 0$

c.  $\nabla \cdot (\nabla \Phi) = \nabla^2 \Phi$

d.  $\nabla \cdot (\Phi \mathbf{A}) = \nabla \Phi \cdot \mathbf{A} + \Phi (\nabla \cdot \mathbf{A})$

e.  $\nabla \times (\Phi \mathbf{A}) = \Phi (\nabla \times \mathbf{A}) + (\nabla \Phi) \times \mathbf{A}$

f.  $\nabla \cdot (\mathbf{A} \times \mathbf{B}) = \mathbf{B} \cdot (\nabla \times \mathbf{A}) - \mathbf{A} \cdot (\nabla \times \mathbf{B})$

3.11 Problems.

1.1 **4. Differential Equation** (6L)

4.1 Degree, order, linearity and homogeneity of differential equation.

4.2 Concept of Singular points. Example of singular points ( $x = 0$ ,  $x = x_0$  and  $x = \infty$ ) of differential equation.

4.3 Problems.

1.2 **Reference Books:**

1. Methods of Mathematical Physics by Laud, Takwale and Gambhir.
2. Mathematical Physics by B.D.Gupta.
3. Mathematical Physics by Rajput and Gupta.
4. Mathematical Methods in Physical Science by Mary and Boas.
5. Vector analysis by Spiegel and Murrey.
6. Mathematical Methods for Physicists by Arfken and Weber. ( 5<sup>th</sup> Edition )
7. Fundamentals of Mathematical Physics by A.B.Gupta.
8. Vector Analysis by Seymour Lipschutz and Dennis Spellman.

**Course code and title: PHY-232: Electronics****Total Lectures: 36****(Credits-02)**

**N.B:** This course is for students **who have not taken Electronic Science as one of the subjects at F. Y. B. Sc.**

**Learning outcomes:**

On successful completion of this course the students will be able to

- Apply different theorems and laws to electrical circuits.
- Understand the relations in electricity.
- Understand the parameters, characteristics and working of transistors.
- Understand the functions of operational amplifiers.
- Design circuits using transistors and applications of operational amplifiers.
- Understand the Boolean algebra and logic circuits.

**1. Network Theorem****(6L)****1.1** Krichhoff's Law**1.2** Voltage and current Divider Circuit**1.3** Thevenin's Theorem**1.4** Norton's Theorem**1.5** Superposition Theorem**1.6** Maximum Power transfer theorem (With proof)**1.7** Problems**2. Study of Transistor****(12L)****2.1** Bi-junction Transistor

1. Revision of bipolar Junction Transistor, Types, Symbol and basic action.
2. Configuration (Common Base, Common Emitter and Common Collector)
3. Current Gain Factors ( $\alpha$  and  $\beta$ ) and their relations
4. Input, Output and transfer Characteristic of CE Configuration
5. Biasing method and Voltage Divider
6. DC Load line (CE), Operating Point (Q- point)
7. Transistor as a switch
8. Problems

**2.2** Uni-Junction Transistor

1. Symbol, Types, Construction, Working Principle, I-V characteristics, Specifications and Parameters of Uni-Junction Transistor (UJT)
2. UJT as a relaxation Oscillator.

**3. Operational Amplifiers and Application****(12 L)****3.1 Operational Amplifiers**

1. Introduction
2. Ideal and practical Characteristics
3. Operational Amplifier: IC741- Block Diagram and Pin diagram
4. Concept of Virtual Ground
5. Inverting and Non-inverting operational amplifiers with concept of gain
6. Operational amplifier as an adder and subtractor
7. Problems

**3.2 Oscillators**

1. Concept of Positive and negative feed back
2. Barkhausein Criteria for an oscillator
3. Construction, working and application of phase shift oscillator using IC741
4. Problems

**4. Number System and Logic Gates****(6 L)**

1. Number System: Binary, Binary coded Decimal (BCD), Octal, Hexadecimal
2. Addition and Subtraction of binary numbers and binary fractions using one's and two's complement
3. Basic Logic gates (OR, AND, NOT)
4. Derived gates: NOR, NAND, EXOR, EXNOR, with symbols and truth table
5. Boolean Algebra
6. De Morgan's theorem and its verification
7. Problems

**Reference Books-**

1. **Electronic Principles**, Malvino, 7<sup>th</sup> Edition Tata Mc-Graw Hills publication.
2. **Principles of Electronics**, V.K. Mehta, S. Chand publication.
3. **Op-amp and Linear Integrated Circuit**, Ramakant Gaikwad, Prentice Hall of India publication.
4. **Integrated Circuit**, Botkar, Khanna Publication, New Delhi.
5. **Digital Principles and Application**, Malvino and Leech, Tata Mc-Graw Hills publication.

**Course code and title: PHY-232: Instrumentation****Total Lectures: 36****(Credits-02)**

**N.B:** This course is for students **who have taken Electronic Science as one of the subjects at F. Y. B. Sc.**

**Learning outcomes:**

After successful completion of this course, the student will be able to

- Understand the concept of measurement.
- Understand the performance of measuring instruments.
- Design experiments using sensors.

**1. Fundamental of measurement****(8L)****1.1** Aims of measurement**1.2** Functional elements of typical measurement system (Block diagram and its explanation).**1.3** Standards of measurement and its classification. (International, primary or national, secondary and working standards).**1.4** Static characteristics: Accuracy, Precision, Sensitivity, Linearity, Resolution, Drift and Hysteresis.**1.5** Dynamic characteristics concepts: First and Second order instruments, Examples of first order: Resistance thermometer and thermal element, Example of 2<sup>nd</sup> order: U-tube Manometer.**1.6** Errors in measurement and its classifications.**1.7** Problems**2. Transducers****(12L)****2.1** Classification of Transducers and its characteristics**2.2 Displacement Transducer****a)** Resistive Type: Linear and Angular (Rotary) Potentiometer, Strain Gauge: Bonded and Unbonded**b)** Inductive Type: Self inductive: Variable number of turns, Variable Reluctance Mutual Inductive: LVDT**c)** Piezoelectric Type: Quartz Crystal**2.3 Force Transducer:** Cantilever beam, Column type devices**2.4 Temperature Measurement**

Scales for temperature: Celsius, Kelvin and Fahrenheit

Temperature Measurement Techniques

**a.** Non-electrical: Liquid filled thermometer and bimetallic thermometer**b.** Electrical Methods:

- i. Platinum Resistance Thermometer
- ii. Thermistor: PTC and NTC with characteristics
- iii. Thermocouple: Seebeck effect and Peltier effect,  
Types of Thermocouple

### **3. Measurement of Pressure**

**(8L)**

- 3.1 Unit of pressure, Concept of vacuum, Absolute gauge and differential pressure,
- 3.2 Elastic Transducer- Diaphragm, Corrugated Diaphragm, Bellows, Bourdon Tube
- 3.3 Electric Type- LVDT, Strain gauge
- 3.4 Pressure Transducer- Calibration by dead weight tester Method
- 3.5 Problems

### **4. Signal Conditioning and Processing**

**(8L)**

- 4.1 Current to voltage, Voltage to current convertors, buffer amplifier, S/H Amplifier and Characteristics, Acquisition time, Aperture time, Drop rate
- 4.2 Filters: First order LPF and HPF with design,
- 4.3 Instrumentation Amplifier (Using 3 op-amp)

#### **Reference Books:**

1. **Instrumentation Device and System**, Rangan, Mani and Sarma, Tata Mc Graw Hill
2. **Instrumentation Measurement and Analysis**, Nakra, Choudhari, Tata Mc Graw Hill India publication.
3. **Sensors and Transducers**, D. Patranabis, PHI publications.
4. **Op-Amps and Linear Integrated Circuits**, by Ramakant A. Gayakwad, Pearson India publications.
5. **Process control Instrumentation Technology**, C.D. Johnson, PHI publications.

**Course code and title: PHY-233: Practical Course (Laboratory 2A)****Learning Outcome:****(Credits-02)**

After completing this practical course students will be able to

- Use various instruments and equipment.
- Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
- Investigate the theoretical background of an experiment.
- Setup experimental equipment to implement an experimental approach.
- Analyze the data, plot appropriate graphs and reach conclusions from data analysis.
- Work in a group to plan, implement and report on a project/experiment.
- Keep a well-maintained and instructive laboratory logbook.

**Total Experiments to be performed by a student: (A) 10 OR (B) 8 + Two Activities**

**(A):** At least **6** experiments from **Section I** and **2** experiments from **Section II**

**(B):** At least **4** experiments from **Section I** and **2** experiments from **Section II** + **Any Two Activities**

**Section I: Electronics/Instrumentation**

1. Circuit Theorems (Thevenin's, Norton's and Maximum Power Transfer Theorems)
2. Transistor Characteristics (Input and Output characteristics of CE Configuration)
3. Single Stage Transistor Amplifier
4. Study of Rectifiers (Half, Full Wave and Bridge) with different filters
5. I-V Characteristics of UJT/ UJT as Relaxation Oscillator
6. Zener as a Regulator (Line and Load Regulation)
7. Op-amp as inverting and non-inverting amplifier
8. Study of Wein Bridge / Phase Shift Oscillator using 741
9. Op-amp as an adder and subtractor
10. Study of logic gates and verification of de Morgan's theorems
11. To measure displacement using potentiometer/variable inductor/ variable capacitor
12. Use of CRO (AC/DC Voltage measurement, Frequency measurement)
13. To measure force using load cell
14. To measure pressure using elastic diaphragm (In Variable Capacitor / Bourdon Tube)

15. To measure magnetic field using Hall Probe for a system of ring magnets

## Section II: Use of Computer

1. Plotting of various trigonometric functions using spread sheet/any graphic software viz. Microsoft Excel, Origin:  $\sin x$ ,  $\cos x$ ,  $\tan x$ ,  $e^x$ ,  $e^{-x}$ ,  $\log x$ ,  $\ln x$ ,  $x^n$
2. Plotting of conic sections using spreadsheet /any graphic software viz. Microsoft Excel, Origin: circle, ellipse, parabola, hyperbola
3. Inverse, determinant of matrix, solution of linear equations using Microsoft Excel or Origin software

## Additional Activities (Any two)

1. Plotting of any **two** graphs using spreadsheets (of data obtained from various experiments performed by the student)
2. Any **two** computer aided demonstrations (Using computer simulations or animations)
3. Demonstrations-Any **two** demonstrations
4. Study tour with report
5. Mini project

**SEMISTER-IV****Course code and title: PHY-241: Oscillations, Waves, and Sound****Total Lectures: 36****(Credits-02)****Learning Outcomes:**

On completion of this course, the learner will be able:

- To study underlying principles of oscillations and its scope in development.
- To understand and solve the equations / graphical representations of motion for simple harmonic, damped, forced oscillators and waves.
- To explain oscillations in terms of energy exchange with various practical applications.
- To solve numerical problems related to undamped, damped, forced oscillations and superposition of oscillations.
- To study characteristics of sound, decibel scales and applications.

**1. Undamped Free Oscillations (7L)**

- 1.1 Different types of equilibria (static, dynamic, stable, unstable, and metastable equilibrium) – definitions only with examples.
- 1.2 Definitions of linear Simple Harmonic Motion (S.H.M) and angular S.H.M.
- 1.3 Differential equation for linear S.H.M. and its solution.
- 1.4 Composition of two perpendicular linear S.H.Ms. for frequency ratio 1:1 and 2:1 (analytical method).
- 1.5 Lissajous figures, their demonstration (optical and electrical method) and applications.
- 1.6 Problems.

**2. Damped Oscillations (7L)**

- 2.1 Introduction
- 2.2 Differential equation for damped harmonic oscillator and its solution, discussion of different cases.
- 2.3 Logarithmic decrement.
- 2.4 Average energy of damped harmonic oscillator.
- 2.5 Quality factor.
- 2.6 Application: LCR series circuit.
- 2.7 Problems.

**3. Forced Oscillations (8L)**

- 3.1 Introduction.
- 3.2 Differential equation for forced oscillations and its solution .
- 3.3 Resonance : mechanical, acoustic and electrical.
- 3.4 Velocity and Amplitude resonance.
- 3.5 Sharpness of resonance and half width.



- 3.6 Average energy of forced oscillator.
- 3.7 Quality factor of forced oscillator.
- 3.8 Relation between quality factor and bandwidth.
- 3.9 Application of forced oscillations- LCR series circuit.
- 3.10 Problems.

#### 4. Wave Motion

(6L)

- 4.1 Introduction.
- 4.2 Equation for longitudinal waves and it's solution (one dimension only).
- 4.3 Equation for transverse waves and it's solution (one dimension only).
- 4.4 Energy density and intensity of a wave.
- 4.5 Qualitative discussion of seismic waves and gravitational waves.
- 4.6 Problems.

#### 5. Sound and Doppler Effect

(8L)

- 5.1 Definition of sound Intensity, Loudness, Pitch, Quality and timbre.
- 5.2 Reverberation time and reverberation of hall.
- 5.3 Sabine's formula (without derivation).
- 5.4 Doppler effect in sound, Expression for apparent frequency in different cases.
- 5.5 Asymmetric nature of Doppler effect in sound.
- 5.6 Doppler effect in light, Symmetric nature of Doppler effect in light.
- 5.7 Applications: Radar, Speed of distant star, Rotational speed of binary star, Red Shift and Width of spectral line.
- 5.8 Problems.

#### Reference Books:

1. **Waves and Oscillations** by Stephenson.
2. **The Physics of Waves and Oscillations** by N. K. Bajaj, Tata McGraw- Hill, publication.
3. **Fundamentals of Vibrations and Waves** by S. P. Puri, Tata McGraw-Hill publication.
4. **A Text Book of Sound** by Subramanyam and Brijlal, Vikas Prakashan.
5. **Sound** by Mee, Heinmann Edition, London.
6. **Waves and Oscillations** - R.N. Chaudhari, New Age International (p) ltd.
7. **A Textbook on Oscillations, Waves and Acoustics** by M. Ghosh, and D. Bhattacharya, S. Chand and Company Ltd.

**Course code and title: PHY-242: Optics****Total Lectures: 36****(Credits-02)****Learning Outcomes:**

On successful completion of this course the students will be able to

- Acquire the basic concept of wave optics.
- Describe how light can constructively and destructively interfere.
- Explain why a light beam spread out after passing through an aperture
- Summarize the polarization characteristics of electromagnetic wave
- Understand the operation of many modern optical devices that utilize wave optics
- Understand optical phenomenon such polarization, diffraction and interference in terms of the wave model
- Analyze simple example of interference and diffraction.

**1. Geometrical optics (8L)**

- 1.1 Introduction to lenses and sign conventions.
- 1.2 Thin lenses: lens equation for convex lens
- 1.3 Lens maker equation
- 1.4 Concept of magnification, deviation and power of thin lens
- 1.5 Equivalent focal length of two thin lenses
- 1.6 Concept of cardinal points
- 1.7 Problems.

**2. Lens Aberrations (8 L)**

- 2.1 Introduction
- 2.2 Types of aberration: Monochromatic and chromatic
- 2.3 Types of monochromatic aberrations and their reductions
- 2.4 Types of chromatic aberrations
- 2.5 Achromatism: lenses in contact and separated by finite distance
- 2.6 Problems.

**3. Optical Instruments (6L)**

- 3.1 Introduction
- 3.2 Simple Microscope
- 3.3 Compound Microscope
- 3.4 Ramsden's eye piece
- 3.5 Huygens eye piece
- 3.6 Problems.

**4. Interference and Diffraction (8L)**

- 4.1 Introduction

4.2 Phase change on reflection. (Stokes treatment)

4.3 Interference due to wedge shaped thin film

4.4 Newton's ring

3.5 Diffraction types: Fresnel's diffraction and Fraunhofer's diffraction

4.6 Fraunhofer's diffraction at single slit

4.7 Plane diffraction grating, Rayleigh criterion for resolution

4.8 Problems

## 5. Polarization

(6L)

5.1 Introduction

5.2 Brewster's law

5.3 Law of Malus

5.4 Polarization by double refraction.

5.5 Nicol Prism

5.6 Problem

### Reference Books:

1. **Optics** by A. R. Ganesan, IV<sup>th</sup> edition, Pearson Education, E. Hetch.

2. **A Textbook of Optics** by N Subhramanyam, Brijlal, M. N. Avadhanulu, S. Chand Publication

3. **Physical Optics** by A.K. Ghatak, McMillan, New Delhi

4. **Fundamental of Optics** by F. A.Jenkins, H. E.White Mc Graw-Hill International edition

5. **Principles of Optics**, by D. S. Mathur, Gopal Press, Kanpur.

**Course code and title: PHY-243: Practical Course (Laboratory 2B)****Learning Outcome:****(Credits-02)**

After completing this practical course students will be able to

- Use various instruments and equipment.
- Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
- Investigate the theoretical background of an experiment.
- Setup experimental equipment to implement an experimental approach.
- Analyze the data, plot appropriate graphs and reach conclusions from data analysis.
- Work in a group to plan, implement and report on a project/experiment.
- Keep a well-maintained and instructive laboratory logbook.

**Total Experiments: (A) 10 OR (B) 8 + Two Activities**

**(A): 5 experiments from Section I and 5 experiments from Section II**

**(B): 4 experiments from Section I and 4 experiments from Section II + Any Two Activities**

**Section I: Oscillations, Waves and Sound**

1. Logarithmic decrement (in air and water).
2. Study of coupled oscillators comprising two simple pendulum (Mechanical) and determination of coupling coefficient.
3. 'g' by bar pendulum.
4. Study of musical scales using a signal generator and musical instruments.
5. Measurement of coefficient of absorption of sound for different materials (cork, thermocol, mica, paper etc.).
6. Study of Lissajous figures and determination of unknown frequency.
7. Determination of speed of sound by Quincke's method interferometer.
8. Directional characteristics of Microphone.
9. Velocity of sound by Phase shift method.
10. To determine the frequency of an electrically maintained tuning fork by stroboscopic method.
11. To Determine the velocity of sound in air at room temperature with Kundt's Tube.

**Section II: Optics**

1. Newton's Ring: Determination of wavelength of monochromatic light source ( $\lambda$ ).
2. Dispersive power of glass prism.
3. Total internal reflection using LASER beam and glass prism.
4. Diffraction at the edge of a razor blade.
5. Optical activity of sugar solution using polarimeter.
6. Goniometer to determine cardinal points and focal length.
7. To determine temperature of sodium flame.
8. Double refracting prism.
9. Determination of Cauchy's constant.

**1.3 Additional Activities (Any two)**

1. Plotting of any **two** graphs using spreadsheets (of data obtained from various experiments performed by the student).
2. Any **two** computer aided demonstrations (Using computer simulations or animations).
3. Demonstrations –Any **two** demonstrations.
4. Study tour with report.
5. Mini project.

**SavitribaiPhule Pune University**  
**(Formerly University of Pune)**

**Three Year B.Sc. Degree Program in Zoology**  
**(Faculty of Science & Technology)**

**S.Y.B.Sc. Zoology**  
**(w.e.f. June 2020)**

**As per**  
**Choice Based Credit System**

**Syllabusimplemented from**  
**Academic Year 2020-2021**

Preamble:

Zoology is one of the major subjects of Basic Sciences and deals with all aspects of animal biology. It includes an interesting range of highly diverse topics. A zoology student needs to gain understanding of many areas of the subject to keep pace with advancements in Life Sciences.

This under-graduate degree program has been designed by the Board of Studies in Zoology of SavitribaiPhule Pune University with a substantial component of what is needed from zoologists as a skilled career and what zoologists need to pursue for post-graduation and further academic studies. It follows the guidelines laid down by the University Grants Commission, New Delhi. This newly designed curriculum is a perfect blend of the classical aspects in Zoology and the advanced and more specialized areas.

This degree offers Discipline Specific Core Courses [CC] in Animal Systematics, Animal Ecology, Animal Cell biology, Applied Zoology, Pest Management, Histology, Biological Chemistry, Genetics, Developmental Biology, Parasitology, Medical & Forensic Zoology, Animal Physiology, Molecular Biology, Entomology, Techniques in Biology and Evolutionary Biology.

In addition to the Core Courses, Ability Enhancement Compulsory Courses [AECC] have been added in the second year i.e. Semester III and Semester IV of the undergraduate course. In the third year i.e. Semester V and Semester VI, Discipline specific Elective Courses [DSEC] and Skill Enhancement Courses [SEC] have been offered. The students, therefore, have an opportunity to take courses in Environment Awareness, Language communication: English/Marathi, Aquarium Management, Poultry Management and Environmental Impact Assessment. In Semester VI the students also have a course dedicated to Project work.

The syllabus has been framed in such a way that the student gains each year, a broader perspective of the subject as he progresses towards completion of the degree program. Field trips, Educational visits and the Project work have been included for the student to experience the applications of the theory learnt in the classroom.

After completion of the program, it is expected that students will understand and appreciate: animal diversity, few applications of Zoology, the structure, functions and life processes at cellular, tissue, organ and system level, significance of evolution, and basic concepts of human health. The students would also gain an insight into laboratory and field work through the practical course, field work and the project.

While presenting this new syllabus to the teachers and students of F. Y. B. Sc. Zoology, I am extremely happy to state that efforts have been made to seek inputs of all the stake holders to make it more relevant.

The new course that will be effective from the academic year 2019- 2020 and will follow the Choice Based Credit System in a Semester mode. It has been primed keeping in view the distinctive requirements of B. Sc. Zoology students. The contents have been drawn-up to accommodate the widening prospects of the discipline of Life Sciences. They reflect the changing prerequisites of the students. This program has been introduced with 132 credits for the subject group while 08 credits to earn from any of the 08 groups offering a range of curricular, cocurricular and extracurricular activities. This pattern has been specially aimed towards the overall development of the students'. The calculation of credits and CGPA will be as per the guidelines of the University. The B. Sc. Zoology program provides an appropriate blend of classical and applied aspects of the subject. This newly designed curriculum will allow students to acquire the skill in handling scientific instruments planning and performing in the laboratory and exercising critical judgement, independent thinking and problem solving skills.

The Syllabus has been revised with the following aims

- To foster curiosity in the students for Zoology
- To create awareness amongst students for the basic and applied areas of Zoology
- To orient students about the importance of abiotic and biotic factors of environment and their conservation.
- To provide an insight to the aspects of animal diversity.
- To inculcate good laboratory practices in students and to train them about proper • handling of lab instruments.

## Course Structure:

### Course Structure with Credit Distribution of the Undergraduate Science Program in Zoology

Course	Course Code and Name of the Course		Credits
<b>F. Y. B. Sc.</b>	<b>SEMESTER I</b>	<b>SEMESTER II</b>	
CC	ZO - 111 Animal Diversity I	ZO-121 Animal Diversity II	2 + 2
CC	ZO - 112 Animal Ecology	ZO-122 Cell Biology	2 + 2
CC	ZO - 113 Zoology Practical Paper	ZO-123 Zoology Practical Paper	1.5 +1.5
<b>S. Y. B. Sc.</b>	<b>SEMESTER III</b>	<b>SEMESTER IV</b>	
CC	ZO - 231 Animal Diversity III	ZO - 241 Animal Diversity IV	2 + 2
CC	ZO - 232 Applied Zoology I	ZO - 242 Applied Zoology II	2 + 2
CC	ZO - 233 Zoology Practical Paper	ZO - 243 Zoology Practical Paper	2 + 2
AECC	EVS 231- Environment Awareness	EVA 241- Environment Awareness	2 + 2
AECC	LA 231 - English/Marathi	LA 241 - English /Marathi	2 + 2
<b>T. Y. B. Sc.</b>	<b>SEMESTER V</b>	<b>SEMESTER VI</b>	
DSEC	ZO - 351 Pest Management	ZO - 361 Medical & Forensic Zoology	2 + 2
DSEC	ZO - 352 Histology	ZO - 362 Animal Physiology	2 + 2
DSEC	ZO - 353 Biological Chemistry	ZO - 363 Molecular Biology	2 + 2
DSEC	ZO - 354 Genetics	ZO - 364 Entomology	2 + 2
DSEC	ZO - 355 Developmental Biology	ZO - 365 Techniques in Biology	2 + 2
DSEC	ZO - 356 Parasitology	ZO - 366 Evolutionary Biology	2 + 2
DSEC	ZO- 357 Zoology Practical Paper 1	ZO - 367 Zoology Practical Paper 1	2 + 2
DSEC	ZO- 358 Zoology Practical Paper 2	ZO - 368 Zoology Practical Paper 2	2 + 2
DSEC	ZO- 359 Zoology Practical Paper 3	ZO - 369 Zoology Practical Paper 3	2 + 2
SEC	ZO - 3510 Aquarium Management	ZO- 3610 Environmental Impact Assessment	2 + 2
SEC	ZO - 3511 Poultry Management	ZO - 3611 Project	2 + 2



## Detailed Syllabus of S. Y. B. Sc.

Paper	Semester III Course Code & Course	Credits	No of Hours	Marks (Internal + University)	Semester IV Course Code & Course	Credits	No of Hours	Marks (Internal + University)
I	ZO - 231 Animal Diversity III	02	30	15+ 35= 50	ZO - 241 Animal Diversity IV	02	30	15+ 35 = 50
II	ZO - 232 Applied Zoology I	02	30	15+ 35 = 50	ZO - 242 Applied Zoology II	02	30	15+ 35 = 50
III	ZO - 233 Zoology Practical Paper	02	14 Practicals	15+ 35 = 50	ZO - 243 Zoology Practical Paper	02	14 Practicals	15+ 35 = 50
AECC	EVS 231- Environme nt Awareness	02	30	15+ 35 = 50	EVA 241- Environmen t Awareness	02	30	15+ 35 = 50
AECC	LA 231- English/ Marathi	02	30	15+ 35 = 50	LA 241- English/ Marathi	02	30	15+ 35 = 50

### Animal Diversity III & IV

#### Objectives –

1. To understand the origin and advancement of higher vertebrates (tetrapoda).
2. To understand general characters of different groups of higher vertebrates.
3. To classify vertebrates and to become able to understand the possible group of vertebrates observed in nature.
4. To understand different behaviours and adaptations in higher vertebrates
5. To understand affinities among different groups of higher vertebrates.

#### Learning Outcomes for the course -

1. The students will be able to understand, classify and identify the diversity of higher vertebrates.
  2. The students will be able to understand the complexity of higher vertebrates
  3. The students will be able to understand different life functions of higher vertebrates.
  4. The students will be able to understand the linkage among different groups of higher vertebrates.
  5. The student will become aware regarding his role and responsibility towards nature as a protector, to understand his role as a trustee and conservator of life which he has achieved by learning, observing and understanding life.
-

**Course Title: Animal Diversity - III**

**Course Code: ZO – 231,**

**Semester - III**

**(2 credits – 30 Hours)**

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<b>No.</b>	<b>Title &amp; Contents</b>	<b>Number of Lectures</b>
	<b>1. Introduction to Phylum Chordata –</b>	<b>(03)</b>
1.1	Origin & Ancestry of Chordates.	
1.2	Comparative account of fundamental characters of Chordates with Non Chordates.	
1.3	Salient features of Phylum Chordata.	
1.4	Classification of Phylum Chordata upto classes – Pisces, Amphibia, Reptilia, Aves, Mammalia.	
	<b>2. Introduction to Group – Protochordata.</b>	<b>(03)</b>
2.1	Salient features of Protochordata.	
2.2	Salient features of subphylum with two example each - Names only. Hemichordata – <i>Balanoglossus</i> and <i>Rhabdopleura</i> , Urochordata - <i>Herdmania</i> and <i>Salpa</i> , Cephalochordata – <i>Branchiostoma</i> (Amphioxus) and <i>Asymmetron</i> .	
	<b>3. Introduction to subphylum – Vertebrata</b>	<b>(02)</b>
3.1	Salient features of Vertebrata.	
3.2	Introduction and General characters of sections with two examples - Names only. Agnatha – <i>Petromyzon</i> & <i>Myxine</i> & Gnathostomata – Frog & <i>Labeo</i> .	
	<b>4. Introduction to Class – Pisces</b>	<b>(04)</b>
4.1	Salient features of Class – Pisces.	
4.2	Introduction and Salient features of sections with two examples - Names only. Class – Chondrichthyes – <i>Scoliodon</i> and <i>Chimaera</i> & Osteichthyes – <i>Labeo</i> and <i>Catla</i>	
4.3	Types of Scales in Fishes.	
4.4	Types of Fins in Fishes.	

## 5. Introduction to Class – Amphibia

(03)

5.1 Salient features of Class – Amphibia.

5.2 Introduction to order – Apoda–*Ichthyophis*, Urodela–*Salamandra*(Salamander) and  
Annura - *Rana*.

5.3 Parental care in Amphibia.

## 6. Study of *Scoliodon*

(15)

<i>Scoliodon</i> – 6.1 - Systematic position, Geographical distribution, Habit, Habitat	01
6.2 - External characters	01
6.3 - Digestive System, Food and feeding mechanism.	02
6.4 - Respiratory System – Structure of Holobranch only.	02
6.5- External & Internal Structure of heart, Working of heart.	02
6.6 - Nervous System – Brain only.	03
6.7 - Male urinogenital system & Female reproductive System.	03
6.8- Yolk sac placenta.	01

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## **Applied Zoology I and II**

### **Objectives :**

1. To understand the basic life cycle of the honeybees, beekeeping tools and equipments.
2. To learnfor managing beehives for honey production and pollination.
3. To understand the basic information about fishery, cultural and harvesting methods of fishes.
4. To understand fish preservation techniques.
5. To understand the biology, varieties of silkworms and the basic techniques of silk production and harvesting of cocoons.
6. To learn the different silkworm species and their host plants.
7. To study types of agricultural pests and Major insect pests of agricultural importance.
8. To study Pest control practices.

### **Learning Outcomes of the course:**

1. The learner understands the basics about beekeeping tools, equipment, and managing beehives.
  2. The learner understands the basic information about fishery, cultural and harvesting methods of fishes and fish preservation techniques.
  3. The learner understands the biology, varieties of silkworms and the basic techniques of silk production.
  4. The learner understands the types of agricultural pests, Major insect pests of agricultural importance and Pest control practices.
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## Course Title - Applied Zoology I

Course Code - ZO - 232

Semester III

2 Credits - 30 lectures

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<b>1) Sericulture:</b>	<b>16</b>
1.1 An introduction to Sericulture, Study of different types of silk moths, their distribution, Taxonomic position and varieties of silk produced in India : Mulberry, Tassar, Eri and Muga silk moths.	02
1.2 External Morphology and life cycle of <i>Bombyx mori</i> .	02
1.3 Cultivation of mulberry :	
a) Varieties for cultivation,	
b) Rain fed and irrigated mulberry cultivation- Fertilizer schedule, Pruning methods and leaf yield.	02
1.4 Harvesting of mulberry : a) Leaf plucking, b) Branch cutting,	
c) Whole shoot cutting.	01
1.5 Silk worm rearing :	
a) Varieties for rearing,	
b) Rearing house,	
c) Rearing techniques,	
d) Important diseases and pests.	03
1.6 Preparation of cocoons for marketing.	01
1.7 Post harvest processing of cocoons :	
a) Stiffling, sorting, storage, deflossing and riddling,	
b) Cocoon cooking, reeling equipment and reeling, washing and polishing.	03
1.8 Biotechnological and biomedical applications of silk.	02
<b>2) Agricultural Pests and their control:</b>	<b>14</b>
2.1 An introduction to Agricultural Pests, types of pests (agricultural, store grain, veterinary).	01
2.1 Major insect pests of agricultural importance ( Marks of identification, life cycle, nature of damage and control measures).	06
a) Jowar stem borer,	
b) Red cotton bug,	
c) Brinjal fruit borer,	
d) Mango stem borer,	
e) Blister beetle,	
f) Rice weevil,	

g) Pulse beetle,	
h) Tick.	
2.3 Non insect pests: Rats, Crabs, Snails, and Squirrels	01
2.4 Pest control practices in brief: Cultural control, Physical control, Mechanical control, Chemical control, Biological control, Pheromonal control, Autocidal control and Concept of IPM in brief.	04
2.5 Plant protection appliances: Shoulder type Rotary duster, Knapsack sprayer, Cynogas Pump.	02

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## Course Title: Zoology Practical Paper

Course Code: ZO – 233

Semester - III

(2 credits – 60 Hours)

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### Animal Diversity - III

1. Museum study of Group Protochordata : *Balanoglossus*, *Herdmania*, *Petromyzon*. (D)
2. Museum study of Class Pisces: *Labeo*, *Scoliodon*, *Hippocampus*. (D)
3. Museum study of Class Amphibia : *Salamandra*, *Rana*, *Ichthyophis*. (D)
4. Study of types of scales in fishes: Placoid scale, Cycloid scale, Ctenoid scale & Ganoid scale. (D)
5. Study of types of tail fins in fishes: Homocercal, Heterocercal & Diphycercal. (D)
6. Study of external characters & digestive system of locally available fish. (E) - Compulsory
7. Study of brain of locally available fish. (D)
8. Temporary preparation of scales & its identification from locally available fish. - (E) Compulsory
9. Compulsory field visit to study pond ecosystem with reference to Pisces and amphibians, report writing and submission. (2 P)

### Sericulture –

1. Study of external morphology and life-cycle of *Bombyx mori*. (D)
2. Study of five equipments in Sericulture. (E) - Compulsory
3. Preparation of a map showing distribution of silk moth and rearing/ sericulture practices in India. (E)
4. Compulsory submission of Photographs/ sketches of Mulberry, Tassar, Eri and Muga silkmoths. (E)

### Agricultural Pests and their control -

1. Study of following insect pests with respect to marks of identification, nature of damage, economic importance and control measures. (D)
  - a) Jowar stem borer,
  - b) Red cotton bug,
  - c) Brinjal fruit borer,
  - d) Mango stem borer.
2. Study of following pests with respect to marks of identification, nature of damage, economic importance and control measures. (D)
  - a) Blister beetle,

- b) Rice weevil,
  - c) Pulse beetle,
  - d) Tick.
3. Study of any two non insect pests corresponding to theory course. (D)
  4. Compulsory submission of at least five Insect Pests/ Photographs/ Sketches. (E)
  5. Study of pest control appliances (as per theory course). (D)
  6. Compulsory field visit to Sericulture farm/ Agricultural farm, report writing and submission.  
(2 P).

**Minimum 14 practicals must be conducted with at least Seven practicals from each paper.**



## Course Title: Animal Diversity - IV

Course Code: ZO – 241

Semester - IV

(2 credits – 30 Hours)

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### 1. Introduction to class –Reptilia (04)

- 1.1 Salient features of class Reptilia with one example (name only) – *Chelone*, *Calotes*.
- 1.2 Venomous and Non-venomous snakes – Cobra, Russell’s viper, Rat snake, Grass snake.
- 1.3 Snake venom, symptoms, effect and cure of snake bite, first aid treatment of snakebite.
- 1.4 Desert adaptations in reptiles in brief.

### 2. Introduction to class –Aves (05)

- 2.1 Salient features of class Aves with two examples (names only) – Sparrow, Parrot.
- 2.2 Flight adaptations in birds.
- 2.3 Types of Beaks and feet in birds.
- 2.4 Migration in birds – Altitudinal, Latitudinal.

### 3. Introduction to class - Mammalia. (04)

- 3.1 Salient features of class Mammalia with two examples (names only) – Rat, Rabbit.
- 3.2 Egg laying mammals.
- 3.3 Aquatic adaptations in mammals.
- 3.4 Flying adaptations in mammals.
- 3.5 Cursorial and fossorial adaptation in mammals

### 4. Study of Rat (17)

- 4.1 Systematic position, habit and habitat. 01
- 4.2 External characters. 01
- 4.3 Digestive system, food and feeding. 02
- 4.4 Respiratory system. 02
- 4.5 Blood vascular system – Structure of Heart. 02
- 4.6 Nervous system – Central Nervous system only. 03
- 4.7 Sense organs – Structure and functions of Eye & Ear. 03
- 4.8 Reproductive system. 03

## Course Title - Applied Zoology II

Course Code - ZO-242

Semester IV

2 Credits- 30 lectures

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### 1. Apiculture: 16

- 1.1 An introduction to Apiculture, Systematic position, Study of habit, habitat and nesting behaviour of *Apis dorsata*, *Apis indica*, *Apis florea* and *Apis mellifera*. 02
- 1.2 Life cycle, Colony organization and Division of labour. 02
- 1.3 Bee behaviour and communication (Round Dance and Wag-Tail Dance) . 02
- 1.4 Bee keeping equipments :
- a) Bee box (Langstroth type),
  - b) Honey extractor,
  - c) Smoker,
  - d) Bee-veil,
  - e) Gloves,
  - f) Hive tool,
  - g) Bee Brush,
  - h) Queen excluder. 02
- 1.5 Bee keeping and seasonal management. 02
- 1.6 Bee products (composition and uses) :
- a) Honey,
  - b) Wax,
  - c) Bee Venom,
  - d) Propolis,
  - e) Royal jelly,
  - f) Pollen. 02
- 1.7 Diseases and enemies of Bees :
- a) Bee diseases - Protozoan (Nosema), Bacterial (American foul brood), Viral (Sac brood), Fungal (Chalk brood).
  - b) Bee pests - Wax moth (Greater and Lesser), Wax beetle.
  - c) Bee predators - GreenBee eater, King crow, Wasp, Lizard. 02
- 1.8 Bee pollination and management of bee colonies for pollination. 02

### 2. Fisheries : 14

- 2.2 An introduction to fisheries and its types (in brief) : Freshwater fisheries, Marine fisheries, Brackish water fisheries. 02

2.3 Habit, habitat and culture methods of following freshwater forms :	03
<b>a)</b> Rohu ( <i>Labeo rohita</i> ),	
<b>b)</b> Catla ( <i>Catla catla</i> ),	
<b>c)</b> Mrigal ( <i>Cirrhinus mrigala</i> ).	
2.3 Harvesting methods of following marine forms:	03
<b>a)</b> <i>Harpodon</i> ,	
<b>b)</b> Mackerel,	
<b>c)</b> Pearl oyster.	
2.4 Crafts and Gears in Indian Fishery:	02
<b>a)</b> Crafts – Catamaran, Machwa, Dinghi.	
<b>b)</b> Gears – Gill net, Dol net, Rampani net, Cast net.	
2.5 Fishery byproducts:	02
<b>a)</b> Fish meal,	
<b>b)</b> Fish flour,	
<b>c)</b> Fish Liver oil,	
<b>d)</b> Fish manure,	
<b>e)</b> Fish fin soup.	
2.6 Fish preservation technique:	02
<b>a)</b> Chilling,	
<b>b)</b> Freezing,	
<b>c)</b> Salting,	
<b>d)</b> Drying,	
<b>e)</b> Canning.	

## Course Title: Zoology Practical Paper

Course Code: ZO – 243

Semester - IV

(2 credits – 60 Hours)

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### Animal Diversity - IV

1. Museum study of Class Reptilia: Venomous & Non-venomous snake – Two each. (D)
2. Identification of Venomous & Non-venomous snakes with the help of pictorial taxonomic keys. – (D) -Compulsory
3. Museum study of Class Aves: Crow, *Kingfisher* & Duck. (D)
4. Study of types of beaks & feet in birds – Any two each. (D)
5. Museum study of Class Mammalia: Rat, Shrew & Bat. (D)
6. Study of external characters & digestive system of Rat. (D)
7. Study of Heart of Rat. - (D) -Compulsory
8. Study of brain of Rat. (D)
9. Study of reptilian / avian diversity in and around the campus (2 P) - (E) -Compulsory
10. Compulsory visit to Zoo / Wildlife sanctuary / Bird sanctuary, report writing and submission. (2 P)

### Apiculture –

1. Study of external morphology, life cycle and polymorphism in Honey Bee. (D)
2. Temporary mounting of mouth parts, legs, wings and sting apparatus of worker bee. (E)
3. Study of Bee keeping Equipment: Bee box, Honey extractor, Smoker, Bee-veil, queen excluder. (D)- Compulsory
4. Study of Bee products: Honey, Wax, Venom, Royal jelly, Pollen. (D)
5. Estimation of carbohydrates from Honey in different samples. (D)- Compulsory
6. Study of Bee enemies: Wax moth, Bee eater, ant. (D)

### Fisheries –

1. Identification, Classification and study of habit, habitat and economic importance of  
a) Rohu (*Labeo rohita*), b) Catla (*Catla catla*), c) Mrigal (*Cirrhinus mrigala*). (D)
2. Identification, Classification and study of habit, habitat and economic importance of  
a) Prawn, b) Crab, c) Lobster, d) Pearl Oyster. (D)
3. Study and maintenance of Aquarium. (D) - Compulsory

4. Study of crafts: **a)** Catamaran, **b)** Machwa, **c)** Dinghi (Photographs/models/line drawings). (D)
5. Study of gears in fishing: **a)** Gill net, **b)** Dol net, **c)** Rampani net, **d)** Cast net.  
(Photographs/models/line drawings). (D)
7. Study of nutritional value of fish: Biochemical estimation of fish muscle proteins by using Biuret method. (E) - Compulsory
7. Compulsory study tour/field visit to Apiculture institute / Fish farm/ Aquarium. (E) (**2 P**).

**Minimum 14 practicals must be conducted with at least Seven practicals from each paper.**

## Recommended Reference Books

### Animal Diversity – III & IV

1. Text Books of Zoology, Invertebrates Vol- II, 1992, T.J.Parker and W.A. Haswel, Edited by Marshall and Williams, CBS publications and distribution, New Delhi.
2. Integrated Principles of Zoology, Eleventh Edition, Hickman CP, Roberts LS & Larson A. International Edition ISBN 0–07–118077–X, The McGraw-Hill Companies, Inc.,
3. Modern Text Book of Zoology, Vertebrates. R. L. Kotpal, 3rd edn. Rastogi Publications, Meerut.
4. Chordate Zoology, 1982, P.S.Dhami and J.K.Dhami, R. Chand and Co., New Delhi.
5. Biology, Campbell and Reece. 7th Edn. Pearson Education in South Asia, Delhi.
6. Young, J. Z. (2004). The Life of Vertebrates. III Edition. Oxford university press.
7. Pough H. Vertebrate life, VIII Edition, Pearson International.
8. Integrated Principles of Zoology, Eleventh Edition, Hickman C. P., Roberts L. S. & Larson A. International Edition ISBN 0–07–118077–X, The McGraw-Hill Companies, Inc.,
9. Arora M.P. Chordates I. Himalya Publications.
10. Organic Evolution. R.S. Lull. Light & Life Publishers.
11. Jordan E. L. & Verma P. S. 2003. Chordates Zoology. S. Chand & Company Ltd. New Delhi.
12. Biology, Campbell and Reece. 7th Edn. Pearson Education in South Asia, Delhi.

### Applied Zoology I & II

1. Principles of Sericulture, 1994. Hisao Arguo, Oxford & Co.
2. An Introduction of Sericulture, 1995. G. Ganga, J. Sulochana, Oxford & IBH Publication Co. Bombay.
3. FAQ Manual of Sericulture. Vol I - Mulberry Cultivation, Vol II - Silkworm Rearing. Central Silk Board, Bangalore.
4. Mane, P.C., Chaudhari R. D. et al. Highly sensitive label-free bio-interfacial colorimetric sensor based on silk fibroin-gold nanocomposite for facile detection of chlorpyrifos pesticide. Scientific Reports 2020, 10, 4198. <https://doi.org/10.1038/s41598-020-61130-y>
5. Entomology & Pest Management. Pedigo L. P. Prentice Hall, India 1996.
6. General & Applied Entomology, Nayar K. K. & T. N. Ananthkrishnan & B. V. Davis, Tata McGraw Hill Publication, New Delhi.
7. Insects. M. S. Mani, National Book Trust, India, 2006.
8. Insects & Mites of Crops in India. M. R. G. K. Nair – by ICAR, New Delhi.
9. The Science of Entomology. W. S. Romoser and J. G. Stoffolano, McGraw Hill Publication, 1988.

10. Agricultural Insect Pests of India and their Control, Dennis S. Hill, Cambridge University Press.
11. Applied Entomology. Vol. I & II. K. P. Srivastava. Kalyani Publication, Ludhiana, New Delhi.
12. Principles of Insect Pest Management. G. S. Dhaliwal and Ramesh Arora, Kalyani Publications, Ludhiana.
13. Pest Management and Pesticides: Indian Scenario. Editor- B. Vasantaraj David, Namrutha Publications, Madras (Chennai).
14. Concepts of Insect Control. Ghosh M. R. Wiley Eastern Ltd. New Delhi.
15. Destructive and useful Insects, their habit and Control, 1973. C.L. Metcalf and W. P. Flint, Tata McGraw Hill Publications, New Delhi.
16. A Text Book of Entomology, 1974. V. K. Mathur and K. D. Upadhyay, Goel Printing Press, Barani.
17. Imm's general Text Book of Entomology, Vol I & II, Richard and Davis Owen.
18. Biology of Insects, 1992. S. C. Saxena. Oxford and IBH Publishing Co., New Delhi, Bombay, Calcutta.
19. Bee and Bee Keeping, 1978, Roger A. Morse, Conell University Press, London.
20. The Behaviour & Social Life of Honey Bees, C. R. Ribbandas, Dover Publication inc. New York.
21. Fishes. Mary Chandy. National Book Trust India, 2005.
22. Economic Zoology, Shukla Upadhyay, Rastogi Publication, Meerut, India, 1998.
23. Fisheries Developments, K. K. Trivedi, Oxford and IBH Pub. Co.
24. Marine Fishes in India, 1990, D.V. Bal & K. Virabhdra, Tata McGraw Hill Publication.
25. Fishery Management, 1990, S. C. Agarwal, Avinash Publication House, New Delhi.

**Note – Use latest editions of the books.**



## सावित्रीबाई फुले पुणे विद्यापीठ, पुणे

मराठी विषयाचा पुनर्रचित अभ्यासक्रम- जून २०२० पासून

### S. Y. B. Sc. मराठी

निवड आधारित श्रेयांक पद्धत

Choice Based Credit System [CBCS]

सत्र	विषयाचे नाव
पहिले	उपयोजित मराठी (AECC - 2 A)
दुसरे	मराठी साहित्य (AECC – 2 B)



S. Y. B. Sc. (द्वितीय वर्ष विज्ञान)

विषयाचे नाव

उपयोजित मराठी (AECC – 2 A)

पहिले सत्र

अभ्यासक्रमाची उद्दिष्टे :

- १ मराठी भाषा आणि साहित्य यांच्या परस्परसंबंधाची जाणीव करून देणे.
- २ मराठी भाषेचा परिभाषासापेक्ष आणि शैलीसापेक्ष विकास विद्यार्थ्यांच्या लक्षात आणून देणे.
- ३ मराठी भाषेची उपयोजनात्मक कौशल्ये विकसित करणे.

घटक	तपशील	श्रेयांक	तासिका
१	१ भाषा आणि जीवनव्यवहार : भाषा म्हणजे काय? शास्त्रीय – व्यवहार – साहित्य - कार्यालयीन भाषा, प्रसारमाध्यमे आणि समाजमाध्यमे भाषा. २ अर्जलेखन : विनंती अर्ज, नोकरीसाठी अर्ज ३ संगणकीय अर्जलेखन : युनिकोडमधून मायक्रोसॉफ्ट वर्डमध्ये अर्ज. ४ स्व- परिचय	१	१५
२	१ प्रसारमाध्यमांसाठी लेखन : (कृषि, विज्ञान, तंत्रज्ञान, क्रीडाविषयक) १.१ वृत्तपत्रे : लेख लेखन १.२ नभोवाणी : भाषण लेखन १.३ चित्रवाणी : माहितीपटासाठी संहिता लेखन १.४ महाजाल : ब्लॉग लेखन १.५ नवसमाजमाध्यमांसाठी लेखन : फेसबुक, ट्विटर.	१	१५

संदर्भ ग्रंथ :

- १ व्यावहारिक मराठी पाठ्यपुस्तक, पुणे विद्यापीठ प्रकाशन, पुणे.
- २ व्यावहारिक मराठी- डॉ. कल्याण काळे व डॉ. द.दि.पुंडे.
- ३ व्यावहारिक मराठी- ल.रा.नसिराबादकर, फडके प्रकाशन, कोल्हापूर.

- ४ नवभारत, व्यावहारिक मराठी विशेषांक, ऑगस्ट-सप्टें, १९८२, प्राज्ञ पाठशाला, वाई.
- ५ उपयोजित अभ्यासक्रम, मराठी भाषेची संवादकौशल्ये, यशवंतराव महाराष्ट्र मुक्त विद्यापीठ, नाशिक.
- ६ शासनाव्यवहारात मराठी (समस्या : स्वरूप: प्रक्रिया ), भाषा संचालनालय, शासकीय फोटो झिंको मुद्रणालय, पुणे १९९७.
- ७ व्यावहारिक मराठी- प्रकाश परब
- ८ व्यावहारिक मराठी, डॉ.स्नेहल तावरे
- ९ व्यावहारिक मराठी, डॉ. गोविलकर , डॉ. पाटणकर
- १० व्यावहारिक आणि उपयोजित मराठी, डॉ. मनोहर रोकडे
- ११ बातमीची कार्यक्षेत्रे, यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक.
- १२ दूरदर्शनसाठी लेखन, केशव केळकर
- १३ जाहिरातीचे युग, केशव केळकर
- १४ सृजनात्मक लेखन, आनंद पाटील
- १५ मराठी लेखन मार्गदर्शिका, यास्मिन शेख
- १६ भयंकर सुंदर मराठी भाषा, डॉ. द. दि. पुंडे
- १७ पत्रकारितेचा स्वभाव, ल. न. गोखले
- १८ फीचर रायटिंग, प्रसन्नकुमार अकलूजकर
- १९ भाषांतर मीमांसा, कल्याण काळे, अंजली सोमण
- २० पत्रकारिता : स्वरूप आणि चिकित्सा, महावीर जोंधळे
- २१ व्यावहारिक मराठी भाषा, शरदिनी मोहिते
- २२ जाहिरात शास्त्र, डॉ. वंदना खेडीकर

प्रश्नपत्रिकेचे स्वरूप

उपयोजित मराठी (AECC – 2 A) (सत्र १)

विद्यापीठ सत्र परीक्षा		
वेळ : २ तास	प्रश्नांचा तपशील	गुण : ५०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	अ) ७ पैकी ५ प्रश्नांची उत्तरे प्रत्येकी २० शब्दांपर्यंत लिहा. (घटक १.१)	०५
	ब) ३ पैकी २ प्रश्नांचे उत्तर (घटक १.२, १.३, १.४)	१०
प्रश्न २ रा	३ पैकी २ प्रश्नांचे उत्तर (घटक २.१, २.२, २.३)	१५
प्रश्न ३ रा	२ पैकी १ प्रश्नाचे उत्तर (घटक २.४, २.५)	०५
सत्र परीक्षा एकूण गुण		३५
अंतर्गत मूल्यमापन		
चाचणी		१०
चर्चासत्र / सादरीकरण / गृहपाठ / गटचर्चा / तोंडी परीक्षा / प्रकल्प लेखन		५
अंतर्गत मूल्यमापन एकूण गुण		१५
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		५०
अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे. विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.		
विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.		

S. Y. B. Sc. (द्वितीय वर्ष विज्ञान)

विषयाचे नाव

मराठी साहित्य (AECC – 2 B)

दुसरे सत्र

अभ्यासक्रमाची उद्दिष्टे :

१. साहित्यविषयक अभिरूची विकसित करणे.
२. मराठी भाषा, साहित्य आणि यांच्या परस्परसंबंधाची जाणीव करून देणे.
३. साहित्यविषयक अभ्यासातून जीवनविषयक समज विकसित करणे.
४. विज्ञानसाहित्यविषयक आकलनक्षमता वाढविणे.

घटक	तपशील	श्रेयांक	तासिका
१	१ निबंध लेखन (वैचारिक, सामाजिक, विज्ञानविषयक) २ अभ्यासपुस्तक : <b>मराठी कथा दर्शन</b> संपादक प्रा. डॉ. शिरीष लांडगे, सुनिताराजे पवार, प्रा. डॉ. शांताराम चौधरी रुद्र प्रकाशन, पुणे	२	३०

संदर्भ ग्रंथ :

- १ साहित्य अध्यापन आणि प्रकार, वा. ल. कुलकर्णी गौरव ग्रंथ, संपादक श्री. पु. भागवत, डॉ. सुधीर रसाळ.
- २ कथा : संकल्पना आणि समीक्षा, सुधा जोशी, मौज प्रकाशन.
- ३ मराठी कथा : विसावे शतक, संपादक के. ज. पुरोहित, सुधा जोशी.
- ४ निबंध : शास्त्र व कला - डॉ. प्र. न. जोशी
- ५ निबंधलेखन - निर्मला किराणे.

प्रश्नपत्रिकेचे स्वरूप

मराठी साहित्य (AECC - 2 B) (सत्र २)

विद्यापीठ सत्र परीक्षा		
वेळ : २ तास	प्रश्नांचा तपशील	गुण : ५०
प्रश्न क्रमांक		गुण
प्रश्न १ ला	निबंध लेखन ( वैचारिक, सामाजिक आणि विज्ञानविषयक) ३ पैकी १ विषयावर ३०० शब्दांपर्यंत	१०
प्रश्न २ रा	५ पैकी ३ प्रश्नांची उत्तरे प्रत्येकी १०० शब्दांपर्यंत ( अभ्यासपुस्तक )	१५
प्रश्न ३ रा	२ पैकी १ प्रश्नाचे उत्तर प्रत्येकी ३०० शब्दांपर्यंत ( अभ्यासपुस्तक )	१०
सत्र परीक्षा एकूण गुण		३५
अंतर्गत मूल्यमापन		
चाचणी		१०
चर्चासत्र / सादरीकरण / गृहपाठ / गटचर्चा / तोंडी परीक्षा / प्रकल्प लेखन		५
अंतर्गत मूल्यमापन एकूण गुण		१५
सत्र परीक्षा आणि अंतर्गत मूल्यमापन एकूण गुण		५०
अंतर्गत मूल्यमापनाचे नियोजन महाविद्यालयाने करावे. विद्यापीठाच्या निर्देशानुसार विहित मुदतीत गुण विद्यापीठाकडे पाठवावे.		
विद्यार्थ्यांचे अंतर्गत मूल्यमापनविषयक लेखन / तपशील विद्यापीठाच्या निर्देशानुसार, विहित कालावधीपर्यंत महाविद्यालयाकडे जमा असणे आवश्यक आहे.		



## **Savitribai Phule Pune University**

*(Formerly University of Pune)*

### **Three Year B.Sc. Degree Program in Botany**

**(Faculty of Science & Technology)**

### **T.Y.B. Sc Botany**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2021- 2022**

## Title of the Course: B. Sc Botany

### 1. Structure of Course:

Structure B.Sc. Botany syllabus					
Year	Semester	Course Type	Course code	Course Name	Credits
1	1	Compulsory Course	BO 111	Plant life and utilization I	2
			BO 112	Plant morphology and Anatomy	2
			BO 113	Practical based on BO 111 & BO 112	1.5
	2	Compulsory Course	BO 121	Plant life and utilization II	2
			BO 122	Principles of plant science	2
			BO 123	Practical based on BO 121 & BO 122	1.5
2	3	Compulsory Course	BO 231	Taxonomy of Angiosperms and Plant Ecology	2
			BO 232	Plant Physiology	2
			BO 233	Practical based on BO 231 & BO 232	2
	4	Compulsory Course	BO 241	Plant Anatomy and Embryology	2
			BO 242	Plant Biotechnology	2
			BO 243	Practical based on BO 241 & BO 242	2
3	5	Discipline Specific Elective Course	BO 351	<b>Algae and Fungi</b>	2
			BO 352	<b>Archegoniate</b>	2
			BO 353	<b>Spermatophyta and Paleobotany</b>	2
			BO 354	<b>Plant Ecology</b>	2
			BO 355	<b>Cell and Molecular Biology</b>	2
			BO 356	<b>Genetics</b>	2
			BO 357	<b>Practical based on BO 351 &amp; BO 352</b>	2
			BO 358	<b>Practical based on BO 353 &amp; BO 354</b>	2
	Skill Enhancement course	BO 3510	<b>Medicinal Botany</b>	2	
		BO 3511	<b>Plant Diversity and Human Health</b>	2	
		6	Discipline Specific Elective Course	BO 361	<b>Plant Physiology</b>
BO 362	<b>Biochemistry</b>			2	
BO 363	<b>Plant Pathology</b>			2	
BO 364	<b>Evolution and Population genetics</b>			2	
BO 365	<b>Advanced Plant Biotechnology</b>			2	
BO 366	<b>Plant Breeding and Seed Technology</b>			2	
BO 367	<b>Practical based on BO 361 &amp; BO 362</b>			2	

		BO 368	<b>Practical based on BO 363 &amp; BO 364</b>	2
		BO 369	<b>Practical based on BO 365 &amp; BO 366</b>	2
	Skill Enhancement course	BO 3610	<b>Nursery and Gardening Management</b>	2
		BO 3611	<b>Biofertilizers</b>	2

## 2. Equivalence of Previous Syllabus:

Old Course (2015 Pattern)	New Course (2020 CBCS Pattern)
<b>Semester V</b>	<b>Semester V</b>
BO. 331 Cryptogamic Botany	BO 351 Algae and Fungi
BO. 332 Cell and Molecular Biology	BO 352 Archegoniate
BO. 333 Genetics and Evolution	BO 353 Spermatophyta and Paleobotany
BO. 334 Spermatophyta and Palaeobotany	BO 354 Plant Ecology
BO. 335 Horticulture and Floriculture	BO 355 Cell and Molecular Biology
BO. 336 Computational Botany	BO 356 Genetics
--	BO 3510 Medicinal Botany
--	BO 3511 Plant Diversity and Human Health
<b>Semester VI</b>	<b>Semester VI</b>
BO.341 Plant Physiology and Biochemistry	BO 361 Plant Physiology and Metabolism
BO.342 Plant Ecology and Biodiversity	BO 362 Biochemistry
BO.34 Plant Pathology	BO 363 Plant Pathology
BO.344 Medicinal and Economic Botany	BO 364 Evolution and population genetics
BO.345 Plant Biotechnology	BO 365 Advanced Plant Biotechnology
BO.346 Plant Breeding and Seed Technology	BO 366 Plant Breeding and Seed Technology
--	BO 3610 Nursery and Gardening Management
--	BO 3611 Biofertilizers



**T.Y.B.Sc. Botany CBCS Pattern**  
**(Semester V, Paper I) 2020-2021**  
**BO 351: Cryptogamic Botany ( Algae and Fungi)- 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
<b>Credit-I Algae</b>		<b>15</b>
<b>1.</b>	Introduction: Cryptogams- meaning. Types- Lower Cryptogams, brief Review with examples	<b>01</b>
<b>2.</b>	Algae: General characters, distribution, Thallus organization, habit and Habitat reproduction and Classification (G.M.Smith 1955) up to classes.	<b>04</b>
<b>3.</b>	Study of life cycle of algae with reference to taxonomic position, Occurrence, Thallus structure, and reproduction of <i>Nostoc</i> , <i>Oedogonium</i> <i>Chara</i> , <i>Sargassum</i> and <i>Batrachospermum</i> .	<b>08</b>
<b>4</b>	Economic importance of algae- Role in industry, agriculture, fodder and medicine.	<b>02</b>
<b>Credit-II Fungi</b>		<b>15</b>
<b>5</b>	Fungi: General characters, Habit and habitats, thallus organization, cell wall composition, nutrition and Classification. (Alexopoulos and Mims 1979) up to classes.	<b>03</b>
<b>6.</b>	Study of life cycle of fungi with reference to taxonomic position, thallus structure, and reproduction of <i>Mucor</i> ( <i>Zygomycotina</i> ), <i>Saccharomyces</i> ( <i>Ascomycotina</i> ), <i>Puccinia</i> ( <i>Basidiomycotina</i> ), <i>Penicillium</i> and <i>Cercospora</i> ( <i>Deuteromycotina</i> ) [Two members of Deutero.]	<b>08</b>
<b>7.</b>	Symbiotic Associations - Lichens, Mycorrhiza and their significance	<b>04</b>

**Suggested readings:**

1. Vashistha B. R. et al., Botany for degree students-Algae
2. Das, Datta and Gangulee-College Botany Vol. I
3. Sharma, O.P. –Algae
4. Kumar H.D. 1988. Introductory Phycology. Affiliated East-West Press Ltd New Delhi.
5. Vashishta B.R. et al., Botany for degree students- Fungi
6. Sharma, P.D.-The Fungi

7. Sharma, O.P.-Fungi Economic importance of fungi

8. Alexopoulos C. J , Mims C.W. and Blacwel M.I 1996. Introductory Mycology. John Wiley and Sons Inc.

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester V, Paper II) 2020-2021  
BO 352: Archegoniate- 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
<b>Credit-I Bryophytes</b>		<b>15</b>
<b>1.</b>	Introduction to Archegoniate	<b>01</b>
<b>2.</b>	Introduction, general characters, distribution of Bryophytes to land habit, classification of Bryophytes according to G.M. Smith (1955) up to classes with reasons	<b>02</b>
<b>3.</b>	Range of thallus organisation, origin of Bryophytes - Pteridophytes and Algal hypothesis, evolution of sporophyte	<b>02</b>
<b>4</b>	Study of Life Cycle of Bryophytes with respect to Taxonomic position, Morphology, Anatomy, Reproduction, Gametophytes and sporophytes of <i>Marchantia, Anthoceros and Funaria</i>	<b>09</b>
<b>5</b>	Ecological and economic importance of Bryophyte	<b>01</b>
<b>Credit-II Pteridophytes</b>		<b>15</b>
<b>6</b>	Introduction, Vascular Cryptogams, General characteristics, Classification according to K.R. Sporne (1975) up to classes with reasons, Diversity and Distribution of Pteridophytes.	<b>02</b>
<b>7.</b>	Resemblances of Pteridophytes with Bryophytes, Differences between Pteridophytes and Bryophytes, Origin of Pteridophytes -Algal and Bryophytes, Evolution of Pteridophytes- Telome Theory and Enation Theory.	<b>03</b>
<b>8.</b>	Study of Life Cycle of Pteridophytes with respect to Taxonomic position, Morphology, Anatomy, Reproduction, Sporophytes and Gametophytes of <i>Psilotum, Selaginella and Equisetum</i>	<b>09</b>
<b>09</b>	Ecological and Economical Importance of Pteridophytes	<b>01</b>

**Note:**development of sex organs and Sporophytes is not expected.)

**Suggested readings:**

1. Chopra G.L. and Yadav D.L. A Text book of Bryophytes.
2. Das, Datta and Gangulee-College Botany Vol I
3. Parihar, N.S. An introduction to Embryophyta: Bryophyte-I
4. Puri Prem. Brayophytes, Atmaram and Sons. Delhi.
5. Parihar N.S. 1991. Bryophyta. Central Book Depot, Allahabad.
6. Sporne K.R. 1991. The Morphology of Pteridophytes. B.I Publishing Pvt. LtdBombay.
7. Vashishta B.R. Botany for degree students Bryophytes- Vol-III
8. Vashishta B.R. Botany for degree students Pteridophytes.

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester V, Paper III) 2020-2021  
BO 353: Spermatophyta and Paleobotany - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
	<b>Credit-I ANGIOSPERMS</b>	<b>15</b>
<b>1.</b>	<b>Origin of angiosperms:</b> with reference to time, place and ancestry- 1) Pseudanthial theory 2) Transitional-Combinational Theory	<b>02</b>
<b>2.</b>	<b>Speciation &amp; Endemism</b> Species concept (Biological, Taxonomic & Phylogenetic Species Concept), Speciation (Allopatric, Sympatric & Parapatric), Endemism and its types (Palaeoendemism, Holoendemism and Neoendemism)	<b>04</b>
<b>3.</b>	<b>Classification:</b> Outline, Merit and Demerits of Cronquist's System and APG IV system of classification. Study of following families with reference to systematic position (As per Bentham & Hooker), Diagnostic characters, floral formula, floral diagram and any five examples with their economic importance – Nymphaeaceae, Oleaceae, Amaranthaceae, Cannaceae	<b>06</b>
<b>4</b>	<b>Herbaria and Botanical Gardens</b> Functions of Herbarium, Important herbaria (World: Kew herbarium; India: Central National Herbarium, Kolkata). Botanic gardens of the world (Royal Botanic Garden, Kew) and India	<b>03</b>
	<b>Credit-II GYMNOSPERMS and PALEOBOTANY</b>	<b>15</b>

6	Introduction, general characters, economic importance and classification according to Chamberlain (1934).	02
7.	Study of life cycle of Pinus and Gnetum with reference to distribution, morphology, anatomy, reproduction, gametophyte, sporophyte, seed structure and alternation of generations.	10
8.	Fossil- Definition, process of fossil formation, types of fossils.-Impression, Compression, Petrification, Pith cast and Coal ball.	03

**Suggested readings:**

1. Cronquist, A. 1968. The Evolution and Classification of Flowering Plants. Thomas Nel and Sons, Ltd. London.
2. Lawrence, G.H.M 1951. Taxonomy of Vascular Plants.
3. Singh V. and D.K Jain, 1981 Taxonomy of Angiosperms. Rastogi Publication, Meerut.
4. Swingle D.B. 1946. A Text book of Systematic Botany. Mc Graw Hill Book Co. New York.
5. Takhtajan A. 1969. Flowering Plants; Origin and Disposal.
6. Pande B.P 1997. Taxonomy of Angiosperms. S.Chand.
7. Gurucharan Singh 2005- Plant systematics
8. Naik V.N. - Taxonomy of Angiosperms.
9. Shivrajan V.V. -Introduction to Principles plant taxonomy
10. V. V. Sivarajan, N. K. P. Robson 1991. Introduction to the Principles of Plant Taxonomy IIInd Edi.
11. Sharma O.P. Plant Taxonomy Tata McGraw-Hill
12. Botanical Journal of the Linnean Society, 2009, 161, 105–121.
13. <http://www.mobot.org/MOBOT/research/APweb/>

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester V, Paper IV) 2020-2021  
BO 354: Plant Ecology - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
	<b>Credit-I</b>	<b>15</b>
1.	Introduction, interrelationship between the living world and the environment, levels of organization, components and dynamism of ecosystem, homeostasis, niche concept, concept of limiting factors	03
2.	<b>Biogeography:</b> Floristic realms, speciation and its types, biogeographic regions of India, Plant indicators	03

3.	<b>Population ecology:</b> Definition, characteristics, population growth form, r and k selection	03
4.	<b>Community ecology:</b> Introduction and Definition, community structure, physiognomy, Raunkiaer's life form classification, keystone species, edge and ecotone	04
5.	<b>Biogeochemical cycles:</b> The carbon cycle, Nitrogen cycle, Phosphorus cycle, and Hydrologic cycle	02
<b>Credit-II</b>		<b>15</b>
6.	<b>Ecological Impact Assessment (EIA)</b> Introduction, Historical Review of EIA, Objectives of EIA, Stages of EIA process: Screening; Scoping; Baseline study; Impact prediction and assessment; Mitigation; Producing Environmental Impact Statement (EIS); EIS review; Decision making; Monitoring, Compliance and Enforcement; Benefits of EIA.	05
7.	<b>Environmental Audit</b> Meaning and concept, need, objectives, benefits, types, audit protocol, process, certification, personnel environmental audit	04
8.	<b>Remote Sensing</b> Definition, basic principles, process of ecological data acquisition and interpretation, global positioning system, application of remote sensing in ecology.	04
9.	<b>Ecological management:</b> Concepts, sustainable development, sustainability indicators	2

## References:

1. Current sciences special issue remote sensing for national development Volume 61 numbers 3 and 4 August 1991
2. Daubenmire R.F. 1974. Plants and Environment- A Text Book of Plant Ecology (3rd edition). John Wiley & Sons. New York.
3. E.P. Odum. 1996. Fundamentals of Ecology. Natraj Publishing, Dehradun.
4. G.J. Rau and C.D. Weeten, "Environmental Impact Analysis Hand book, McGraw Hill, 1980.
5. George Joseph Fundamentals of remote sensing (Second edition, 2005) by Universities press (India) Private Ltd., Hyderabad.
6. John R. Jensen (2000) Remote sensing of the environment, Dorling Kindersley India Pvt. Ltd,
7. Kendeigh S.C. 1980. Ecology with Special Reference to Animals and Man. Prentice Hall of India Pvt. Ltd., New Delhi.
8. Kermondy F.J. 1996. Concepts of Ecology. Prentice Hall of India Pvt. Ltd. New Delhi.
9. Kumar H.D. 1996. Modern Concepts of Ecology (3rd edition). Vikas Publishing House Pvt., Ltd. Delhi.

10. Kumar H.D. 1997. General Ecology. Vikas Publishing Pvt. Ltd., Delhi.
11. Larry W. Canter, " Environment Impact Assessment", McGraw-Hill Book Company, New York
12. M. Anji Reddy Textbook of Remote sensing and GIS (Third edition, 2006) by BS Publication, Hyderabad
13. Singh JS, Singh SP, & Gupta SR, (2006) Ecology, Environment and Resource Conservation. Anamayapubl, New Delhi
14. Smith L.R. 1996. Ecology and Field Biology (5th edition). Harper Collns College Publishers, USA.
15. Smith L.R. and Mith T.M. 1998. Elements of Ecology. (4th edition). An imprint of Addison Wesley, Longman ink., California
16. Weaver. J.E. and Clements. S.E. 1966. Plant Ecology. Tata McGraw Publishing Co. Ltd. Bombay.

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester V, Paper V) 2020-2021  
BO 355: Cell and Molecular Biology - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
<b>Credit-I Cell Biology</b>		<b>15</b>
<b>1.</b>	<b>Introduction to Cell Biology:</b> Definition, Brief history of Cell Biology, Units of measurement for cell, Interdisciplinary nature of Cell Biology	<b>01</b>
<b>2</b>	<b>Cell organelles:</b> Ultrastructure, components and functions of Cell wall and cell membranes, mitochondria and Chloroplast, endoplasmic Reticulum, Golgi apparatus, Lysosomes, Vacuoles, Peroxisomes & Glyoxysomes	<b>06</b>
<b>3.</b>	<b>Nucleus:</b> Morphology and ultrastructure of nucleus, nucleolus and nucleolar organizer Nuclear envelope – structure of nuclear pore complex, transport of molecules across nuclear envelope.	<b>03</b>
<b>4.</b>	<b>Chromosomes:</b> Euchromatin and heterochromatin Histones, Packing of DNA into chromosomes in eukaryotes, Karyotype and ideogram, Polytene chromosomes and lampbrush chromosomes.	<b>03</b>
<b>5</b>	<b>Cell signaling:</b> Introduction and definition, Signaling molecules and receptors, Calcium signaling pathway in plants	<b>02</b>
<b>Credit-II Molecular Biology</b>		<b>15</b>
<b>5</b>	<b>Genetic material DNA:</b> historical perspective from 1953 to 2020, Griffith's and Avery's transformation experiments, Hershey-Chase bacteriophage experiment.	<b>02</b>

6.	<b>DNA replication (Prokaryotes and Eukaryotes):</b> Molecular mechanism of DNA replication. Enzymes involved in both prokaryotic and eukaryotic DNA replication and their inhibitors (antibiotics).	03
7.	<b>Gene expression:Transcription (Prokaryotes in details and passing remarks on Eukaryotes)</b> Types of RNA: mRNA, tRNA, rRNA; types of promoters; types of RNA polymerase enzymes in eukaryotes; molecular mechanism of transcription.	04
8	<b>Translation (Prokaryotes and Eukaryotes):</b> Definition, concept and properties of genetic code; molecular mechanism of translation.	03
9	<b>Regulation of gene expression:</b> Concept of operon, <i>lac</i> operon and <i>trp</i> operon, positive and negative control, one gene one enzyme hypothesis.	03

### Suggested readings:

1. Cell and Molecular Biology , S. C. Rastogi
2. Cytology, T. S. Verma and V. K. Agarwal 3. Cell Biology, C. B. Pawar
4. Cell and Molecular Biology, P. K. Gupta
5. Fundamentals of Molecular Biology, Veer Bala Rastogi
6. Fundamentals of Molecular Biology, G. K. Pal and Ghaskadabi
7. Cell Biology, Molecular Biology, Genetic, Evolution and Ecology, Verma and Agarwal
8. Cell and Molecular Biology, Robertis and DeRobertis
9. Molecular Cell Biology, 4th Edition, Lodish S. Baltimore
10. Molecular Biology of Gene, Watson J. D.
11. Biochemistry and Molecular Biology of Plants, Buchanan B. B.
12. Molecular and Cell Biology, Wolfe S.L.

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester V, Paper VI) 2020-2021  
BO 356: Genetics - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
	<b>Credit-I</b>	<b>15</b>
1.	<b>Introduction to Genetics.</b> History, Definition, Concept, branches and applications of Genetics.	<b>01</b>
2	<b>Mendelism</b> Genetical terminology, Monohybrid cross, Law of dominance, Incomplete dominance, Law of segregation, Dihybrid cross, Dihybrid ratio, Law of	<b>04</b>

	independent assortment, Back cross and Test cross.	
<b>3.</b>	<b>Neo Mendelism (Gene Interaction)</b> Genetic interaction, Epistatic interactions –supplementary gene (recessive epistasis 9:3:4), Inhibitory genes (13:3), Masking genes (12:3:1), Non-Epistatic inter-allelic genetic interactions-Complementary genes (9:7), Duplicate genes (15:1)	<b>03</b>
<b>4.</b>	<b>Multiple alleles</b> Definition, Concept, Characters of multiple alleles, Examples of multiple alleles – Blood group in human and self-incompatibility in Nicotiana.	<b>02</b>
<b>5</b>	<b>Linkage, Recombination and Crossing Over</b> Linkage- Definition and Types, Crossing over: Definition and Types, Construction of a linkage map by two point test cross and three point test cross, Recombination: Concept, definition and types	<b>04</b>
<b>6</b>	<b>Mutation:</b> Concept, definition and types	<b>01</b>
<b>Credit-II</b>		<b>15</b>
<b>5</b>	<b>Numerical alterations of chromosomes.:</b> Euploidy, Aneuploidy-Concept and Types, Aneuploidy in Plants and Human, Polyploidy in Plants & Animals, Induced Polyploidy, applications of Polyploidy	<b>03</b>
<b>6.</b>	<b>Structural alterations of chromosomes.:</b> Types, cytology and genetic effects of Deletion, Duplication Inversion and Translocation with examples.	<b>04</b>
<b>7.</b>	<b>Cytoplasmic &amp; Quantitative Inheritance:</b> Concept of quantitative inheritance, Inheritance of quantitative trait in Maize (Cob length), Cytoplasmic inheritance Definition and concept, Chloroplast- Variegation in Four O'clock plants, Mitochondria- Petite mutants in yeast.	<b>04</b>
<b>8</b>	<b>Sex Linked Inheritance:</b> Concept of Sex chromosomes and autosomes, Inheritance of X- linked genes –Inheritance of colour blindness in humans, Inheritance of Y-linked (Holandric genes) in humans, Sex influenced genes, Sex-limited genes.	<b>04</b>

**Suggested readings:**



1. Atherly, A.G., Girton, J.R. and McDonald, J.F 1999. The Science of Genetics Saunders College Publishing, Frot Worth, USA.
2. Hartle D.L and Jones, E.W 1998 Genetics: Principles and Analysis (Fourth Edition). Jones and Bartlett Publishers, Massachusetts, USA.
3. Khush, G.S 1973. Cytogenetics of Aneuploids. Academic Press, New York, Lewis, R. 1997. Human Genetics: Concepts and Application (Second Edition). WCB McGraw Hill, USA.
4. Russel, P.J. 1998. Genetics (Fifth Edition). The Benjamin/Cummings Publishing Company IND., USA.
5. Snustad, D.P and Simmons, M.J 2000. Principles of Genetics (Second Edition). John Wiley and Sons Inc., USA.
6. Gardner and Simmons Snustad 2005 (Eighth Edition). Principles of Genetics, John Wiley and Sons, Singapore.
7. Sarin C 2004 (Sixth Edition) Genetics. TATA McGraw-Hill Publishing Company Ltd., New Delhi.
8. Ahluwalia K.B 2005 (First Edition). Genetics. New Age International Private Ltd. Publishers, New Delhi.
9. Burus and Bottino 1989. (Sixth Edition). The Science of Genetics. Macmillan Publishing Company, New York (USA).
10. Pawar C.B 2003 (First Edition). Genetics Vol. I and II. Himalaya Publishing House, Mumbai.
11. Strickberger 2005. (Third Edition). Genetics. Prentice Hall of India Pvt. Ltd., New Delhi.
12. Allard R.W 1995. Principles of Plant Breeding. John Wiley and Sons, Inc., Singapore.
13. Sharma J.R 1994 Principles and practices of Plant Breeding. Tata McGraw-Hill Publishers Company Ltd., New Delhi.
14. Verma and Agarwal, Genetics, S. Chand Co, New Delhi.
15. Singh B.D 2004. Genetics. Kalyani Publication, Ludhiana.
16. Gupta P.K Genetics and Cytogenetics, Rastogi Publications.
17. Gupta P. K. Genetics Rastogi Publications.
18. Phundan Singh Genetics, Kalyani Publications.
19. Verma P.S and Agarwal V.K. (2006) Cell Biology, Genetics, Molecular Biology, Evolution, Ecology. S.Chand and Company, New Delhi.
20. Shukla R.S. & Chandel P.S. Cytogenetics, Evolution & Biostatistics. S.Chand Publications.
21. Tomar & Singh Evolutionary Biology, Rastogi Publications.

22. Darbeshwar Roy Crop Evolution & Genetic Resources.

**T.Y.B.Sc. Botany CBCS Pattern  
Practical (Semester V Paper VII) 2020-2021  
BO 357: Practical based on BO351 and BO352 (2 Credits)**

Sr. No.	Title	No. of Practical
1.	Study of Algae with respect to systematic position, thallus structure and reproduction of <i>Nostoc</i> , <i>Oedogonium</i> , <i>Chara</i> , <i>Sargassum</i> , <i>Palmaria/Chondrus</i> .	04
2	Study of Fungi respect to systematic position, thallus structure and reproduction of <i>Mucor</i> , <i>Saccharomyces</i> , <i>Penicillium</i> , <i>Puccinia</i> and <i>Cercospora</i> .	04
3.	Study of <i>Marchantia</i> with respect to systematic position, morphology of thallus –rhizoids and scales, Gemma Cup, structure of sporophyte, reproduction.	01
4.	Study of <i>Anthoceros</i> with respect to systematic position, structure of gametophyte, anatomy of thallus, structure of Sporophytes, reproduction.	01
5	Study of <i>Funaria</i> with respect to systematic position, morphology of thallus- leaf, rhizoids, operculum, Anatomy of axis, leaf, reproduction	01
6	Study of Sporophyte evolution in Bryophytes with the help of permanent slides.	01
7	Study of <i>Psilotum</i> with respect to Taxonomic position, Morphology of sporophyte, anatomy and reproductive structure	01
8	Study of <i>Selaginella</i> with respect to Taxonomic position, Morphology of sporophyte, Anatomy and reproductive structures.	01
9	Study of <i>Equisetum</i> with respect to taxonomic position, Morphology of Sporophyte, anatomy and reproductive structure	01
10	Study of Stejar evolution in Pteridophytes with the help of permanent slides	01

**Note:** Botanical Excursion and submission of Tour Report with Photographs is compulsory.

**T.Y.B.Sc. Botany CBCS Pattern**  
**Practical (Semester V Paper VIII) 2020-2021**  
**BO 358: Practical based on BO353 and BO354 (2 Credits)**

Sr. No.	Title	No. of Practical
<b>1.</b>	Study of following families with reference to systematic position (following Bentham & Hooker), Diagnostic characters, floral formula, floral diagram of Nymphaeaceae, Oleaceae, Amaranthaceae, Cannaceae	<b>04</b>
<b>2</b>	Preparation of Botanical keys: Indented and bracketed keys by using vegetative and reproductive characters	<b>01</b>
<b>3</b>	Study of internal and external morphology of Gnetum	<b>01</b>
<b>4.</b>	Study of internal and external morphology of Pinus	<b>01</b>
<b>5.</b>	Study of the following with the help of slides and/ or specimens. i) Impression ii) Compression iii) Petrification	<b>01</b>
<b>6</b>	Study of polluted water body with ref. to BOD (D zero day and D fifth day).	<b>02</b>
<b>7</b>	Study of physicochemical properties of water body by using Sacchi disc, pH meter and electric conductivity meter	<b>02</b>
<b>8</b>	Acquisition of ecological data of particular locality by using GPS/ altimeter/geographic maps etc	<b>02</b>
<b>9</b>	Study of suitable ecosystem by line/belt transect method/ nested quadrat method	<b>02</b>

**Note:** Excursion tours of long and short duration are compulsory

**T.Y.B.Sc. Botany CBCS Pattern**  
**Practical (Semester V Paper IX) 2020-2021**  
**BO 359: Practical based on BO355 and BO356 (2 Credits)**

Sr. No.	Title	No. of Practical

1.	Cytological techniques-preparation of Fixatives, preparation of stains (Aceto carmine and Aceto-orcein).	01
2	Isolation of nuclei and characterization	01
3	Study of various stages of mitosis and meiosis	01
4	Induction of C metaphase in suitable plant material	01
4	Study of Chromosomes Morphology (from colchicines pretreated Onion root tip cells)	01
6	Isolation of plant genomic DNA by suitable method.	01
7	Estimation of Plant DNA by DPA method	01
8	Extraction and estimation of RNA by Orcinol Method	01
9	To study the monohybrid and dihybrid crosses with suitable data and its analysis by Chi-Square test.	01
10	Induction of tetraploidy in onion root cells and preparation of squash for observation of tetraploid cells.	01
11	Preparation of salivary gland chromosomes in <i>Chironomous</i> larvae.	01
12	Study of human genetic traits viz. PTC taste sensitivity, earlobe and rolling tongue, height, Skin colour, Hair colour, Eye colour in known population.	01
13	Genetic problems on gene mapping using three point test cross data.	01
14	Study of structural heterozygotes (multiple translocations) in <i>Rhoeo</i> .	01
15	Problems on quantitative inheritance. (Cob length in Maize)	01
16	Problems on Multiple Alleles. (Blood group in Human)	01

### Skill Enhancement course

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester V, Paper X) 2020-2021  
BO 3510: Medicinal Botany - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
<b>Credit-I</b>		<b>15</b>
1.	<b>Medicinal Plants:</b> History, Scope and Importance	<b>01</b>
2	<b>Indigenous Medicinal Sciences;</b> Definition and Scope	<b>01</b>
3.	<b>Ayurveda:</b> History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments	<b>04</b>
4.	<b>Siddha:</b> Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine.	<b>02</b>
5	<b>Unani:</b> History, concept: Umoor-e- tabiya, tumors treatments/ therapy, polyherbal formulations.	<b>02</b>
6	<b>Conservation of endangered and endemic medicinal plants:</b> Definition: endemic and endangered medicinal plants, Red list criteria; In situ conservation: Biosphere reserves, sacred groves, National Parks; Ex situ conservation: Botanic Gardens, Ethnomedicinal plant Gardens.	<b>05</b>
<b>Credit-II</b>		<b>15</b>
5	<b>Propagation of Medicinal Plants:</b> Objectives of the nursery, its classification, important components of a nursery, sowing, pricking, use of green house for nursery production, propagation through cuttings, layering, grafting and budding.	<b>05</b>
6.	<b>Ethnobotany and Folk medicines:</b> Definition; Ethnobotany in India: Methods to study ethnobotany; Applications of Ethnobotany: National interacts, Palaeo-ethnobotany.	<b>05</b>
7.	<b>Folk medicines</b> of ethnobotany, ethnomedicine, ethnoecology, ethnic communities of India. Application of natural products to certain diseases- Jaundice, cardiac, infertility, diabetics, Blood pressure and skin diseases.	<b>05</b>

### Suggested Readings

1. Trivedi P C, 2006. Medicinal Plants: Ethnobotanical Approach, Agrobios, India.
2. Purohit and Vyas, 2008. Medicinal Plant Cultivation: A Scientific Approach, 2nd edn. Agrobios, India.

**Skill Enhancement course****T.Y.B.Sc. Botany CBCS Pattern  
(Semester V, Paper XI) 2020-2021****BO 3511: Plant Diversity and Human Health - 2 Credits (30 Lectures)**

<b>Sr. No.</b>	<b>Topic Details</b>	<b>No. of Lectures</b>
	<b>Credit-I</b>	<b>15</b>
<b>1.</b>	<b>Plant diversity</b> and its scope- Genetic diversity, Species diversity, Plant diversity at the ecosystem level,	<b>03</b>
<b>2</b>	<b>Agrobiodiversity</b> and cultivated plant taxa, wild taxa. Values and uses of Biodiversity: Ethical and aesthetic values, Precautionary principle, Methodologies for valuation, Uses of plants, Uses of microbes.	<b>05</b>
<b>3.</b>	<b>Loss of Biodiversity:</b> Loss of genetic diversity, Loss of species diversity, Loss of ecosystem diversity, Loss of agrobiodiversity, Projected scenario for biodiversity loss,	<b>04</b>
<b>4.</b>	Management of Plant Biodiversity: Organizations associated with biodiversity management-Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR; Biodiversity legislation and conservations.	<b>03</b>
	<b>Credit-II</b>	<b>15</b>
<b>5</b>	<b>Conservation of Biodiversity:</b> Conservation of genetic diversity, species diversity and ecosystem diversity, In situ and ex situ conservation, Social approaches to conservation, Biodiversity awareness programmes, Sustainable development.	<b>08</b>
<b>6.</b>	Role of plants in relation to Human Welfare; a) Importance of forestry their utilization and commercial aspects b) Avenue trees, c) Ornamental plants of India. d) Alcoholic beverages through ages. Fruits and nuts: Important fruit crops their commercial importance. Wood and its uses.	<b>07</b>

**Suggested Readings**

Krishnamurthy, K.V. (2004). An Advanced Text Book of Biodiversity - Principles and Practices. Oxford and IBH Publications Co. Pvt. Ltd. New Delhi.

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester VI, Paper I) 2020-2021  
BO 361: Plant Physiology and Metabolism - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
<b>Credit-I</b>		<b>15</b>
<b>1.</b>	<b>Mineral nutrition:</b> Classification of mineral elements, macro and micronutrients; Role of essential elements; Transport of ions across cell membrane, Ionophores, Carriers and Channels	<b>03</b>
<b>3.</b>	<b>Photosynthesis:</b> Mechanism of photosynthesis- Electromagnetic spectrum Ultra-Structure of Chloroplast, Organization of Light-Absorbing Antenna Systems, Light Reaction: (Cyclic and Non-cyclic photophosphorylation), Dark Reaction: Calvin-Benson Cycle, Photorespiration, C4 cycle and CAM pathway of carbon fixation).	<b>07</b>
<b>4.</b>	<b>Respiration:</b> Types of respiration (Aerobic and anaerobic), Mechanism of aerobic respiration (Glycolysis, TCA cycle, Terminal oxidation and phosphorylation in respiratory chain); Pentose Phosphate Pathway.	<b>05</b>
<b>Credit-II</b>		<b>15</b>
<b>5</b>	<b>Stomatal Biology:</b> Light-dependent Stomatal Opening, Mediation of Blue-light Photoreception in Guard Cells by Zeaxanthin, Reversal of Blue Light-Stimulated Opening by Green Light, The Resolving Power of Photophysiology (Overview).	<b>04</b>
<b>6.</b>	<b>Translocation in phloem:</b> Composition of phloem sap, girdling experiment; Pressure flow model.	<b>03</b>
<b>7.</b>	<b>Plant growth regulators:</b> Discovery and physiological roles of auxins, gibberellins, cytokinins, ABA, ethylene.	<b>05</b>
<b>8</b>	<b>Photomorphogenesis:</b> Red and far red light responses on photomorphogenesis; Phytochrome (discovery and mode of action).	<b>03</b>

**Suggested Readings:**

1. Lincoln Taiz, Eduardo Zeiger, Ian Max Moller and Angus Murphy 2015. Plant Physiology and Development (Sixth Edition) Sinauer Associates, Inc Publishers Sunderland, Massachusetts U.S.A.

2. Epstein, E., and Bloom, A. J. (2005) Mineral Nutrition of Plants: Principles and Perspectives, 2nd ed. Sinauer Associates, Sunderland, MA.
3. Salisbury F.B and Ross C.W (1992). Plant physiology (Fourth Edition) Wadsworth Publishing Company, California, USA.
4. V. K. Jain (2017) Fundamentals of Plant Physiology S. Chand Publications.

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester VI, Paper II) 2020-2021  
BO 362: Biochemistry - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
<b>Credit-I</b>		<b>15</b>
<b>1.</b>	<b>Foundation of Biochemistry:</b> From molecules to the first cell (origin of a cell), Miller and Urey experiment. Biomolecules of a cell, functional groups in biomolecules, conformations and configurations of biomolecules.	<b>03</b>
<b>2</b>	<b>Water: The solvent of life:</b> Physical properties of water, structure of water molecule, polarity of water molecule, weak interactions in aqueous solutions.	<b>02</b>
<b>3.</b>	<b>Amino acids and proteins:</b> Structure, classification, properties and functions of amino acids. Structure (primary, secondary, tertiary and quaternary), properties and functions of proteins. Biological disorders of amino acid metabolism. Commercial applications.	<b>05</b>
<b>4.</b>	<b>Enzymes:</b> Definition, nature of enzymes and co-factors, classification and properties of enzymes, active site. Mechanism of enzyme action: free energy, activation energy, binding energy, transition state, lock and key hypothesis, induced fit theory. Factors affecting enzyme activity: pH, temperature, substrate concentration, enzyme concentration. Enzyme inhibition: Competitive, uncompetitive, non-competitive. Reversible and irreversible inhibition, feedback inhibition.	<b>05</b>
<b>Credit-II</b>		<b>15</b>
<b>5</b>	<b>Carbohydrates:</b> Definition, classification of carbohydrates- Monosaccharides: aldoses and ketoses, configurations, linear to ring structure; Oligosaccharides: glycosidic bond, reducing and non-reducing sugars; Polysaccharides: homopolysaccharides, heteropolysaccharides,	<b>08</b>



	examples, their structures, locations and role. Properties and functions of carbohydrates. Commercial applications.	
<b>6.</b>	<b>Lipids:</b> Definition, classification of lipids: simple, conjugate and derived lipids, properties and functions of lipids. Biological disorders of lipid metabolism. Commercial applications.	<b>05</b>
<b>7.</b>	<b>Vitamins:</b> Definition, classification of vitamins. source and functions of vitamins.	<b>02</b>

### Suggested Readings:

- Nelson, D. L., & Cox, M. M.** (2017). *Lehninger principles of biochemistry* (7<sup>th</sup> ed.). W.H. Freeman.
- Buchanan, B. B., Gruissem, W., & Jones, R. L.** (2000). *Biochemistry & molecular biology of plants*. Rockville, Md.: American Society of Plant Physiologists.
- Taiz, L. Zeiger, E., Moller, I.M. and Murphy, A.** (2015) *Plant Physiology and Development*. 6th Edition, Sinauer Associates, Sunderland, CT.
- Jain, J. L., Jain, S. & Jain, N.** (2020) *Fundamentals of Biochemistry*, Revised edition, S. Chand Publishing
- Verma S.K. and Verma M.** (2007) *A text book of Plant Physiology, Biochemistry and Biotechnology*, S. Chand Publishing.

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester VI, Paper III) 2020-2021  
BO 363: Plant Pathology - 2 Credits (30 Lectures)**

<b>Sr. No.</b>	<b>Topic Details</b>	<b>No. of Lectures</b>
	<b>Credit-I</b>	<b>15</b>
<b>1.</b>	<b>Fundamentals of Plant Pathology:</b> Introduction, Important terminology- Incitants, Host, Symptoms, Parasite, Pathogen, Inoculum, Penetration, Infection, Incubation, Disease. Economic importance of plant diseases, History of plant pathology, Introduction to Indian Agriculture Research Institute (IARI), International Crop Research Institute for Semi-Arid Tropics (ICRISAT), Contribution of Anton De Bary and Prof. B.B. Mundkur.	<b>02</b>
<b>2</b>	Disease Development: Concept of disease cycle, Inoculation, Prepenetration, Penetration, Infection, Dissemination. Epidemics-Forms,	<b>02</b>

	Decline, Exponential model.	
<b>3.</b>	<b>Defense Mechanisms:</b> Concept and Definition, Types-Preexisting-Structural and chemical, Induced- Structural and Biochemical.	<b>02</b>
<b>4.</b>	<b>Methods of Studying Plant Diseases.</b> Macroscopic study, Microscopic study, Koch's postulates. Types of culture Media, Pure culture methods- Streak plate, Pour plate, Spread plate.	<b>02</b>
<b>5</b>	<b>Fungal Plant Diseases</b> Introduction to fungi as plant pathogens. Study of Diseases- Downy mildew of Grapes, Head smut of Jowar, Tikka diseases of Groundnut with reference to causal organism, symptoms and disease management.	<b>04</b>
<b>6</b>	<b>Bacterial Plant Diseases.</b> Introduction to bacteria as plant pathogens, Study of Diseases- Citrus Canker, Black arm of Cotton with reference to causal organism, symptoms and disease management.	<b>03</b>
<b>Credit-II</b>		<b>15</b>
<b>5</b>	<b>Mycoplasma Plant Diseases:</b> Introduction to Mycoplasma as plant pathogens, Study of Diseases- Grassy shoot disease of sugarcane, Little leaf of brinjal with reference to causal organism, symptoms and disease management.	<b>03</b>
<b>6.</b>	<b>Nematodal Plant Diseases:</b> Introduction to Nematodes as plant pathogens. Study of Diseases- Root knot diseases of vegetables, Soyabean cyst Nematodes with reference to causal organism, symptoms, Integrated management of Nematodal diseases.	<b>02</b>
<b>7.</b>	<b>Viral Plant Diseases:</b> Introduction of Virus as plant pathogens. Study of Diseases- Papaya Mosaic Disease, Bunchy top of Banana with reference to causal organism, symptoms and causal organism	<b>02</b>
<b>8</b>	<b>Non-Parasitic Diseases.</b> The impact and abiotic causes- Temperature, Soil moisture and relative humidity, Poor oxygen, Poor light, Air pollutants, mineral deficiencies. Herbicidal injury, Study of Mango necrosis, Black Heart of Potato.	<b>04</b>
<b>9</b>	<b>Principles of plant diseases control:</b> General account, Quarantine,	<b>04</b>

	Eradication, cultural control practices, Biological control. Curative measures, chemical control, Use of Effective Microorganism solution (EMS), Microbial Pesticides.	
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**Suggested Readings:**

1. Singh R. S. (2019) Introduction to Principles of Plant Pathology 4Ed (PB2019) Paperback.
2. Plant Pathology 2/e PB....Sharma PD Paperback – 1 January 2016
3. A.V.S.S. Sambamurty (2010) Principles of plant pathology, Wiley distributor
4. George Agrios (2004) Plant Pathology 5th Edition, Academic Press

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester VI, Paper IV) 2020-2021  
BO 364: Evolution and Population genetics- 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
	<b>Credit-I</b>	<b>15</b>
<b>1</b>	<b>Organic Evolution:</b> Distinction between Origin of life and Organic Evolution, Historical account of Origin of life, Origin of Earth Vs Origin of life: Gaia Hypothesis, Earliest Fossils, Prebiotic Evolution, Abiotic synthesis of organic matter, Primordial soup, origin of membranes, Oparin's Coacervate model, Theory of Panspermia, Early life and RNA and Origin of genetic code	<b>06</b>
<b>2</b>	<b>Organic Evolution:</b> The concept of organic evolution, Theories of Evolution, Pre-Darwinian period, Theory of Inheritance of acquired characters (Lamarck's), Darwinism- Theory of Natural Selection, Post-Darwinian period- Modern synthetic theory	<b>05</b>
<b>2</b>	<b>Evidences of Evolution</b>  Direct evidences and conclusions from fossil records, Indirect evidences, Evidences from Genetics, Evidences from bio-geographical relations	<b>04</b>
	<b>Credit-II</b>	<b>15</b>
<b>4</b>	<b>Evolution Through Ages:</b> Fossils and Geological Time scale: Fossils and	<b>05</b>

	Fossilization, Conditions of fossilization, Dating of fossils: Uranium Lead method, Radio-carbon method, U-series and ESR method, Geological Time scale: Eras, Periods, epochs, and duration in millions of years and plant life.	
<b>5.</b>	<b>Population Genetics and Evolution:</b> Concept of Mendelian population, Gene Pool and its models, Hardy-Weinberg law of gene frequencies, Factors affecting allelic frequency, Genetic polymorphism	<b>04</b>
<b>5.</b>	<b>Speciation and Isolating Mechanisms:</b> Introduction, Morphological Criteria for Species and Races, Allopatric and Sympatric Populations, Isolating Mechanisms: Pre zygotic Isolation mechanisms: Concept, Spatial & Ecological;, Seasonal Isolation, Ethological Isolation, Mechanical Isolation, Post zygotic Isolation mechanisms: Concept, Hybrid in viability, Hybrid sterility & Hybrid breakdown.	<b>06</b>

**Suggested readings:**

1. P. K Gupta, Cytology, Genetics and Evolution , Rastogi Publications
2. Verma P.S and Agarwal V.K. (2006) Cell Biology, Genetics, Molecular Biology, Evolution, Ecology. S. Chand and Company, New Delhi
3. Shukla R.S. & Chandel P.S. Cytogenetics, Evolution & Biostatistics. S. Chand Publications,
4. Tomar & Singh, Evolutionary Biology, Rastogi Publications
5. Suryaprakash Mishra. A textbook of Cell Biology, Genetics and Evolution, Kalyani Publication
6. N Shukla, Population Genetics, DISCOVERY PUBLISHING, PVT. LTD.
7. Veer Bala Rastogi .Organic Evolution (Evolutionary Biology), Scientific International Pvt. Ltd.
8. N. Anurgam, Evolution, Saras Publications
9. N. Anurgam, Organic Evolution, Saras Publications

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester VI, Paper V) 2020-2021  
BO 365: Advanced Plant Biotechnology - 2 Credits (30 Lectures)**

<b>Sr. No.</b>	<b>Topic Details</b>	<b>No. of Lectures</b>
	<b>Credit-I</b>	<b>15</b>
<b>1</b>	<b>Biotechnology:</b>	<b>02</b>

	Introduction, Traditional and modern Biotechnology. Impact of Biotechnology on Health care, Agriculture, and Environment	
<b>2</b>	<b>Plant Tissue Culture:</b> Concepts of Cell theory & Cellular totipotency, Landmarks in plant tissue culture. Pluripotency, Differentiation, dedifferentiation, redifferentiation, Hormones used in PTC, 'Explant' for plant tissue culture and Response of explants in vitro– callus formation, organogenesis (direct and indirect) and embryogenesis (direct and indirect). Micro propagation of Banana (in detail from Selection of explant to hardening and marketing)	<b>06</b>
<b>3.</b>	<b>Techniques of Genetic Engineering and Methods of gene transfer in Plants-</b> Introduction to Molecular tools: Definition and role of Nucleases, Polymerases, Ligases, Polynucleotide kinases, Alkaline Phosphatases. Types of vectors- Definition and characters (2-4) of Plasmids, Phages, Cosmids, BAC, YAC, Plant viruses, Animal viruses.  Methods of gene transfer in Plants –  Direct gene transfer – Definition and concept of Electroporation, Microinjection, and Gene gun  Indirect gene transfer- Agrobacterium mediated gene transfer method, Ti-plasmid: structure and functions, T-DNA  Gene amplification technique -Polymerase chain reaction  DNA finger printing	<b>07</b>
	<b>Credit-II</b>	<b>15</b>
<b>4</b>	<b>Cryopreservation and Germplasm Conservation</b>  Definition and concept, techniques of cryopreservation, cold storage, long term and short term storage, applications.  <b>Germplasm Conservation:</b> Preservation of Cell, tissue, organ, whole organism. Concept of Gene Bank, DNA Bank, Seed Bank, Pollen Bank etc.	<b>03</b>
<b>5.</b>	<b>Biotechnology and Society</b>	<b>05</b>

	Biotechnology- Benefits, GM foods and its safety, Recombinant foods and religious beliefs, Recombinant therapeutic product for human health care. Patenting of biotechnological inventions and Intellectual property rights.	
<b>5.</b>	<p><b>Microbial Biotechnology:</b></p> <p>Biochemistry of fermentation, Microorganism used in fermentation, fermentable substrate, Ethanol fermentation methods, Distilleries producing alcohols. Commercial production: Alcoholic beverages, organic acids, citric acids. Advantages of fermentation.</p> <p><b>Transgenic Plants as Bioreactors:</b> Metabolic engineering of starch, cyclodextrins, fructans, Bioplastics, Genetically engineered plants as protein factories, Production of therapeutic proteins from plants.</p>	<b>06</b>
<b>6</b>	<p><b>Nano-biotechnology</b></p> <p>Definition and concept, Applications of nanotechnology in agriculture (fertilizers and pesticides).</p>	<b>01</b>

### Suggested readings:

1. R. C. Dube (2008) - A Text Book of Biotechnology, S. Chand
2. P.K. Gupta-Elements of Biotechnology
3. Satyanarayana-Biotechnology
4. Kalyan Kumar De-Plant tissue culture
5. Pal J.K. and Ghaskadabi S.S. (2008) Fundamentals of Molecular Biology.
6. Verma and Agrawal- Molecular Biology
7. Devi P.2008-Principle and Methods of plant Molecular Biology, Biochemistry and Genetics Agrobios, Jodhpur, India.
8. Glick B.R. and Tompson J.E. 1993 Methods in Plant Molecular Biology and Biotechnology CRC Press Boca Raton, Florida.
9. Hall R.D. (Ed.) 1999 Plant cell culture Protocol human press Inc., New Jersey, USA

10. Kumar H.D. 2002 A Text Book of Biotechnology 2nd Edn. Affiliated Easyt West Press Private Ltd New Delhi.
11. Ramawat K.G. 2003 Plant Biotechnology, S. Chand & Co. Ltd . Ramnagar New Delhi. 110055
12. Trivedi P.C.2000 Plant Biotechnology, Panima Publishing Carpation, New Delhi.
13. Rajdan- Plant tissue culture.
13. Kalyan Kumar De-Plant tissue culture
14. Pal J.K. and Ghaskadabi S.S. (2008) Fundamentals of Molecular Biology.
15. .Razdan M.K. - Introduction to Plant Tissue culture (Oxford & IBH Publ, New Delhi)

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester VI, Paper VI) 2020-2021  
BO 366: Plant Breeding and Seed Technology - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
	<b>Credit-I –Plant Breeding</b>	<b>15</b>
<b>1</b>	<b>Introduction:</b> Definition, Scope and objectives and History of Plant breeding in India	<b>01</b>
<b>2</b>	<b>Techniques and practices of plant breeding</b>	<b>02</b>
	<b>A. Plant Introduction</b> <ul style="list-style-type: none"> <li>• Definition</li> <li>• Types (Primary and Secondary)</li> <li>• Procedure</li> <li>• Merits and Demerits</li> <li>• Important Achievements</li> </ul>	
	<b>B. Selection methods</b> <ul style="list-style-type: none"> <li>• Concept,</li> <li>• Types of selections –mass selection, pure line selection and clonal selection.</li> <li>• Advantage and disadvantages of selection</li> <li>• Achievements of selection breeding</li> </ul>	<b>03</b>
	<b>C. Hybridization</b> <ul style="list-style-type: none"> <li>• Definition, Concept and Objectives</li> <li>• Precaution to be taken during hybridization</li> <li>• Types: Intervarietal and Distant</li> <li>• General procedure of hybridization</li> <li>• Methods of hybridization: Pdigree and bulk</li> <li>• Hybrid vigour and heterosis</li> </ul>	<b>04</b>
<b>3</b>	<b>Advanced techniques in Plant breeding</b>	<b>03</b>
	<b>A. Mutation breeding</b>	

	<ul style="list-style-type: none"> <li>• Definition and concept</li> <li>• Mutagens (Physical and Chemical)</li> <li>• Mutants</li> <li>• Types of mutation (Spontaneous and Induced)</li> <li>• Application of mutation breeding</li> <li>• Limitations of mutation breeding</li> </ul>	
	<p><b>B. Tissue Culture</b></p> <ul style="list-style-type: none"> <li>• Definition and concept</li> <li>• Totipotency</li> <li>• Application of tissue, embryo and anther culture in seed production</li> </ul>	<b>02</b>
<b>Credit-II - SEED TECHNOLOGY</b>		<b>15</b>
<b>4</b>	<p><b>Introduction to Seed Technology</b></p> <ul style="list-style-type: none"> <li>• Seed as a basic input in agriculture</li> <li>• Classes of seed             <ol style="list-style-type: none"> <li>1. Nucleus</li> <li>2. Breeder</li> <li>3. Foundation</li> <li>4. Certified</li> </ol> </li> </ul> <p>Role of seed technology</p>	<b>02</b>
<b>5.</b>	<p><b>Seed legislation</b></p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Seed legislation in India (Seed Act)</li> </ul>	<b>01</b>
<b>6</b>	<p><b>Seed Production</b></p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• National Seed Corporation (NSC) and its objectives</li> <li>• State Seed Corporation (SSC) and its objectives</li> <li>• General procedure for Seed Production             <ul style="list-style-type: none"> <li>○ Location and Season</li> <li>○ Land requirement</li> <li>○ Importance of soil and water testing</li> <li>○ Cultural practices</li> <li>○ Isolation distance</li> <li>○ Plant protection</li> <li>○ Weed Control</li> <li>○ Rouging</li> <li>○ Harvesting</li> <li>○ Threshing</li> <li>○ Seed Processing</li> </ul> </li> </ul>	<b>03</b>
<b>7</b>	<p><b>Seed Certification</b></p> <ul style="list-style-type: none"> <li>• Definition, Objectives and Concept</li> <li>• Phases of Seed Certification</li> <li>• General procedure of seed certification</li> <li>• Field inspection</li> <li>• Duties of seed inspector</li> </ul>	<b>02</b>
<b>8</b>	<p><b>Seed Testing</b></p>	<b>03</b>



	<p><b>A. Physical Purity Analysis</b></p> <ul style="list-style-type: none"> <li>• Definition of purity components</li> <li>• Physical Purity Work Board</li> <li>• Procedure</li> </ul> <p><b>B. Moisture Testing</b></p> <ul style="list-style-type: none"> <li>• Concept</li> <li>• Air oven method</li> <li>• Digital Moisture Meter</li> </ul> <p><b>C. Germination testing</b></p> <ul style="list-style-type: none"> <li>• Definition and objectives</li> <li>• Procedure and methods for germination testing (Paper, Sand and Soil )</li> <li>• Seedling evaluation (Normal Seedlings, Abnormal Seedlings, Multigerm Seed Units and Non-germinated Seeds)</li> </ul>	
<b>9</b>	<p><b>Seed Pathology and Entomology</b></p> <ul style="list-style-type: none"> <li>• Definition</li> <li>• Seed Borne pathogens <ul style="list-style-type: none"> <li>○ Fungi</li> <li>○ Bacteria</li> <li>○ Viruses</li> </ul> </li> <li>• Influence of seed borne pathogens on seed production</li> <li>• Common insect pest and its impact on seed production</li> </ul>	<b>02</b>
<b>10</b>	<p><b>Seed Storage</b></p> <ul style="list-style-type: none"> <li>• Definition and Concept</li> <li>• Seed treatment</li> <li>• Management of seed storage structures <ul style="list-style-type: none"> <li>○ Sanitization</li> <li>○ Dehumidification</li> <li>○ Fumigation</li> </ul> </li> </ul>	<b>02</b>

## Suggested readings:

1. Laxmi lal somani and Devidas patel (2020) Textbook of seed science and technology, Agrotech publishing co.
2. Vijay Pal Singh Panghal and Axay Bhuker (2020) Seed Science and Technology. Kalyani publisher
3. Gardner and Simmons Snustad 2005 (Eighth Edition). Principles of Genetics, John Wiley and Sons, Singapore.
4. Sharma J.R 1994 Principles and practices of Plant Breeding. Tata McGraw Hill Publishers Company Ltd., New Delhi.
5. Singh B.D 1996 Plant Breeding – Principles and methods. Kalyani Publications, Ludhiana.
6. Allard R.W 1995. Principles of Plant Breeding. John Wiley and Sons, Ice., Singapore.
7. Agarwal R.L. --- Seed Technology, Oxford & IBH Publishing Co Pvt.Ltd

## 8. TNAU (ICAR) Principles of Seed technology (2020)

**T.Y.B.Sc. Botany CBCS Pattern**  
**Practical (Semester V Paper VII) 2020-2021**  
**BO 367: Practical based on BO361 and BO362 (2 Credits)**

Sr. No.	Title	No. of Practical
1.	Determination of osmotic potential of plant cell sap by plasmolysis method	01
2	Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte.	01
3	Demonstrate the activity of catalase and study the effect of pH and enzyme concentration.	01
4	To study the effect of light intensity and bicarbonate concentration on O <sub>2</sub> evolution in photosynthesis.	01
5	Comparison of the rate of respiration in any two parts of a plant.	01
6	Separation of amino acids by paper chromatography.	02
7	Demonstration experiments (any four) i). Bolting. ii). Effect of auxins on rooting. iii). Suction due to transpiration. iv). R.Q. v). Respiration in roots.	01
8	Estimation of total free amino acids by spectrophotometry	01
9	Separation of amino acids by paper chromatography.	01
10	Estimation of soluble proteins by Lowery <i>et. al.</i> method.	01
11	Demonstration of Enzyme activity: Amylase /invertase /catalase	01

12	Estimation of reducing sugars by DNSA method.	01
13	Estimation of Vitamin C (Ascorbic acid) from plants.	01
14	Qualitative tests for starch, lipids and proteins.	01
15	Determination of the iodine number of lipids using Hanus method.	01

**T.Y.B.Sc. Botany CBCS Pattern  
Practical (Semester V Paper VIII) 2020-2021  
BO 368: Practical based on BO363 and BO364 (2 Credits)**

Sr. No.	Title	No. of Practical
1.	Preparation of any one culture media for isolation of plant pathogens.	01
2	Culture technique- Streak plate methods, pour plate methods, Spread plate methods.	01
3	Study of any two of fungal (Downy mildew of Grapes, Head smut of Jowar, Tikka diseases of Groundnut) diseases	01
4	Study of any two of each bacterial and mycoplasma diseases	01
5	Study of any two of each viral and non-parasitic diseases of plants.	01
6	Preparation of 1% Bordeaux mixture and Bordeaux paste 10%.	01
7	Preparation of Jivamruta.	01
8	Study of Koch's Postulates.	01
9	Study of Fungicides and Microbial pesticides.	01
9	Study of Geological time scale	01
10	Study of types of Fossils : i) Coal ball ii) Rhynia vii) Lyginopteris iii) Pentoxylon iv) Nipaniophyllum v) Lepidodendron	01
11	Demonstration of any three evidences of Organic Evolution	01
12	Numerical Problems based on Allele frequency and Genotype frequency	01
13	Numerical Problem based on Hardy-Weinberg Equilibrium	01

14	Study of Sympatric and Allopatric speciation with suitable example	01
15	Study of Isolation mechanism : Prezygotic & Postzygotic(Any one example from each)	01
16	Submission of Report on Visit to Paleobotany Laboratory/Museum/Fossil Garden	01

**T.Y.B.Sc. Botany CBCS Pattern  
Practical (Semester V Paper IX) 2020-2021  
BO 369: Practical based on BO365 and BO366 (2 Credits)**

Sr. No.	Title	No. of Practical
1.	Preparation and sterilization of MS Medium and Callus Induction using leaf primordia	01
2	Production of secondary metabolites in any suitable plant material	01
3	Artificial seed production by Sodium Alginate method encapsulation (somatic embryogenesis)	01
4	Demonstration to equipments used in genetic engineering like gene gun, PCR, gel doc, microcentrifuge, electrophoresis, micropipettes, incubator, shaker etc. (live/videos/photographs/visit to research labs)	01
5	Study of Transgenic plants- Arabidopsis thaliana as a model plant, Bt- Brinjal, Flr-svr Tomato, and other GM crops like soybean, maize, tobacco as a pharmaceuticals, banana as a edible vaccine etc. (live/videos/photographs/visit to research labs)	01
6	Preparation of plant based nano-particles	01
7	Demonstration to Fermentation of fruit juice and wine production from grapes/pomegranate/jamun/ apple/ber (live/videos/photographs/visit to research labs)	01
8	Problems on genetic engineering (set of problems will be given on restriction enzymes, vectors etc.)	01

9	Demonstration of Hybridization Techniques (Emasculation, Hand Pollination, Bagging and Tagging) in cotton and tomato.	01
9	Effect of chemical mutagens on seed germination and seedling growth.	01
10	Study of pollen viability and floral morphology of crops	01
11	To test seed moisture by hot air oven method	01
12	To study germination methods (Paper, Sand and Soil)	01
13	Physical purity analysis of seed sample	01
14	Visual examination of dry seeds for disease symptoms	01
15	To study any one common seed insect pest w.r.t to their life cycle, way of infestation/damage, symptoms and control measures.	01
16	Visit to a Plant Breeding Research Centre/ Seed Industry and report submission	01

Note: Submission of minimum 10 seed samples along with their botanical names, family, variety etc. to the department at the time of final practical examination

### Skill Enhancement course

#### T.Y.B.Sc. Botany CBCS Pattern (Semester VI, Paper X) 2020-2021

#### BO 3610: Nursery and Gardening Management- 2 Credits (30 Lectures)

Sr. No.	Topic Details	No. of Lectures
	<b>Credit-I Nursery Management</b>	<b>15</b>
<b>1</b>	<b>Nursery:</b> definition, objectives and scope and building up of infrastructure for nursery, planning and seasonal activities - Planting - direct seeding and transplants.	<b>03</b>
<b>2</b>	<b>Seed:</b> Structure and types - Seed dormancy; causes and methods of breaking dormancy - Seed storage: Seed banks, factors affecting seed viability, genetic erosion –Seed production technology - seed testing and certification.	<b>03</b>
<b>3.</b>	<b>Vegetative propagation:</b> air-layering, cutting, selection of cutting, collecting season, treatment of cutting, rooting medium and planting of cuttings - Hardening of plants– greenhouse - mist chamber, shed root, shade house and glass house.	<b>09</b>

<b>Credit-II Gardening Management</b>		<b>15</b>
<b>4</b>	Gardening: definition, objectives and scope - different types of gardening - landscape and home gardening - parks and its components - plant materials and design -computer applications in landscaping - Gardening operations: soil laying, manuring, watering, management of pests and diseases and harvesting.	<b>08</b>
<b>5.</b>	Sowing/raising of seeds and seedlings - Transplanting of seedlings - Study of cultivation of different vegetables: cabbage, brinjal, lady's finger, onion, garlic, tomatoes, and carrots - Storage and marketing procedures.	<b>07</b>

### Suggested Readings

1. Bose T.K. & Mukherjee, D., Gardening in India, Oxford & IBH Publishing Co., New Delhi. 1972.
2. Sandhu, M.K., Plant Propagation, Wile Eastern Ltd., Bangalore, Madras. 1989.
3. Kumar, N., Introduction to Horticulture, Rajalakshmi Publications, Nagercoil. 1997.
4. Edmond Musser & Andres, Fundamentals of Horticulture, McGraw Hill Book Co., New Delhi.
5. Agrawal, P.K. Hand Book of Seed Technology, Dept. of Agriculture and Cooperation, National Seed Corporation Ltd., New Delhi. 1993.
6. Janick Jules. Horticultural Science. (3rd Ed.), W.H. Freeman and Co., San Francisco, USA. 1979.

**T.Y.B.Sc. Botany CBCS Pattern  
(Semester VI, Paper X) 2020-2021  
BO 3611: Biofertilizers- 2 Credits (30 Lectures)**

<b>Sr. No.</b>	<b>Topic Details</b>	<b>No. of Lectures</b>
<b>Credit-I</b>		<b>15</b>
<b>1</b>	<b>Introduction:</b> 1.1 Introduction, Scope and importance of Biofertilizers 1.2 General account of the microbes used as Biofertilizers	<b>02</b>
<b>2</b>	<b>Bacterial Biofertilizers</b> 2.1. Isolation of Rhizobium, Identification, Mass multiplication, Carrier based inoculants. 2.2. Azospirillum isolation and mass multiplication, carrier based	<b>09</b>

	<p>inoculants and associative effect of different organisms</p> <p>2.3. Azotobacter, classification and characteristics</p> <p>2.4. Crop response to Azotobacter inoculums, Mass multiplication of Azotobacter</p> <p>2.5. Applications of Azospirillum</p> <p>2.6. Phosphate solubilizing Bacteria</p>	
<b>3.</b>	<p><b>Algal Biofertilizers</b></p> <p>3:1. Cyanobacteria (Blue Green Algae): Isolation of Anabaena from Azolla, Mass Multiplication of Anabaena</p> <p>3.2. Azolla - Anabaena relationship</p> <p>3.3. Biological Nitrogen fixation</p> <p>3.4. Blue Green algae in a rice cultivation.</p> <p>3.5. Applications of BGA</p>	<b>04</b>
	<b>Credit-II</b>	<b>15</b>
<b>4</b>	<p><b>Fungal Biofertilizers</b></p> <p>4.1. Introduction, Occurrence and Distribution of Mycorrhizal association.</p> <p>4:2. Types of Mycorrhizal association, growth and yield - colonization of VAM - Vesicular Arbuscular Mycorrhiza</p> <p>4.3. Mycorrhizal applications in agriculture</p>	<b>09</b>
<b>5.</b>	<p><b>Compost and Manure</b></p> <p>5.1. Organic Farming, green manuring, organic manures and their uses</p> <p>5.2. Recycling by composting method of biodegradable, municipal, agricultural and industrial wastes</p> <p>5.3. Biocompost making methods, Types and methods of vermicomposting</p> <p>5.4. Benefits of vermicompost, field applications</p>	<b>06</b>

### Suggested readings

1. Dubey, R. C. (2005). A text book of Biotechnology. S. Chand & Co. New Delhi, India.
2. Kumaresan, V. (2005). Biotechnology. Saras Publication, New Delhi, India.
3. Sathe, T. V. (2004). Vermiculture and Organic Farming. Daya Publishers, Delhi, India.
4. Jshon, Jothi Prakash, E. (2004). Outline of Plant Biotechnology. Emkay Publication, New Delhi, India.
5. Subha Rao, N. S. (2000). Soil Microbiology. Oxford and IBH Publishers, New Delhi, India.
6. Vayas, S. C., Vayas S. and Modi, H. (1990). Biofertilizers and Organic Farming. Ekta Publication, Nanded, India.

### **Webliography**

1. Production of various Biofertilizers. [www.biologydiscussion.com](http://www.biologydiscussion.com)
2. Biofertilizers [vikaspedia.in](http://vikaspedia.in)
3. [www.solverchem.com](http://www.solverchem.com)



# **Savitribai Phule Pune University [SPPU]**

**B.Sc. (Chemistry)**  
(Three Years Integrated Degree Program)

**Choice Based Credit System [CBCS]**  
2019 Pattern

**Third Year Bachelors of Science**  
**(T. Y. B. Sc. CHEMISTRY)**

From  
Academic Year 2021-22

**Board of Studies in Chemistry**  
Savitribai Phule Pune University [SPPU]  
Pune-411007

## Structure of T. Y. B. Sc. Chemistry

(According to CBCS – 2019 Pattern of SPPU)

Semester	DSEC/SEC	Nature	Paper Code	Code and Title	Credits/Lectures
<b>V</b>	<b>DSEC-I</b>	Theory	CH-501	Physical Chemistry-I	Credit-2, 36 L
		Theory	CH-502	Analytical Chemistry-I	Credit-2, 36 L
		Practical	CH-503	Physical Chemistry Practical-I	Credit-2, 73 L
	<b>DSEC-II</b>	Theory	CH-504	Inorganic Chemistry-I	Credit-2, 36 L
		Theory	CH-505	Industrial Chemistry	Credit-2, 36 L
		Practical	CH-506	Inorganic Chemistry Practical-I	Credit-2, 73 L
	<b>DSEC-III</b>	Theory	CH-507	Organic Chemistry-I	Credit-2, 36 L
		Theory	CH-508	Chemistry of Biomolecules	Credit-2, 36 L
		Practical	CH-509	Organic Chemistry Practical-I	Credit-2, 73 L
	<b>SEC- I</b>	Theory	CH-510	(A) Introduction of Medicinal Chemistry <b>OR</b> (B) Polymer Chemistry	Credit-2, 36 L
<b>SEC- II</b>	Theory	CH-511	(A) Environmental Chemistry <b>OR</b> (B) Chemo informatics	Credit-2, 36 L	
<b>VI</b>	<b>DSEC-IV</b>	Theory	CH-601	Physical Chemistry-II	Credit-2, 36 L
		Theory	CH-602	Physical Chemistry -III	Credit-2, 36 L
		Practical	CH-603	Physical Chemistry Practical-II	Credit-2, 73 L
	<b>DSEC-V</b>	Theory	CH-604	Inorganic Chemistry-II	Credit-2, 36 L
		Theory	CH-605	Inorganic Chemistry-III	Credit-2, 36 L
		Practical	CH-606	Inorganic Chemistry Practical-II	Credit-2, 73 L
	<b>DSEC-VI</b>	Theory	CH-607	Organic Chemistry-II	Credit-2, 36 L
		Theory	CH-608	Organic Chemistry-III	Credit-2, 36 L
		Practical	CH-609	Organic Chemistry Practical-II	Credit-2, 73 L
	<b>SEC III</b>	Theory	CH-610	(A) Chemistry of Soil and Agrochemicals <b>OR</b> (B) Introduction of Forensic Chemistry	Credit-2, 36 L
	<b>SEC IV</b>	Theory	CH-611	(A) Analytical Chemistry-II <b>OR</b> (B) Chemistry of Cosmetics and Perfumes	Credit-2, 36 L

**Important points:**

- i. Each credit is equivalent to 18 lectures of 50 minutes for theory courses and 36 lecture of 50 minutes for practical courses.
- ii. There will be 12 practical sessions per semester of 4 hours 20 minutes each.
- iii. Total weeks for teaching and internal evaluation are 15. Out of the 15 weeks, 12 weeks for teaching and 03 weeks for internal evaluation. (Theory as well as Practical).
- iv. For more details refer to UG rules and regulations (CBCS for Science program under Science & Technology) on SPPU website.

**Evaluation Pattern (As per CBCS rules, SPPU, 2019 Pattern)**

1. Each theory and practical course carry 50 marks equivalent to 2 credits.
2. Each course will be evaluated with Continuous Internal Assessment (CIA) and University Assessment (UEX) mechanism.
3. Continuous internal assessment shall be of 15 marks (30%) while university Evaluation shall be of 35 marks (70%).
4. To pass each course, a student has to secure 40% mark in continuous assessment as well as university assessment i.e. minimum 6 marks in continuous assessment and 14 in university assessment in the respective course.
5. For Continuous internal assessment minimum two tests per paper must be organized, of which one must be written test of 10 marks.
6. Method of assessment for internal exams: written test, MCQ type test, Viva-Voce, Project, survey, field visits, tutorials, assignments, group discussion, etc. (on approval of the head of centre).
7. Theory - University Assessment Question Paper Pattern (According to CBCS - 2019 Pattern of SPPU) Note that in theory question paper weightage will be given to each topics equivalent to number of lectures assigned in the syllabus.

**Preamble:**

The syllabus of Chemistry for third year has been redesigned for **Choice Based Credit System (CBCS: 2019 pattern)** and to be implemented from academic year 2021-22. In CBCS pattern semester system has been adopted for B. Sc. degree programme. Different types of courses are introduced at degree level viz. **Discipline Specific Core Course (DSCC)**, **Ability Enhancement Compulsory Course (AECC)**, **Discipline Specific Elective Course (DSEC)** and **Skill Enhancement Course (SEC)**. DSCC courses has been introduced at FY/SY level and AECC courses at SY level. At TY level DSEC and SEC courses are to be introduced. Third year syllabus comprises of six theory and three practical courses of DSEC type and two theory SEC per semester.

### Equivalence with Previous Syllabus (2013 Pattern)

<b>2013 Pattern</b>	<b>2019 Pattern</b>
<b>Sem-III (T.Y.B.Sc.)</b>	<b>Sem-V (T.Y.B.Sc.)</b>
<b>Core courses</b>	<b>Discipline Specific Elective Courses (DSEC)</b>
CH-331: Physical Chemistry	CH: 501: Physical Chemistry-I
CH-332: Inorganic Chemistry	CH: 504: Inorganic Chemistry-I
CH-333: Organic Chemistry	CH: 507: Organic Chemistry-I
CH-334: Analytical Chemistry	CH: 502: Analytical Chemistry-I
CH-335: Industrial Chemistry	CH: 505: Industrial Chemistry
CH-336: Optional course (Any one) A- Nuclear Chemistry, B- Polymer Chemistry C- Intro. To Biochemistry, D- Env. And Green Chemistry, E- Agriculture Chemistry	CH:508: Chemistry of Biomolecules
----	<b>Skill Enhancement Courses (SEC)</b> CH:510 (A): Introduction of Medicinal Chemistry <b>OR</b> CH:510 (B): Polymer Chemistry
----	CH:511(A): Environmental Chemistry <b>OR</b> CH:511(B): Cheminformatics
<b>Sem-IV (T.Y.B.Sc.)</b>	<b>Sem-VI (T.Y.B.Sc.)</b>
<b>Core courses</b>	<b>Discipline Specific Elective Courses (DSEC)</b>
CH-341: Physical Chemistry	CH: 601: Physical Chemistry-II
CH-342: Inorganic Chemistry	CH: 604: Inorganic Chemistry-II
CH-343: Organic Chemistry	CH: 607: Organic Chemistry-II
CH-344: Analytical Chemistry	CH-602: Physical Chemistry -III
CH-345: Industrial Chemistry	CH: 605: Inorganic Chemistry-III
CH-346: Optional course (Any one) A- Nuclear Chemistry, B- Polymer Chemistry C- Intro. To Biochemistry, D- Env. And Green Chemistry, E- Dairy Chemistry	CH: 608: Organic Chemistry-III
	<b>Skill Enhancement Courses (SEC)</b> CH-610 (A): Chemistry of Soils and Agrochemicals <b>OR</b> CH-610 (B): Introduction of Forensic Chemistry
	CH-611 (A): Analytical Chemistry-II <b>OR</b> CH-611 (B): Chemistry of Cosmetics and Perfumes
CH-347: Physical Chemistry Practical	CH 503 and 603: Physical Chemistry Practical-I and II
CH-348: Inorganic Chemistry Practical	CH 506 and 606: Inorganic Chemistry Practical I and II
CH-349: Organic Chemistry Practical	CH 509 and 609: Organic Chemistry Practical-I and II

**The Detailed Semester and Course Wise Syllabus as follows:****SEMESTER-V****DSEC-I: CH-501: Physical Chemistry- I****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Quantum Chemistry	10
2	Investigation of Molecular structure	16
3	Photochemistry	10
<b>Total</b>		<b>36</b>

**1. Quantum Chemistry****[10 L]**

Introduction, de Broglie hypothesis, The Heisenberg's uncertainty principle, quantisation of energy, Operators, Schrodinger wave equation, well behaved function, Particle in a one-, two and three-dimensional box (no derivation), Physical interpretation of the  $\psi$  and  $\psi^2$ , sketching of wave function and probability densities for 1D box, degeneracy, applications to conjugated systems, zero-point energy and quantum tunnelling, Numerical

**Expected learning Outcome:**

After successfully completion, students will be able to:

1. Know historical of development of quantum mechanics in chemistry.
2. Understand and explain the differences between classical and quantum mechanics.
3. Understand the idea of wave function
4. Understanding of De Broglie hypothesis and the uncertainty principle
5. Understanding the operators: Position, momentum and energy
6. Solving Schrodinger equation for 1D, 2D and 3D model
7. Physical interpretation of the  $\psi$  and  $\psi^2$  and sketching the wave function
8. Applications to conjugated systems, zero-point energy and quantum tunnelling, Numerical Problems

**Reference books:**

- 1) Principles of Physical Chemistry by Puri, Sharma, Pathania,; (Page No: 21-110)
- 2) Essential of Physical Chemistry, Bahl and Tuli (S. Chand).; (Page No: 50-58)

**2. Investigation of Molecular structure****[16 L]**

**Introduction:** Molar refraction and molecular structure, Dipole moment and molecular structure, electromagnetic spectrum, energy of molecules, Types of molecular spectra.

**Microwave Spectroscopy:** Introduction, Classification of molecules on the basis of moment of Inertia, Rotational spectra of rigid diatomic molecules, relative intensities of spectral lines, effect of isotopic substitution on the rotational spectra, Determination of bond length and moment of inertia from rotational spectra, Problems

**Infrared Spectroscopy:** Introduction, Simple Harmonic oscillator, Modes of vibration, force constant, Vibrational spectrum of a diatomic molecule: Vibrational Energy expression, Allowed vibrational energies, zero-point energy, Selection rule, Vibrational energy level diagram with transitions, spectrum depiction, Vibration-rotation Spectra: Born-Oppenheimer approximation, Energy expression for vibrational rotor, Selection rules, Vibrational-rotational energy level diagram with transitions, Nature of vibrational spectra, P, Q and R branches of lines of the IR spectra, Problems

**Raman Spectroscopy:** Introduction, Classical and Quantum theory of Raman effect, Rayleigh, Stokes and anti-stokes lines, Pure rotational Raman spectra of linear diatomic molecules

**Expected learning Outcome:** After studying this chapter, the student will be able to:

1. Understand the term additive and constitutive properties.
2. Understand the term specific volume, molar volume and molar refraction.
3. Understand the meaning of electrical polarization of molecule, induced and orientation polarization.
4. Dipole moment and its experimental determination by temperature variation method.
5. Electromagnetic spectrum, Nature of wave and its characteristics such as wavelength, wave number, frequency and velocity, Energy level diagram,
6. Classification of molecules on the basis of moment of Inertia,
7. Rotational spectra of rigid diatomic molecules, selection rules, nature of spectral lines.
8. Simple Harmonic oscillator model, Born-Oppenheimer approximation. Vibrational spectra of diatomic molecules selection rules, nature of spectral lines.
9. Explain the difference between Rayleigh, Stokes and anti-Stokes lines in a Raman spectrum.
10. Justify the difference in intensity between Stokes and anti-Stokes lines.
11. Draw the Stokes and anti-Stokes lines in a Raman spectrum
12. Raman spectra: Concept of polarizability,
13. Pure rotational Raman spectra of diatomic molecules, Energy Expression, Selection rule, Rotational energy level diagram, Rotational Raman spectrum and Problems

**Reference books:**

1. Fundamentals of molecular spectroscopy by C.N. Banwell and E. M. McCash.

(Page No: 33-59, 60-75, 111-119)

2. Physical Chemistry, Singh, N.B., et al. Volume 2, New Age International Ltd, 2000.

(Page No: 413-455)

### 3. Photochemistry

[10 L]

Introduction, Difference between thermal and photochemical processes, Laws of photochemistry: i) Grothus - Draper law ii) Stark-Einstein law, Quantum yield, Reasons for high and low quantum yield., Factors affecting Quantum yield, Experimental method for the determination of quantum yield, types of photochemical reactions - photosynthesis, photolysis, photocatalysis, photosensitization, Jablonski diagram depicting various processes occurring in the excited state: Qualitative description of fluorescence and phosphorescence, Chemiluminescence, Problems

#### Expected learning Outcome:

After studying this chapter, the student will be able to know and understand:

1. Difference between thermal and photochemical processes.
2. photochemical laws: Grothus - Draper law, Stark-Einstein law,
3. Quantum yield and reasons for high and low quantum yield,
4. factors affecting the quantum yield,
5. Experimental method for the determination of quantum yield
6. Photochemical reactions: photosynthesis, photolysis, photocatalysis, photosensitization
7. Various photochemical phenomena like fluorescence and phosphorescence, Chemiluminescence,
8. Problems

#### Reference books:

1. Essential of Physical Chemistry, Bahl and Tuli (S. Chand).; (Page No: 1154-1178)
2. Principles of Physical Chemistry by Puri, Sharma, Pathania,; (Page No: 1112-1135)
3. Physical Chemistry, Singh, N.B., et al. Volume 2, New Age International Ltd, 2000.  
(Page No: 262-2810)

#### Additional Reference Books:

1. Physical Chemistry by G. M. Barrow, International student Edition, Mc Graw Hill.
2. University General Chemistry by C.N.R. Rao, Macmillan.
3. Physical Chemistry by, R. A. Alberty, Wiley Eastern Ltd.
4. The Elements of Physical Chemistry by P. W. Atkins, Oxford.
5. Principles of Physical Chemistry by S. H. Maron, C. H. Prutton, 4th Edition.
6. Quantum Chemistry by Donald A McQuarrie, Viva Student Edition

7. Quantum Chemistry by I. Levine.
8. Quantum Chemistry by R.K. Prasad

**DSEC-I: CH-502: Analytical Chemistry- I****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Gravimetry	09
2	Inorganic Qualitative Analysis	07
3	Thermal methods of analysis	06
4	Parameters of instrumental analysis	04
5	UV-Visible spectroscopy	10
<b>Total</b>		<b>36</b>

**1. Gravimetry****(9 L)**

Introduction to gravimetric analysis; Precipitation methods; The colloidal state; Supersaturation and precipitate formation; The purity of the precipitate: Co-precipitation; ; Conditions of precipitation; Precipitation from homogeneous solution; Washing the precipitate; Ignition of the precipitate: quantitative separations based upon precipitation methods: Fractional precipitation; Organic precipitants (8-hydroxyquinoline, DMG, Cupferron, Nitron, and Benzoin-alfa oxime, Anthanilic acid), Gravimetric Calculations—How Much Analyte is there (Ref-3)

Applications of Gravimetry: Determination of Al(III) by 8-hydroxyquoline, Determination of calcium as oxalate; Determination of potassium as potassium tetraphenylborate, Determination of phosphate as ammonium molybdophosphate, Numericals,

Key Reference-1: 417-428, 433-444, 446, 451, 464, 485; [Supplementary Ref-2: Pp-342 to 362]

**2. Inorganic Qualitative Analysis****(7 L)**

Basic principle, common ion effect, solubility, solubility product, preparation of original solution, classification of basic radicals in groups, separation of basic radicals, removal of interfering anions (phosphate and borate), detection of acid radicals. Ref-6

**3. Thermal methods of analysis****(6 L)**

General discussion, Thermogravimetry, Experimental factors affecting TG analysis, Instruments for thermogravimetry, Applications: Thermogravimetric analysis of  $\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$ ,  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ , Differential Thermal Analysis: Introduction, instrumentation for DTA and DSC, experimental and instrumental factors, applications: DTA of copper sulphate pentahydrate, Purity of



pharmaceutical by DSC, Key Reference-2: 503-522, [Supplementary reference, Ref-4: 884-890, Ref-1: 428-433]

### 3. Parameters of instrumental analysis (4 L)

Techniques, Methods, Procedures, and Protocols, Selecting an Analytical Method, Accuracy, Precision, Sensitivity, Selectivity, Robustness and Ruggedness, Scale of Operation, equipment, Time, and Cost, Making the Final Choice, Developing the Procedure, Calibration and Standardization, Sampling, Validation, Protocols, Key Reference -5: 35-48

### 4. UV-Visible spectroscopy (10 L)

Introduction, Theory of spectrophotometry and colorimetry-Beer's law, Application of Beer's Law, Spectrophotometry: Wavelength selection by prism and diffraction grating, Radiation source, cells, data presentation, single-beam spectrophotometer, Double-beam spectrophotometers, Choice solvent, general procedure for colorimetric estimation, simultaneous analysis, Applications: Estimation of metal ions from aqueous solution: Boron in steel, Chromium in steel with diphenyl carbazide reagent, ammonia in water, Chloride, Primary amine, Determination of phenol, spectrophotometric titration (example Cu(II) with EDTA), Determination of pKa value of indicator, Determination of composition of metal complexes using Job's method of continuous variation and mole ratio method., Numericals Key Reference-2: 658-717 and Ref-1: 645-725

#### References:

- Ref-1: Vogel's textbook of Inorganic Quantitative Analysis, Jeffery, Basset, Mendham Doney, 5<sup>th</sup> Ed, Longman Scientific Technical, USA (copublished with John Wiley Sons)  
Ref-2: Vogel's textbook of Inorganic Quantitative Analysis, Mendham, Doney Barnes, 6<sup>th</sup> Ed, Pearson education  
Ref-3: Analytical Chemistry by G. D. Christian, et al , Wiley, 6<sup>th</sup> Ed.  
Ref-4: Principles of Instrumental Analysis: Holler, Skoog, Crouch 6<sup>th</sup> Ed. Thomson Publication  
Ref-5: Modern Analytical Chemistry, David Harvey, Mc-Graw Hill Higher education  
Ref-6: Vogel's Qualitative Inorganic Analysis, G. Svehla, Pearson, 7<sup>th</sup> Ed.

**Course outcome:** After completion of the course student should be able to

1. Define basic terms in gravimetry, spectrophotometry, qualitative analysis and parameters in instrumental analysis. Such as: Gravimetry, precipitation, solubility product, ionic product, common ion effect, precipitating agent, washing of ppt., drying and ignition of ppt., linearity range, detection limit, precision, accuracy, Sensitivity, Selectivity, Robustness and Ruggedness, electromagnetic radiations, spectrophotometry, Beers law, absorbance, transmittance, molar absorptivity, monochromator, wavelength of maximum absorbance,

- metal ligand ration, qualitative analysis, group reagent, dry tests, wet test, confirmatory test, precipitation, thermogravimetry, thermogram, percent wt. loss, differential thermal analysis, etc.
2. Identify important parameters in analytical processes or estimations. Example: minimum analyte concentration in particular method, reagent concentration in particular analysis (gravimetry, spectrophotometry, thermogravimetry), reagent for particular analysis, reaction condition to convert analyte into measurable form, drying and ignition temperature for ppt in gravimetry, heating rate thermogravimetry, wavelength in spectrophotometry, group reagent, removal borate and phosphate in qualitative analysis, etc.
  3. Explain different principles involved in the gravimetry, spectrophotometry, parameters in instrumental analysis, qualitative analysis.
  4. Perform quantitative calculations depending upon equations student has studied in the theory. Furthermore, student should able to solve problems on the basis of theory.
  5. Discuss / Describe procedure for different types analyses included in the syllabus.
  6. Select particular method of analysis if analyte sample is given to him.
  7. Differentiate / distinguish / Compare among the different analytical terms, process and analytical methods.
  8. Demonstrate theoretical principles with help of practical.
  9. Design analytical procedure for given sample.
  10. Apply whatever theoretical principles he has studied in theory during practical session in laboratory.

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**DSEC-I: CH-503: Physical Chemistry Practical - I****[Credit -2, 73 L]**

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**Total 12 experiments to be completed.****1. Refractometry: (any two)**

- 1) To determine the specific refractivity's of the given liquids A and B and their mixture and hence determine the percentage composition their mixture C.
- 2) To determine the molecular refractivity of the given liquids A, B, C and D.
- 3) To determine the molar refraction of homologues methyl, ethyl and propyl alcohol and show the constancy contribution to the molar refraction by -CH<sub>2</sub> group.
- 4) Determine the refractive index of a series of salt solutions and determine the concentration of a salt of unknown solution

**2. Spectrophotometry and Colorimetry (any three)**

- 1) To titrate Cu<sup>2+</sup> ions with EDTA photometrically.
- 2) To determine the indicator constant of methyl red indicator

- 3) To estimate of  $\text{Fe}^{3+}$  ions by thiocyanate method.
- 4) Cobalt by using R-nitroso salt method.
- 5) To determine the order of reaction for the oxidation of alcohol by potassium dichromate and potassium permanganate in acidic medium calorimetrically.
- 6) Simultaneous determination of  $\text{Cu}^{2+}$  and  $\text{Ni}^{2+}$  ions by colorimetry/spectrophotometry method

### 3. Conductometry (any four)

- 1) Titration of a mixture of weak acid and strong acid with strong alkali.
- 2) To determine the velocity constant of hydrolysis of ethyl acetate by NaOH solution by conduct metric method.
- 3) To determine the normality of citric acid in given fruit by titrating it against standard NaOH solution by conductometric method.
- 4) To determine  $\lambda_{\infty}$  of strong electrolyte (NaCl or KCl) and to verify Onsager equation.
- 5) To estimate the amount of lead present in given solution of lead nitrate by conductometric titration with sodium sulphate.
- 6) To determine the relative strength of monochloro acetic acid and acetic acid conductometrically

### 4. Viscosity: (any one)

1. To determine the molecular weight of a high polymer by using solutions of different concentrations.
2. Determine the radius of glycerol molecule from viscosity measurement.

### 5. Photofluometry

1. Analysis of Riboflavin from vitamin supplementary capsules / syrup / tablet sample by Photofluometry

### 6. Table work

1. Analysis of the given vibration-rotation spectrum of  $\text{HCl}(\text{g})$

**DSEC-II: CH-504: Inorganic Chemistry - I****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Molecular Orbital Theory of Coordination Compounds	08
2	Inorganic Reaction Mechanism	06
3	Chemistry of transition elements	06
4	Chemistry of f-block elements	08
5	Metals, Semiconductors and Superconductors	08
<b>Total</b>		<b>36</b>

**1. Molecular Orbital Theory of Coordination Compounds****(8L)**

Electro-neutrality principle, multiple bonding ( $d\pi-p\pi$  and  $d\pi-d\pi$ ), Nephelauxetic effect and Nephelauxetic series (Recapulation from VBT and CFT), Need and introduction of MOT, Assumptions, MO treatment to octahedral complexes with sigma bonding, Formation of MO's from metal orbitals and Composite Ligand Orbitals (CLO), MO correlation diagram for octahedral complexes with sigma bonding, effect of  $\pi$  bonding on MO correlation diagram, Charge transfer spectra, Advantages of MOT over VBT and CFT.

**Aims and objective/Learning Outcomes: A student should know:**

- Explain electroneutrality principle and different types of pi bonding.
- Able to explain Nephelauxetic effect towards covalent bonding.
- Explain MOT of Octahedral complexes with sigma bonding.
- Able to explain Charge Transfer Spectra.
- Able to compare the different approaches to bonding in Coordination compounds.

**References:**

- Concise Inorganic Chemistry by J.D. Lee - 4<sup>th</sup> Edition pp226-231
- Physical Inorganic Chemistry A Coordination Chemistry Approach S. F. A. Kettle Springer-Verlag Berlin Heidelberg GmbH, 1996 pp 95-120
- Theoretical Inorganic Chemistry by Day and Selvin (Relevant Pages)

**2. Inorganic Reaction Mechanism****(6L)**

Basic concepts of stability and lability, stability constants, Factors affecting lability, chelate effect. Classification of inorganic reactions, ligand substitution reactions: Intimate and stoichiometric mechanism of ligand substitution. Substitution Reactions in Four Coordinated

square planar complexes: Trans effect and Trans effect series, applications of trans effect, stereochemistry of substitution.

[**Further reading:** Student should also read about the relation between kinetics and mechanism. Reaction mechanisms in complexes with C.N.4, 5 and 6]

**Aims and objective: A student should know:**

- i. To understand about inert and labile complexes and stability of complexes in aqueous solutions
- ii. Classification of reactions of coordination compounds
- iii. The basic mechanisms of ligand substitution reactions.
- iv. Substitution reactions of square planer complexes.
- v. Tran's effect and applications of Trans effect
- vi. Stereochemistry of mechanism
- vii. Gain the knowledge of inorganic reaction mechanisms available in the literature to solve chemical problems.

**References:**

1. Inorganic Chemistry – Principles of Structure and Reactivity, J. E. Huheey, E. A. Keiter & R. L. Keiter, 4<sup>th</sup> Edn. Harper Collins College Publ. New York, Chapt.13, p.537-576, (1993).
2. Martin L. Tobe and John Burgess, Inorganic Reaction Mechanisms, Addison Wesley Longman Inc., 1999.
3. Inorganic Chemistry – D.F. Shriver, P.W. Atkins, C.H. Lamgford – Oxoford, 5<sup>th</sup> Edn., 1994, pp507-517.
4. Inorganic Chemistry - Messler and Tarr - Pearson Publishers pages 412-420, 434-440

### 3. Chemistry of Transition elements

[6L]

Position in periodic table, electronic configuration, trends in properties w.r.t.(a) size of atoms and ions (b) reactivity (c) catalytic activity (d) oxidation state (e) complex formation ability (f) colour (g) magnetic properties (h) non-stoichiometry (i) density, melting & boiling points. [Ref.-1]

**Aims and objective:** A student should know:

1. To know position of d-block elements in periodic table.
2. To know the general electronic configuration & electronic configuration of elements.
3. To know trends in periodic properties of these elements w.r.t. size of atom and ions, reactivity, catalytic activity, oxidation state, complex formation ability, color, magnetic properties, non-stoichiometry, density, melting point, boiling point.

**References:**

1. Concise Inorganic Chemistry by J.D. Lee - 5<sup>th</sup> edition. Pages 859-863, 865-866,

**4. Chemistry of f-block elements****[8L]**

Introduction of f-block elements- on the basis of electronic configurations, occurrence and reactivity, F-block elements as Lanthanide and Actinide series

**I. Lanthanides:**

Position in periodic table, Name and electronic configuration of lanthanides, Oxidation States, atomic and ionic radii, Lanthanide contraction, its causes and consequences on chemistry of Lanthanides and post lanthanide elements, Occurrence and separation: Bulk separation, Individual separation by modern methods *viz.*, Ion exchange and solvent extraction method, applications of lanthanides. [Reference-1]

**II. Actinides:**

Position in periodic table, names and their electronic configurations. IUPAC nomenclature system for super heavy elements, Oxidation States, Occurrence and general methods of preparation of transuranic elements *viz.*, Neutron Bombardment, Accelerated projectile bombardment and Heavy ion bombardment. Nuclear Fuels-Nuclear fission and fusion fuels, comparison between Lanthanides and Actinides. [Reference-1]

**Aims and objective:** A student should know:

1. The meaning of term f-block elements, Inner transition elements, lanthanides, actinides.
2. Electronic configuration of lanthanides and actinides.
3. Oxidation states of lanthanides and actinides and common oxidation states.
4. Separation lanthanides by modern methods.
5. Lanthanide contraction and effects of lanthanide contraction on post-lanthanides.
6. Use of lanthanide elements in different industries.
7. Transuranic elements.
8. Preparation methods of transuranic elements.
9. Nuclear fuels and their applications.
10. Why transuranic elements are called as the synthetic elements?
11. IUPAC nomenclature for super heavy elements with atomic no. 100 onwards.

**References:**

1. Concise Inorganic Chemistry by J.D. Lee - 5<sup>th</sup> Edn. 874 – 875, 879-886, 891-893, 898-900.

**5. Metals, Semiconductors and Superconductors****[8L]**

Introduction, Metallic bonding, Band theory in metals with respect to Na along with n (E) and N(E) diagrams, Electrical conductivity of metals (Na, Mg, Al), Valence electrons and conductivity of metals, Effect of temperature and impurity on electrical conductivity of metals,

Semiconductors, types of Semiconductors: I. Intrinsic II. Extrinsic, effect of temperature and impurity on semiconductivity, n & p type semiconductors ZnO and NiO, Superconductivity: Discovery, property, models, structure and superconductivity, low and high temperature superconductors, applications of superconductors.

**Aims and Objectives: A student should be able –**

1. The meaning of metal & semiconductor.
2. The difference between metal, semiconductor and insulator.
3. Metallic bond on the basis of band theory.
4. The energy band and energy curve.
5. Draw  $n(E)$  &  $N(E)$  curves.
6. Explain the electrical conductivity of metals with respect to valence electrons.
7. Explain the effect of temperature and impurity on conductivity of metals and semiconductors.
8. Intrinsic and extrinsic semiconductor.
9. The term valance band and conduction band.
10. n and p type of semiconductors.
11. Non-stoichiometry and semi conductivity.
12. Insulators on the basis of band theory.
13. The difference between Na, Mg, and Al in terms of valence electrons and conductivity.
14. Meaning of super conductors and their structure. o. Discovery and applications of superconductors.

**References:**

1. Solid State Chemistry: An Introduction, Lesley E. Smart, Elaine A. Moore, 3<sup>rd</sup> Edn. Relevant pages from Chapter 10, pp394-411
2. Solid State Chemistry and its Applications, Anthony R. West, Second Edition, Wiley 2014, PP 359-391
3. Chemistry by Raymond Chang - 5<sup>th</sup> edition (Related Pages)
4. New Guide to Modern Valence Theory by G.I. Brown - 3<sup>rd</sup> edition Pages 209-221

**DSEC-II: CH-505: Industrial Chemistry - I****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Modern Approach to Chemical Industry	06
2	Manufacture of Basic Chemicals	07
3	Sugar and Fermentation Industry	07
4	Soap and Detergents Industry	08
5	Dyes and Pigments	08
<b>Total</b>		<b>36</b>

**1. Modern Approach to Chemical Industry****(6 L)**

Introduction, basic requirements of chemical industries, chemical production, unit process and unit operations, Quality control and quality assurance, process control, research and development, human resource, safety measures, classification of chemical reactions, batch and continuous process, Conversion, selectivity and yield, copy-right act, patent act, trademarks.

Ref. No.-7, Relent pages, Ref. - 10: [www.wikipedia.org/wiki/copyright\\_act\\_of1976/patent act/trademark](http://www.wikipedia.org/wiki/copyright_act_of1976/patent_act/trademark)

**Aims and Learning objectives:** The students are expected to learn;

- i. Importance of chemical industry,
- ii. Meaning of the terms involved,
- iii. Comparison between batch and continuous process,
- iv. Knowledge of various industrial aspects

**2 Manufacture of Basic Chemicals****(7 L)**

a) Ammonia: Manufacture of ammonia by modified Haber-Bosch process, Physico-chemical principles involved and uses of ammonia.

b) Nitric acid: Manufacture of nitric acid by Ostwald's process, Physico-chemical principles involved and uses of nitric acid.

c) Sulphuric acid: Manufacture of sulphuric acid by contact process, Physico-chemical principles involved and uses of sulphuric acid.

Reference No.-1: Page No. 731 to 761, 809 to 844, Reference-3: 1128-1175, 1253-1263

**Aims and Learning objectives:** The students are expected to learn

- i. Concept of basic chemicals,
- ii. Their uses and manufacturing process.
- iii. They should also know the physico-chemical principals involved in manufacturing process



**3. Sugar and Fermentation Industry****(7 L)**

**a. Sugar:** Introduction, manufacture of cane sugar, extraction of juice, purification of juice, sulfitation and carbonation, evaporation, crystallization, separations of crystals, drying refining, grades, recovery of sugar from molasses, by-product of sugar industry,

Reference No.-1: Page No.1208- 1218

**b. Fermentation Industry:** Introduction, importance, conditions favorable for fermentation, Characteristics of enzymes, short account of some fermentation processes, Alcohol beverages, Manufacture of beer, manufacture of spirit, manufacture of wines, manufacture of vinegar, manufacture of power alcohol, ethyl alcohol from molasses.

Reference No.-1: Page No. 1176-1184

**Aims and Learning objectives:** The students are expected to learn

Sugar Industry: The students are expected to learn

- i. Importance of sugar industry,
- ii. Manufacture of direct iii. Consumption (plantation white) sugar with flow diagram.
- iii. Cane juice extraction by various methods,
- iv. Clarification by processes like carbonation, vi. Sulphitation, vii. Phosphatation, etc.
- v. Concentration of juice by using multiple effect evaporator system,
- vi. Crystallization of sucrose by using vacuum pan.

Fermentation Industry- The students are expected to learn

- i. Importance,
- ii. Basic requirement of fermentation process,
- iii. Manufacturing of ethyl alcohol by using molasses and fruit juice.

**4. Soap and detergents****(8 L)**

(a) Soap: Soap and Fatty Acids: Introduction, Chemistry, Manufacturing Technology, Raw Materials, Functional Properties of Soap, Manufacturing Processes, Saponification Reactor, Cooling, Soap Separator, Soap Extraction, Centrifugation, Neutralization, Direct Neutralization, Carbonate Neutralization, Partial Neutralizing with Soda Ash, Carbon Dioxide Separation, Raw Material Dosing, Caustic Soda, Completion of Neutralizing with Caustic Soda, Neutralization Soap Viscosity,

Reference-5: 980-997, Reference-1: 1243 -1250

(b) Detergents: Synthetic Detergents: Introduction, Characteristic Features of Surfactants, Raw Materials for Surfactant Production, intermediates for Surfactant Production, Anionic Surfactants, Non-ionic Surfactants, Amphoteric Surfactants, Cationic Surfactants, Detergent Additives, Production of Synthetic Detergents, and Washing action of soap and detergents.

Reference-5: 1006-1029, Reference-1: 252 – 1279

**Aims and Learning objectives:** The students are expected to learn

- i. Different types of soap products,
- ii. Chemistry of soap.
- iii. Raw materials required for soap manufacture
- iv. Meaning of the term's Surfactants, Types of surfactants
- v. Raw materials for detergents
- vi. Detergent builders, additives
- vi. Washing action of soap and detergents

### 5. Dyes and Pigments

(8 L)

**(a) Dyes:** Introduction, qualities of good dye, Colour constituents (Chromophore, auxochrome), classification of dyes according to their application, Synthesis and uses of following dyes: Nitroso dye-martius yellow, Azo dyes-Methyl orange and aniline yellow, Triphenylmethane dye-Crystal violet, Phthalein dye - Phenolphthalein, Xanthane-Fluorescein, Antha-quinnoe-Alizarin and Indigo dyes - Indigo.

Reference -1: pp 1545-1595

**(b) Pigments:** Introduction, classification and general properties of pigments.

Inorganic pigments:

- i) Zinc oxide pigments (Fundamentals and properties, Raw materials, Direct process (American process), Precipitation process)
- ii) Iron oxide pigments (Fundamentals and properties, Production of iron oxide pigment by precipitation process),

Reference-9: 80-87, 97 to 109.

**Aims and Learning objectives:** The students are expected to learn

Dyes - Students should know about

- i. Dyes: introduction,
- ii. Dye intermediates,
- iii. Structural features of a dye;
- iv. Classification of dyes,
- v. Synthesis, Structures, properties and applications of dyes

Pigments: Students should know about

- i. Introduction,
- ii. Classification and general properties of pigment
- iii. Production processes of zinc oxide and iron oxide

**References:**

1. Industrial Chemistry, B. K. Sharma, Goel publishing House, 18<sup>th</sup> Ed. (2014)
  2. Riegeal's Hand book of industrial chemistry, James A. kent. 9<sup>th</sup> Ed. CBS publishers
  3. Advanced Inorganic Chemistry, Satyaprakash, Tuli, Basu pages 458-463.
  4. Advanced Inorganic Chemistry, Satyaprakash, Tuli, Basu pages 830-849
  5. Handbook of Industrial Chemistry and Biotechnology, James A. Kent, Tilak V. Bommaraju, Scott D. Barnicki, Thirteenth Edition, Springer.
  6. Inorganic Pigments by Gerhard Pfaff, Publisher-De Gruyter, 1<sup>st</sup> Ed.
  7. Shreeve's chemical process industries 5th Edition, G.T. Austin, TATA McGraw-Hill Edition, chemical engineering series
  8. Industrial Chemistry, Part-II, R. K. Das, Kalyani Publisher, Second Ed.
  9. Inorganic Pigments by Gerhard Pfaff, Publisher-De Gruyter, 1<sup>st</sup> Ed.
- [www.wikipedia.org/wiki/copyright\\_act\\_of1976](http://www.wikipedia.org/wiki/copyright_act_of1976) , [www.wikipedia.org/wiki/patentact](http://www.wikipedia.org/wiki/patentact) and [www.wikipedia.org/wiki/trademark](http://www.wikipedia.org/wiki/trademark)

**Industrial visit:**

Visit to any one of the Chemical / Pharmaceutical / Polymer / Research Institutes / Sugar Factories / waste water treatment plant, etc. is essential and a systematic report is to be submitted by the student to the Department of Chemistry.

**DSEC-II: CH-506: Inorganic Chemistry Practical - I [Credit -2, 73 L]****Total 12 experiments to be completed.****A. Gravimetric estimations (Any 3)**

1. Gravimetric estimation of Fe as Fe<sub>2</sub>O<sub>3</sub>. Ref-1: 457
2. Gravimetric estimation of Ba as BaSO<sub>4</sub> using homogeneous precipitation method. Ref-1: 448
3. Gravimetric estimation of Nickel as Ni – DMG. Ref-1: 462
4. Analysis of sodium bicarbonate from mixture by thermal decomposition method. Ref.-6
5. Determination of water of crystallization by thermal decomposition. Reference-5
6. Analysis of Food/Pharmaceutical sample for ash and sulphated ash example-Aspirin, Ref. -2.

**B. Inorganic preparations (Any 3) (Ref-7, 8, 9)**

Preparation of inorganic complexes and spot tests for metal ions and ligands:

1. Preparation of hexamminenickel(II) chloride, [Ni (NH<sub>3</sub>)<sub>6</sub>]Cl<sub>2</sub>.
2. Preparation of Potassium trioxalatoferrate(III), K<sub>3</sub>[Fe(C<sub>2</sub>O<sub>4</sub>)<sub>3</sub>].
3. Preparation of Manganese (III) acetylacetonate, [Mn(acac)<sub>3</sub>].
4. Preparation of tris(glycinato)nickelate(II), [Ni(gly)<sub>3</sub>]
5. Preparation of Potassium dioxalatocuprate(II), [Cu(C<sub>2</sub>O<sub>4</sub>)<sub>2</sub>]<sup>2-</sup>.

**C. Inorganic Qualitative Analysis (6 Expts.)**

1. Inorganic Qualitative analysis (5 mixtures) [1 simple water soluble mixture, 2 mixtures containing borates and 2 mixtures containing phosphates]

(DST manual green chemistry monograph procedure must be followed strictly) Ref.-4

2. Limit test for iron, chloride and sulphate from pharmaceutical raw materials. Ref.-2; pp - 220

OR

2. Qualitative and confirmatory tests of inorganic toxicants of any four ions (Borate, copper, hypochlorite or nitrate or nitrite, Sb or Bi, Iodate,  $H_2O_2$ ). Reference-3

**References:**

1: Vogel's textbook of Inorganic Quantitative Analysis, Jeffery, Basset, Mendham Deney, 5<sup>th</sup> Ed, Longman Scientific Technical, USA (copublished with John Wiley Sons)

2: Indian Pharmacopoeia, Vol-2; 2007

3: Basics of Analytical toxicology, World Health Organization

4: [Green Chem - \[PDF Document\] – FDOCUMENTS; \(https://fdocuments.in/document/green-chem.html\)](https://fdocuments.in/document/green-chem.html)

5: <https://www.studocu.com/ec/document/universidad-de-investigacion-de-tecnologia-experimental-yachay/fisica-matematica/otros/the-gravimetric-analysis-of-barium-chloride-hydrate/8364963/view>

6: [https://effectiveness.lahc.edu/academic\\_affairs/sfcs/chemistry/Shared%20Documents/Decomposing%20Baking%20Soda.pdf](https://effectiveness.lahc.edu/academic_affairs/sfcs/chemistry/Shared%20Documents/Decomposing%20Baking%20Soda.pdf)

7: Experimental Inorganic Chemistry, Mounir A. Malati, Horwood Series in Chemical Science (Horwood Publishing, Chichester) 1999.

8: Experiments in Chemistry, D. V. Jahagirdar, Himalaya Publishing House

9: Journal of chemical education: Synthesis of cis-  $Cu(gly)_2$  Trans-  $Cu(gly)_2$  and cis-ni(gly) $_2H_2O$  and their characterization using thermal and spectroscopic technique – a Capstone laboratory experiment.

**Structure of Practical Examination [35 Marks; Time: 3 hours]**

Q1. Gravimetric estimation/Inorganic preparation/Inorganic Qualitative analysis....	30 M
Q2. Viva-Voce .....	05 M

**DSEC-III: CH-507: Organic Chemistry - I****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Polynuclear and Heteronuclear Aromatic Compounds	08
2	Active Methylene Compounds	05
3	Rearrangement Reactions	12
4	Elimination reactions	11
<b>Total</b>		<b>36</b>

**1. Polynuclear and Heteronuclear Aromatic Compounds [08 L]**

Introduction, Classification of aromatic compounds, Properties of the following compounds with reference to electrophilic and nucleophilic substitution: Naphthalene, Anthracene, Furan, Pyrrole, Thiophene, and Pyridine. Ref.1: Pages 759 – 779. Ref.3: Pages 952 – 962. 2.

**2. Active Methylene Compounds [05 L]**

Definition, Preparation of Ethylacetoacetate and Synthetic uses of ethylacetoacetate Preparation of Diethyl malonate and Synthetic uses of diethyl malonate, (preparation of non-heteromolecules having upto 6 carbon). Ref.1: Pages 864 – 875. Ref.3: Pages 859 – 874. Ref.6: Pp 206 – 213.

**3. Rearrangement Reactions [12 L]**

Introduction, Types of rearrangement, Types of reactive intermediate involved in different rearrangements, Rearrangement – Beckmann, Baeyer-Villiger, Favorskii, Curtius, Lossen, Schmidt and Pinacol-Pinacolone with mechanism. Electrocyclic Rearrangements- Claisen, Cope and Mc-Lafferty rearrangements with mechanism. Ref.4: Pages 618-656. Ref.7: Pages 89-94, 105-107, 112-114, 122-125, 158-161. Ref.10: Pages 130-132.

**4. Elimination reactions [11 L]**

Introduction; Types of eliminations-1,1; 1,2 elimination, Mechanism with evidences of E1 and E2, E1cB reactions, stereochemistry of E1 and E2 elimination, Orientations and reactivity in E1 and E2 elimination- Hoffmann and Saytzeff's orientation, Factors affecting the reactivity- effect of structure, attacking base and leaving groups. Ref.1: Pages 305-326. Ref. 3: Pages 260-265. Ref.4: Pages 472-496. Ref.6: Pages 188-194.

**References**

- 1) R.T. Morrison & R.N. Boyd: Organic Chemistry, 7th edition, Prentice Hall.
- 2) Organic Chemistry: Clayden, Greeves, Wothers, Warren, Oxford Press.
- 3) Organic Chemistry: Graham Solomans
- 4) E. S. Gould: Mechanism and Structure in Organic Chemistry

- 5) Peter Sykes: A Guide Book to Mechanism in Organic Chemistry, Orient Longman
- 6) I.L. Finar: Organic Chemistry (Vol. I & II), E.L.B.S.
- 7) S. N. Sanyal: Reactions, Rearrangements and Reagents
- 8) Eliel: Stereochemistry of Organic Compounds, Tata Mc Graw Hill, 1989
- 9) D. Nasipuri: Stereochemistry of Organic Compounds- Principles and Applications, New Age International Publishers, 3rd edition.
- 10) Jagdamba Singh, Jaya Singh: Photochemistry and Pericyclic reactions.3rd edition

### Learning Outcomes

Chapter 1 Polynuclear and Heteronuclear Aromatic Compounds: After studying the polynuclear and heteronuclear aromatic compounds, students will be able to

1. Define and classify polynuclear and heteronuclear aromatic hydrocarbons.
2. Write the structure, synthesis of polynuclear and heteronuclear aromatic hydrocarbons.
3. Understand the reactions and mechanisms
4. Explain the reactivity of polynuclear and heteronuclear aromatic hydrocarbons.
5. Describe the synthesis of chemical reactions of polynuclear and heteronuclear aromatic Hydrocarbons.

Chapter 2 Active Methylene Compounds : Students should be able to understand

1. Meaning of active methylene group
2. Reactivity of methylene group,
3. Synthetic applications ethyl acetoacetate and malonic ester
4. To predict product with panning or supply the reagent/s for these reactions

Chapter 3 Molecular Rearrangements Students will study

1. What is rearrangement reaction?
2. Different types of intermediate in rearrangement reactions?
3. To write the mechanism of some named rearrangement reactions and their applications 4.

Electrocyclic rearrangement with their mechanisms Chapter

Chapter 4 Elimination Reactions: Students should be familiar with

1. 1,1 and 1,2 elimination
2. E1, E2 and E1cB mechanism with evidences of these reactions 4
3. Understand stereochemistry by using models and learn reactivity of geometrical isomers
4. Orientation and reactivity in E1 and E2 elimination
5. Hoffmann and Saytzeff's Orientation
6. Effect of factors on the rate elimination reactions

**DSEC-III: CH-508: Chemistry of Biomolecules****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Introduction to molecular logic of life	03
2	Carbohydrates	07
3	Lipids	06
4	Amino acids and Proteins	08
5	Enzymes	06
6	Hormones	06
<b>Total</b>		<b>36</b>

**1. Introduction to molecular logic of life.****(3L)**

Unicellular and multicellular organisms, prokaryotes and eukaryotes. List of cell organelles and its functions. Molecules that constitute the organisation of cell and its organelles. types of bonds in biomolecules

**2. Carbohydrates****(7L)**

Introduction, classification of carbohydrates, their structures and biological significance. Concept of anomers, epimers, reducing and non-reducing sugars, mutarotation, inversion. Reactions of glucose with acid, base, phenyl hydrazine, oxidizing agents, reducing agents and its significance, Glycosidic bonds.

**3. Lipids****(6L)**

Introduction, classification of lipids, their structures and biological significance. Reactions of Lipids-Saponification Hydrolysis, emulsification, oxidation. Concept of saponification number, acid number, iodine number and their significance. Rancidity. Types of Lipoproteins and their significance. Blood group substances.

**4. Amino acids and Proteins****(8L)**

**Amino acids:** classification of amino acids. Concept of ampholytes, isoelectric pH, zwitter ions, titration curve of glycine. Reactions of amino acid with Ninhydrin, Sanger's, Dansyl chloride, Dabsyl chloride and Edmann's reagents and their significance. Peptide bond and its features.

**Proteins:** Classification based on function, nutrition and composition. Structural organization of proteins- primary, secondary, tertiary and quaternary structures.

**5. Enzymes****(6L)**

Classification of enzymes. Features of active site. ES complex formation, Enzyme specificity, Factors affecting enzyme activity. Basics of Enzyme kinetics. MM and LB equation and

Significance of  $K_m$ . Types of Enzyme inhibitions. Concept of Conjugated enzymes- Holoenzyme, Apoenzyme, prosthetic groups. Coenzymes of vitamins. Industrial applications of enzymes.

### 6. Hormones

(6L)

Introduction to endocrine glands and their hormones. Biochemical nature of hormones, Mechanism of action of lipophilic and hydrophilic hormones.

### References

1. Lehninger's Principles of Biochemistry, by Nelson and Cox Macmillan Publisher 4<sup>th</sup> Edn.
2. Biochemistry by U. Satyanarayana
3. Harper's Illustrated Biochemistry, 26<sup>th</sup> Edition
4. Biophysical techniques by Upadhyay and Nath, 3<sup>rd</sup> revised edition.
5. Organic Chemistry, Morrison, R. T. & Boyd, R. N.
6. Organic Chemistry (Volume 1) Finar, I. L.
7. Organic Chemistry (Volume 2) Finar, I. L.

### Learning Outcome:

1. **Introduction to molecular logic of life.** The student will understanding of Cell types, Difference between a bacterial cell, Plant cell and animal cell. Biological composition and organization of cell membrane, structure and function of various cell organelles of plant and animal cell. Concepts of biomolecules, Bonds that link monomeric units to form macromolecules
2. **Carbohydrates:** The student will understand the types of carbohydrates and their biochemical significance in living organisms, structure of carbohydrates and reactions of carbohydrates with Glucose as example. Properties of carbohydrates.
3. **Lipids:** The student needs to know the types of lipids with examples, structure of lipids, properties of lipids
4. **Amino acids and proteins:** The student will understand the structure and types of amino acids. Reactions of amino acids. Properties of amino acids. Peptide bond formation. Types of proteins. Structural features in proteins. Effect of pH on structure of amino acid, Determination of N and C terminus of peptide chain.
5. **Enzymes:** The student know the classes of enzymes with subclasses and examples. Enzyme specificity, Equations of enzyme kinetics  $K_m$  and its significance, features of various types of enzyme inhibitions, industrial applications of enzymes.



6. **Hormones:** Basic concepts of Endocrinology. Types of Endocrine glands and their hormones. Biochemical nature of hormones. Mechanism of action of lipophilic and hydrophilic hormones.

**DSEC-III: CH-509: Organic Chemistry Practical-I [Credit -2, 73 L]****Total 12 Experiments to be performed****A) Separation of Binary Mixtures and Qualitative Analysis (Any Six)**

a) Solid-Solid (3 Mixtures) b) Solid-Liquid (2 Mixtures) c) Liquid-Liquid (1 Mixture) At least one mixture from each of the following should be given-Acid-Base, Acid- Phenol, AcidNeutral, Phenol-Base, Phenol-Neutral, Base-Neutral and Neutral- Neutral. (Solid-solid mixtures must be insoluble in water)

**B) Preparations****a) Green Chemistry Preparations (Any Two)**

1. Preparation of dibenzalpropanone from benzaldehyde and acetone using LiOH.H<sub>2</sub>O/NaOH
2. Nitration of phenol or substituted phenols using CaNO<sub>3</sub>.
3. Bromination of acetamide using ferric ammonium nitrate and KBr in aqueous medium.

**b) Organic Preparations (Any Two)**

1. Preparation of 1, 4- dihydropyrimidinone from ethyl acetoacetate, benzaldehyde and urea using oxalic acid as catalyst.
2. Preparation p-Iodonitrobenzene from p-Nitroaniline by Sandmeyer Reaction
3. Preparation P-chloro benzoic acid and p-chloro benzyl alcohol from p-chloro benzaldehyde.

**C) Preparations of Organic Derivative (Any Two)**

1. Amide derivative of Carboxylic acid
2. Glucosazone derivative of Glucose
3. Paracetamol from p-Aminophenol

**Imp. Note:** At the time of practical examination candidate should perform complete analysis of one binary mixture OR One preparation and one preparation of organic derivative.

- To develop skills required in chemistry such as the appropriate handling of apparatus and chemicals.
- The student will learn the laboratory skills needed to design, safely conduct and interpret chemical research.
- To expose the students to an extent of experimental techniques using modern instrumentation.
- The student will develop the ability to effectively communicate scientific information and research results in written and oral formats.

**Learning Outcomes:****A) Separation of Binary Mixtures and Qualitative Analysis The students will be able to**

1. Perform the quantitative chemical analysis of binary mixture, explain principles behind it.
2. Separate, purify and analyse binary water insoluble mixture.
3. Separate, purify and analyse binary water-soluble mixture.
4. Understand the techniques involving drying and recrystallization by various method.
5. Familiarize the test involving identification of special elements.
6. Learn the confirmatory test for various functional groups.

**B) Preparations The students will be able to**

1. Systematic working skill in laboratory will be imparted in student.
2. Learn the basic principles of green and sustainable chemistry.
3. Synthesis of various organic compounds through greener approach.
4. Do and understand stoichiometric calculations and relate them to green process metrics.
5. Learn alternative solvent media and energy sources for chemical processes.
6. Learn the preparations of derivative various functional groups aspects of electrical experiments.
7. Understand the techniques involving drying and recrystallization by various method
8. Expertise the various techniques of preparation and analysis of organic substances
9. Understand principle of Thin Layer Chromatographic techniques.
10. Understand the purification technique used in organic chemistry.

**SEC-I: CH-510: Skills Enhancing Course-I****[Credit -2, 36 L]****Choose one out of the two options, A and B.****CH-510 (A) : Introduction to Medicinal Chemistry**

Chapter No.	Title	Number of Lectures
1	An Introduction to Drugs, their Action and Immunobiologicals	08
2	Bio-physicochemical Properties in Drug Action and Design	08
3	Drugs for Infectious Diseases	12
4	Drugs for Non -infectious Diseases	08
<b>Total</b>		<b>36</b>

**1. An Introduction to Drugs, their Action and Immunobiologicals (8L)**

A. Introduction, Need of new drugs, Historical background of drug discovery and design, Sources of drugs, Classification of drugs, Introduction to drug action

(Ref.1 Pages 37-53, Ref.2 Pages 4-11, Ref.4 Pages 4-9)

**B. Immunobiologicals:** Vaccines: Introduction, Methods of vaccine production: Inactivated pathogens, Live/Attenuated Pathogens and Cellular Antigen from a pathogen, SARS-CoV-19

(Ref.3 Pages 165-168, Ref.9, Ref.10)

## 2. Bio-physicochemical Properties in Drug Action and Design (8L)

Introduction, Acidity/Basicity, Solubility, Ionization, Hydrophobic and hydrophilic properties, Lipinski Rule, **Terminology in Medicinal Chemistry:** Pharmacology, Pharmacophore, Pharmacodynamics, Pharmacokinetics, metabolites, antimetabolites and therapeutic index. Importance of stereochemistry in drug action (Example: Ibuprofen), Concept of rational drug design: Structure activity relationship, Drug-receptor understanding

(Ref.1 Pages 57-75, 95-96 Ref.2 Pages 189-274, 384-392, Ref.4 Pages 29-61)

## 3. Drugs for Infectious Diseases (12L)

Introduction, Structures, Mode of Action and Applications:

**A. Antimicrobial Agents:** Classification on i) Type of action: Bacteriostatic and Bactericidal ii) Source (Natural, Synthetic and Semisynthetic) iii) Spectrum of activity: Narrow and Broad Spectrum iv) Chemical structure:  $\beta$ -lactams (Penicillin), Macrolides (Azithromycin), Sulphonamides (Sulfadiazine), and Tetracyclins (Chlortetracycline)

**B. Anti-fungal and anti-viral agents:** Example: Amphotericin-B, Acyclovir

(Ref.1 Pages 131-157, Ref.2 Pages 413-472, Ref.3 Pages 258-308, Ref.4 Pages 191-228)

## 4. Drugs for Non-infectious diseases (8L)

Introduction, Structures, Mode of Action, and Applications:

**A. i) Anti-inflammatory and Analgesic Agents:** Example: Aspirin, Paracetamol, and Ibuprofen, **ii) Psychoactive Agents:** Sedatives and Hypnotics: Example: Benzodiazepines,

**B. Metallodrugs as Chemotherapeutic Agents:** Examples: Aluminium based antacids, Salvarsan, Cis Platin, and Transition Metal Complexes

(Ref.3 Pp 443-457, 509-515, 637-647, 776-792, Ref. 5, Ref.6, Ref.7, Ref. 8 Pp.69-70, 481-491)

### References:

1. Fundamentals of Medicinal Chemistry by Gareth Thomas, University of Portsmouth, UK.
2. An Introduction to Medicinal Chemistry, Patrick, G. Oxford. University Press (Vth Edition).
3. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical, Charles Owens Wilson, John H. Block, Ole Gisvold, John Marlowe Beale.
4. Foye's Principles of Medicinal Chemistry by David A. Williams, Thomas L. Lemke, William O. Foye (VIIth Edition), Kluwer publication.

5. Medicinal chemistry, fourth edition, Ashutosh Kar (2007).
6. Metallo drugs in Medicinal Inorganic Chemistry Katja Dralle Mjos and Chris Orvig, Chem. Rev. 2014, 114, 4540-4563, <http://dx.doi.org/10.1021/cr400460s>
7. Metallo drugs are unique: opportunities and challenges of discovery and development, E. J. Anthony et.al. Chem. Sci., 2020, 11, 12888, <http://dx.doi.org/10.1039/d0sc04082g>.
8. Metallo-therapeutic Drugs And Metal-Based Diagnostic Agents by Marcel Gielen and Edward R.T. Tiekink
9. Research and Development on Therapeutic Agents and Vaccines for COVID-19 and Related Human Coronavirus Diseases, Cynthia Liu et al., ACS Cent. Sci. 2020, 6, 315–331, <http://dx.doi.org/10.1021/acscentsci.0c00272>
10. A comprehensive overview of vaccines developed for pandemic viral pathogens over the past two decades including those in clinical trials for the current novel SARS-CoV-2, Kannan Damodharan et al., RSC Adv., 2021, 11, 20006–20035, <http://dx.doi.org/10.1039/d0ra09668g>

**Learning Outcomes:**

Upon completion of the course the student shall be able to understand,

1. The basics of medicinal chemistry, biophysical properties, overview of basic concepts of traditional systems of medicine.
2. Over view of the overall process of drug discovery, and the role played by medicinal chemistry in this process.
3. Biological activity parameters and importance of stereochemistry of drugs and receptors.
4. Knowledge of mechanism of action of drugs belonging to the classes of infectious and non-infectious diseases.
5. Enhancement of practical skills in synthesis, purification and analysis.

**Additional Study Material: NPTEL Video lecture on Medicinal Chemistry:**

1. <https://youtu.be/UHEXXGiegd0> ;
2. [https://youtu.be/rVN\\_HybZ-Vk](https://youtu.be/rVN_HybZ-Vk)
3. <https://youtu.be/-fCXLW-jF2o>
4. <https://youtu.be/n5C-peu54Wk>
5. <https://youtu.be/0wx4hep1low>
6. <https://youtu.be/9IWrrNuUzP4A>
7. <https://youtu.be/84-q3SAVEQk>

**CH-510 (B) : Polymer Chemistry**

Chapter No	Topic	Number of lectures
1	Introduction and history of polymeric materials	6
2	Polymerization Chemistry	12
3	Molecular weight of Polymers	6
4	Important Polymers	12
<b>Total</b>		<b>36</b>

**1. Introduction and history of polymeric materials: (6 L)**

Brief history, Basic terms- monomer, polymer, polymerisation, degree of polymerisation, functionality. Different schemes of classification of polymers, polymer nomenclature, molecular forces and chemical bonding in polymers, glass transition temperature of polymer.

Ref. 1: Pages 1-20, 150

Ref. 2: Pages 1-16

Ref. 5, 7 & 8 Relevant Pages

**2. Polymerization Chemistry (12 L)**

Classification of polymerization processes, mechanism of- step growth, radical chain growth, ionic chain (both cationic and anionic) and coordination polymerizations. Polymerization techniques-bulk, solution, suspension, emulsion and interfacial condensation.

Ref. 1: Pages 20-58, 71-79

Ref. 2: Pages 25-32, 49-56, 82-86, 88-94, 126-132

Ref. 3 & 4 Relevant Pages

**3. Molecular weight of Polymers (6 L)**

Average molecular weight of polymer, Number average molecular weight ( $M_n$ ), Weight average molecular weight ( $M_w$ ), Number average molecular weight by end group analysis, Viscosity average molecular weight by viscometric method, Molecular weight distribution and its significance, polydispersity index.

Ref. 1: Pages 86-98, 402-409

Ref. 2 & 4: Relevant Pages

**4. Important Polymers: (12 L)**

Brief introduction to preparation, structure, properties and application of the following polymers: polyethylene, polystyrene, polyvinyl chloride, polyvinyl alcohol, polymethyl methacrylate, polytetrafluoroethylene, polyamides, polyesters, phenol formaldehyde resins (Bakelite, Novolac), silicone polymers, polyisoprene, conducting Polymers.

Ref. 1: Pages 215-255

Ref. 3, 4 & 6 Relevant Pages

**Course Outcome:** The students are expected to learn the following aspects of Polymer Chemistry:

- 1) History of polymers.
- 2) Difference between simple compounds and polymer.
- 3) Names of polymers.
- 4) Various ways of nomenclature.
- 5) Difference between natural, synthetic, organic and inorganic polymers.
- 6) Terms-Monomer, Polymer, Polymerization, Degree of polymerization, Functionality, Number average, Weight average molecular weight.
- 7) Mechanisms of polymerization.
- 8) Polymerization techniques.
- 9) Uses & properties of polymers.
- 10) Role of polymer industry in the economy.
- 11) Advantages of polymers.

**Reference Books:**

1. Polymer Science by V.R. Gowarikar, N.V. Vishvanathan, Jaydev Shreedhar New Age International Ltd. Publisher 1996. (Reprint 2012)
2. Textbook of Polymer Science by Fred Billmeyer, 3<sup>rd</sup> Edn. A Wiley-Interscience Publication John Wiley & Sons New York 1984. (Reprint 2008)
3. Introductory Polymer Chemistry by G.S. Misra New Age International (P) Ltd. Publisher 1996.
4. Polymer Chemistry by Charles E. Carraher (Jr.), 6<sup>th</sup> Edn, (First Indian Print 2005), New York- Basel.
5. Principle of Polymer Science by P. Bahadur, N.V. Sastry, 2<sup>nd</sup> Edn, Narosa Publishing House.
6. Polymer Chemistry by Ayodhya Singh, 2008, Published by Campus Book International, New Delhi.
7. Organic Polymer Chemistry by Jagdamba Singh, R.C. Dubey, 4<sup>th</sup> Edn, 2012.
8. Principles of Polymerisation by George Odian 3<sup>rd</sup> Edn. John Wiley & Sons New York.

**SEC-II: CH-511: Skills Enhancing Course-II****[Credit -2, 36 L]****Choose one out of the two options, A and B.****CH-511 (A) : Environmental Chemistry**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Concepts and Scope of Environmental Chemistry	06
2	Hydrosphere and Water Pollution	10
3	Analytical Techniques in water Analysis	10
4	Water pollution and treatment methods	10
<b>Total</b>		<b>36</b>

**1: Concepts and Scope of Environmental Chemistry (06L)**

Introduction, Environmental Pollution and Classification, Units of concentration, Segments of Environment, Biogeochemical cycles of C, N, P, S and O system

Reference: 1, 2, 3

**Aims and objectives:** -Students should know:

- i. Importance and conservation of environment.
- ii. Importance of biogeochemical cycles

**2: Hydrosphere and Water Pollution (10L)**

Water resources, Hydrological Cycle: stages of hydrological cycle and chemical composition of water bodies, Microbially mediated aquatic reactions, Classification of water pollutants

Organic and Inorganic pollutants, Sewage and Domestic waste, Sediments, Detergents, Pesticides, Eutrophication, Sampling and monitoring water quality parameters: pH, D.O. (Winkler Method), COD, TOC, Total hardness, free chlorine.

Reference: 1 Page no -47-62,

**Aims and Objectives:-** Students should know:

- i. Water resources
- ii. Hydrological Cycle
- iii. Organic and inorganic pollutants
- iv. Water quality parameters

**3. Analytical Techniques in water Analysis (10 L)**

Water quality parameters and standards, domestic water quality parameters, surface water, sampling, preservation, Monitoring techniques and methodology (pH, conductance, DO, ammonia, nitrate and nitrite, Cl, F, CN, Sulfide, sulphate, phosphate, total hardness, boron, metals and metalloids- As, Cd,

Cr, Cu, Fe, Pb, Mn, Hg (Exclude polarographic and AAS methods), COD, BOD, TOC, phenols, pesticides, surfactants, tannin and lignins, E. Coli, Case studies of water pollution.

Ref-1: 225-278

#### 4. Water pollution and treatment methods (10 L)

Water pollutants, Eutrophication, Waste water treatment (domestic waste water, aerobic treatment, anaerobic treatment, upflow aerobic sludge bed, industrial waste water treatment, drinking water supplies, Trace elements in water, chemical speciation (Cu, Pb, Hg, As, Se, Cr)

Ref-1: 167-225

**Reference-1:** Environmental Chemistry – A. K. De, Third Edition (Wiley)

#### Additional References:

1. Environmental Chemistry – A. K. De, 5th Edition (New age international publishers)
2. Environmental Chemistry – A. K. Bhagi and C. R. Chatwal (Himalaya Publishing House)
3. Environmental Chemistry – H. Kaur 2nd Edition 2007, Pragati Prakashan, Meerut, India
4. Environmental Chemistry – J. W. Moore and E. A. Moore (Academic Press, New York)
5. Basic Concepts of Analytical Chemistry: S. M. Khopkar, Wiley Eastern (1995)

### CH-511 (B) : Cheminformatics

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Introduction to Cheminformatics	02
2	Representation of Molecules and Chemical Reactions	10
3	Searching Chemical Structures	06
4	Applications of Cheminformatics	18
<b>Total</b>		<b>36</b>

#### 1. Introduction to Cheminformatics [02L]

- 1.1. History and progression of cheminformatics
- 1.2. Significance of cheminformatics
- 1.3. Prospects of cheminformatics and Molecular Modelling

#### Learning Outcomes:

1. Students should understand the significance of cheminformatics in the modern practices of chemical science
2. Students should learn the necessity of cheminformatics in chemical science

**Ref. 2. (Page no. 4-11 and relevant pages)**

#### 2. Representation of Molecules and Chemical Reactions: [10L]

- 2.1. Nomenclature



- 2.2. Different types of notations
- 2.3. Canonical representation of chemical structure, SMILES notation
- 2.4. 2D representation of chemical structure; Graph Theory, Connection tables and linear notations, Matrix representations
- 2.5. 3D chemical structure representation and molecular structure file formats; Molfiles, Sdfiles and Pdbfiles
- 2.6. 3D molecular structure visualization
- 2.7. Chemical Libraries (Pubchem, ChEMBL, DrugBank and Zinc) and online Available cheminformatics toolkits
- 2.8. Molecular properties calculations; electronic effects, Reaction classification

**Learning Outcomes:**

1. Students should learn the basic concepts about these representation methods.
2. Students should understand the significance of different representation methods for their specific applications.
3. Students should be able to identify these representation methods with understanding.
4. Students should be able to read these representation methods for basic examples.

Ref. 1. (Page no. 1-74, 183-201 and relevant pages)

Ref. 2. (Page no. 15-51, 92-96, 169-197 and relevant pages)

**3. Searching Chemical Structures:****[06L]**

- 3.1. Basic ideas about the Full structure search, Sub-structure search
- 3.2. Basics of similarity and diversity search; Tanimoto, Dice, Cosine coefficient and Euclidean distance
- 3.3. Basics of three dimensional search methods
- 3.4. Basics of computation of physical and chemical data and structure descriptors.

**Learning Outcomes:**

1. Students should learn the basic concepts of referencing
2. Students should understand the significance of structural data in the process of referencing
3. Students should be able to correlate the necessity of input methods and the expected outcomes for the set of chemicals
4. Students should be able to understand data interpretation using these methods for basic or representative molecules.

Ref. 1. (Page no. 141-158 and relevant pages)

Ref. 2. (Page no. 291-313, 320-431 and relevant pages)

Ref. 3. (Page no. 39-50, 317-371 and relevant pages)

**4: Applications of Cheminformatics:**

**[18 L]**

4.1. Prediction of Properties of Compounds: Linear Free Energy Relations; Quantitative Structure-Property Relations; Descriptor Analysis; Model Building; Modeling Toxicity

4.2. Predictive Methods for Organic Spectral Data Simulation: Spectra prediction methods and tools, open source and propriety tools, spectra viewer programs, Structure-Spectra correlations

4.3. Introduction to computer aided drug design: Computer Assisted Synthesis Design; Target Identification and Validation; Lead Finding and Optimization; Combinatorial library design, Virtual screening, Molecular docking and Molecular Dynamics simulation. Pharmacophore modeling; Ligand-Based and Structure Based virtual screening, Drug likeness properties, Protein Ligand Interaction Profile (PLIP) analysis and its application in drug discovery process

4.4. Machine Learning Methods in Cheminformatics

4.5. Introduction to Cheminformatics Softwares: Basic operational principle and applications of MarvinSketch, Discovery Studio, Gaussian, GOLD, Schrodinger, Expert protein Analysis System (Expasy) online server

**Learning Outcomes:**

1. Students should learn the basic idea about how to apply cheminformatics tool for variety of applications.
2. Students should understand the significance of database for the specific purpose of application.
3. Students should able to correlate the content of data with the possible applications for the set of chemicals.
4. Students should get aware with the principle and the basic operational methods of well-practiced software used in the data interpretation in cheminformatics.
5. Students should learn the basic concepts of Machine Learning and Artificial intelligence

Ref. 1. (Page no. 75-97 and relevant pages)

Ref. 2. (Page no. 487-542, 567-616 and relevant pages)

Ref. 3. (Page no. 10-15, 93-129, 133-192, 375-406 and relevant pages)

**Reference Books:**

1. Andrew R. Leach and Valerie, J. Gillette (2007) An introduction to Chemoinformatics. Springer: The Netherlands.
2. Gasteiger, J. and Engel, T. (2003) Chemoinformatics: A text-book. Wiley-VCH.
3. Muthukumarasamy Karthikeyan and Renu Vyas (2014) Practical Chemoinformatics, Springer

## Semester-VI

DSEC-IV: CH-601 : Physical Chemistry-II

[Credit -2, 36 L]

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Electrochemical Cells	16
2	Crystal structure	10
3	Nuclear Chemistry	10
<b>Total</b>		<b>36</b>

**1. Electrochemical Cells****[16 L]**

Electrochemical cells, reversible and irreversible cells with examples, The e.m.f. of electrochemical cell and its measurement, The Weston standard cell, Reference electrodes: The primary reference electrode and Secondary reference electrodes, The Nernst equation for E.M.F. of a cell. Types of reversible electrodes, the sign convention for electrode potentials, Thermodynamics of reversible cells and reversible electrodes, E.M.F. and equilibrium constant of cell reaction, Electrochemical series, Types of concentration cells, liquid junction potential, salt bridge, Applications of emf measurements: 1. Determination of pH of a solution by using hydrogen electrode, quinhydrone electrode and glass electrodes 2. Potentiometric titrations: i) Acid-base titrations, (ii) Redox titrations. (iii) Precipitation titration, Batteries: Primary and Secondary batteries, applications for Secondary Batteries, Fuel Cells: Types of fuel cells, advantages, disadvantages of fuels cells, comparison of battery Vs fuel cell

**Expected learning Outcomes:**

After studying this chapter, the student will be able to know and understand:

1. Electrochemical cells: Explanation of Daniell cell, Conventions to represent electrochemical cells
2. Thermodynamic conditions of reversible cell, Explanations of reversible and irreversible electrochemical cell with suitable example,
3. EMF of electrochemical cell and its measurement.
4. The Weston standard cell
5. The primary reference electrode: The standard hydrogen electrode (SHE) with reference to diagram, Construction, representation, working and limitation,
6. Secondary reference electrodes: (a) The calomel electrode, (b) The glass electrode (c) The silver-silver chloride electrode. Understanding of these electrodes with reference to diagram, representation, Construction, working

7. Nernst Equation for theoretical determination of EMF
8. Types of Reversible electrodes: Metal-metal ion electrodes, Amalgam electrodes, Gas electrodes, Metal-metal insoluble salt electrodes, Oxidation-reduction electrodes with respect to examples, diagram, representation, construction, working (electrode reactions) and electrode potential.
9. Sign convention for electrode potentials and Electrochemical series
10. Standard electrode potentials,
11. Types of concentration cells: Concentration cells without and with transference  
Concentration cells with liquid junction potential
12. Liquid junction potential and salt bridge
13. Applications of emf measurements: 1. Determination of pH of a solution by using hydrogen electrode, quinhydrone electrode and glass electrodes 2. Potentiometric titrations: i) Acid-base titrations, (ii) Redox titrations and (iii) Precipitation
14. Primary Batteries: Dry Cells, alkaline batteries with respect to construction, diagram and working
15. Secondary Batteries: Nickel-cadmium, Lithium-ion batteries, the lead acid battery with respect to construction, diagram and working
16. Applications for Secondary Batteries
17. Fuel Cells: Types of fuel cells, advantages, disadvantages of these fuels cells, comparison of battery Vs fuel cell
18. Problems

**Reference books:**

1. Essential of Physical Chemistry, Bahl and Tuli (S. Chand)., (Page No: 1154-1178)
2. Principles of Physical Chemistry by Puri, Sharma, Pathania, (Page No: 835-880)
3. Physical Chemistry, Singh, N.B., et al. Volume 2, New Age International Ltd, 2000, (Page No: 320-412)
- 4) Modern Electrochemistry Second Edition by John O'M Bockris, Molecular Green Technology College Station, Texas and Amulya K. N. Reddy, President International Energy Initiative Bangalore, India, (Page No: 1789-1888)

**2. Crystal structure****[10 L]**

Types of Solids: Isotropy and Anisotropy, Laws of crystallography: Law of constancy of interfacial angles, Law of rational indices, Law of crystal symmetry, Weiss indices and Miller indices, Crystal Structure: Parameters of the Unit Cells, Cubic Unit Cells: Three Types of Cubic Unit Cells, Calculation of Mass of the Unit Cell, Methods of Crystal structure analysis: The

Laue method and Braggs method: Derivation of Bragg's equation, Determination of crystal structure of NaCl by Bragg's method, X ray analysis of NaCl crystal system, Calculation of  $d$  and  $\lambda$  for a crystal system, Numerical.

**Expected learning Outcomes:**

After studying this topic students are expected to know and understand:

1. Distinguish between crystalline and amorphous solids / anisotropic and isotropic solids.
2. Explain the term crystallography and laws of crystallography.
3. Weiss and Millers Indices, determination of Miller Indices
4. Bravais lattices, space groups, seven crystal systems and fourteen Bravais lattices;
5. Cubic lattice and types of cubic lattice
6. Distance between the planes for 100, 110 and 111 for cubic lattice
7. Methods of Crystal structure analysis: The Laue method and Braggs method: Derivation of Bragg's equation,
8. Determination of crystal structure of NaCl by Bragg's method,
9. X ray analysis of NaCl crystal system and Calculation of  $d$  and  $\lambda$  for a crystal system,
10. Problems

**Reference books:**

1. Essential of Physical Chemistry, Bahl and Tuli (S. Chand), (Pp: 491-507, 518-528)
2. Principles of Physical Chemistry by Puri, Sharma, Pathania, (Page No: 1165-1180)

**3. Nuclear Chemistry****[10L]**

Radioactivity, Types of Radiations, Properties of Radiations, Detection and Measurement of Radioactivity: Cloud chamber, Ionization Chamber, Geiger-Muller Counter, Scintillation Counter and Film Badges, Nuclear structure, Classification of nuclides, Types of Radioactive Decay, The Group Displacement Law, Kinetics of Radioactive Decay, Half-life, average life, Energy released in nuclear reaction, Mass Defect, Nuclear Binding Energy, Some applications of radio-isotopes as tracers: Chemical investigation – Esterification, Friedel -Craft reaction, Structural determination – Phosphorus pentachloride, Age determination – use of tritium and  $C^{14}$  dating, Problems

**Expected learning Outcomes:**

After studying this topic students are expected to know

1. Radioactivity
2. Types and properties of radiations: alpha, beta and gamma
3. Detection and Measurement of Radioactivity: Cloud chamber, Ionization Chamber, Geiger-Muller Counter, Scintillation Counter, Film Badges

4. Types of radioactive decay:  $\alpha$ -Decay,  $\beta$ -Decay and  $\gamma$ -Decay
5. The Group Displacement Law, Radioactive Disintegration Series
6. Kinetics of Radioactive Decay, Half-life, average life and units of radioactivity
7. Energy released in nuclear reaction: Einstein's equation, Mass Defect, Nuclear Binding Energy,
8. Application of radioisotopes as a tracer: Chemical investigation- Esterification, Friedel - Craft reaction and structure determination w.r.t  $\text{PCl}_5$ , Age determination use of tritium and  $\text{C}^{14}$  dating.
9. Solve the problems based on this topic

**Reference books:**

1. Elements of Nuclear Chemistry by H.J. Arnikar
2. Essential of Physical Chemistry, Bahl and Tuli (S. Chand),. (Page No: 117-145)

**Additional Reference Books:**

- 1) Physical Chemistry by G. M. Barrow, International student Edition, Mc Graw Hill.
- 2) University General Chemistry by C.N.R. Rao, Macmillan.
- 3) Physical Chemistry by, R. A. Alberty, Wiley Eastern Ltd.
- 4) The Elements of Physical Chemistry by P. W. Atkins, Oxford.
- 5) Principles of Physical Chemistry by S. H. Maron, C. H. Prutton, 4thE dition.
- 6) Principles of Physical Chemistry by Puri, Sharma, Pathania,
- 7) Chemical applications of radioisotopes by H.J.M. Brown
- 8) Source book of Atomic energy by S. Glasstone and D. Van .
- 9) Modern Electrochemistry Second Edition by John O'M Bockris

Molecular Green Technology College Station, Texas and Amulya K. N. Reddy President International Energy Initiative Bangalore, India, Kluwer Academic Publishers New York, Boston, Dordrecht, London, Moscow

**DSEC-IV: CH-602 : Physical Chemistry-III****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Colligative properties of dilute solutions	09
2	Kinetics of Reactions in the Solid State	09
3	Electronic structure and macroscopic properties	08
4	Polymers	10
<b>Total</b>		<b>36</b>

**1) Colligative properties of dilute solutions (09L)**

Introduction, Solution, electrolytes and nonelectrolytes, Meaning of term colligative property, relative lowering of vapour pressure of solvent in solution, elevation of B.P. of solvent in solution, Landsberger's method, freezing point depression, Beckmann's method, Osmosis and Osmotic pressure, Berkeley and Hartley method, application of colligative properties to determine molecular weight of nonelectrolyte, abnormal molecular weight, Relation between Vant Hoff's factor and degree of dissociation of electrolyte by colligative property, Numerical.

Expected learning Outcomes:

After studying this topic students are expected to know

1. Meaning of the terms-Solution, electrolytes, nonelectrolytes and colligative properties,
2. Lowering of vapour pressure of solvent in solution,
3. Elevation of B.P. of solvent in solution, Landsberger's method,
4. freezing point depression, Beckmann's method Osmosis and Osmotic pressure, Berkeley and Hartley method,
5. Application of colligative properties to determine molecular weight of nonelectrolyte, abnormal molecular weight,
6. Relation between Vant Hoff's factor and degree of dissociation of electrolyte by colligative property,
7. Problems.

**Reference books:**

- 3) Principles of Physical Chemistry by Puri, Sharma, Pathania, (Page No: 778 - 800)
- 4) Essential of Physical Chemistry, Bahl and Tuli (S. Chand). (Page No: 614 - 684)

**2) Kinetics of Reactions in the Solid State: (09L)**

Some General Considerations, Factors affecting reactions in Solids, Rate Laws for Reactions in Solids, The Parabolic Rate Law, The First-Order Rate Law, The Contracting Sphere Rate Law, The Contracting Area Rate Law, The Prout-Tompkins Equation, Rate Laws Based on Nucleation, Applying Rate Laws, Results of Some Kinetic Studies, The Deaquation-Anation of  $[\text{Co}(\text{NH}_3)_5\text{H}_2\text{O}]\text{Cl}_3$ , Two Reacting Solids

**Expected learning Outcomes:**

1. Factors affecting on solid state reactions,
2. Rate laws for reactions in solid state
3. Applying rate laws for solid state reactions
4. Results of kinetics studies

**Reference books:**

- 1) Principles of James E House, Second Edn, (Page nos: 229 to 262)
- 2) Principles of Physical Chemistry by Puri, Sharma, Pathania,
- 3) Essential of Physical Chemistry, Bahl and Tuli (S. Chand).

**3) Electronic structure and macroscopic properties****(08L)**

Cohesive energy in ionic crystals, electronic structure of solids, conductors and insulators, Ionic crystals, semiconductors, cohesive energy in metals.

**Reference books:**

1. Castellan, G.W. Physical Chemistry Third edition (1993) , Addison –Wesley Publishing Co. ( Page Numbers 709-719)

**Expected learning Outcomes:**

1. Cohesive Energy of ionic crystals based on coulomb's law and Born Haber Cycle
2. Correspondence between energy levels in the atom and energy bands in solid
3. Band structure in solids – Na , Ca and diamond
4. Conductors and insulators – Its correlation with Extent of energy in energy bands
5. phenomena of photoconductivity
6. Semiconductors – Role of impurity in transformation of insulator into semiconductor
7. Temperature dependant conductivity semiconductors
8. Cohesive Energy in metals
9. Numericals based on cohesive energy

**4) Polymers****(10L)**

Introduction to Polymer Chemistry, Brief History, Polymer definition, Preparation, Classification, Structures, Chemical bonding & Molecular forces in Polymers. Ref. 1: Pages 1-14, Ref. 2: Pp. 1-16

Molecular weights of polymers: Average Molecular weight, Number Average & Weight Average Molecular weight, Molecular weight & degree of polymerisation, Practical significance of polymer molecular weights, b) Molecular weight determination by End Group Analysis & Viscosity method and c) Problems based on Number Average & Weight Average Molecular weight Ref. 1: Pages 86-89, 92, 96-98, 402-409

**References**

Polymer Science by V.R. Gowarikar, N.V. Vishvanathan, Jaydev Shreedhar New Age International Ltd. Publisher 1996.(Reprint 2012)

Textbook of Polymer Science by Fred Billmeyer, 3<sup>rd</sup> Edn. A Wiley-Interscience Publication John Wiley & Sons New York 1984. (Reprint 2008)



**Expected learning Outcomes:**

After studying this topic students are expected to know

- 1) History of polymers.
- 2) Classification of polymers
- 3) Chemical bonding & Molecular forces in Polymer
- 4) Molecular weight of polymers
- 5) Practical significance of polymer molecular weights
- 6) Molecular weight determination

**Reference books:**

- 1) Essential of Physical Chemistry, Bahl and Tuli (S. Chand). (Page No: 1 - 35)
- 2) Principles of Physical Chemistry by Puri, Sharma, Pathania, (Page No: 9-23)

**Other Reference Books:**

1. Atkins' Physical Chemistry by Peter Atkins Professor of Chemistry, University of Oxford, and Fellow of Lincoln College, Oxford Julio de Paula Professor and Dean of the College of Arts and Sciences Lewis and Clark College, Portland, Oregon
2. Barrow, G.M. Physical Chemistry Tata McGraw-Hill (2007).
3. Kotz, J.C., Treichel, P.M. & Townsend, J.R. General Chemistry Cengage Learning India Pvt. Ltd., New Delhi (2009).
4. Mahan, B.H. University Chemistry 3rd Ed. Narosa (1998).

**DSEC-IV: CH-603 : Physical Chemistry Practical-II [Credit -2, 73 L]****Total 12 Experiments to be performed.****1. Potentiometry (any five)**

- 1) To determine the PKa value of given monobasic weak acid by potentiometric titration.
- 2) To determine the formal redox potential of  $\text{Fe}_2^+/\text{Fe}_3^+$  system potentiometrically.
- 3) To determine the amount of NaCl in the given solution by potentiometric titration against silver nitrate.
- 4) To determine the solubility product and solubility of AgCl potentiometrically using chemical cell.
- 5) Estimate the amount of Cl<sup>-</sup>, Br<sup>-</sup> and I<sup>-</sup> in given unknown halide mixture by titrating it against standard AgNO<sub>3</sub> solution (mixture of any two ions).
- 6) To prepare standard 0.2 M Na<sub>2</sub>HPO<sub>4</sub> and 0.1 M Citric acid solution, hence prepare four different buffer solutions using them. Determine the pH value of these and unknown solution.

- 7) To determine the composition of Zinc ferrocyanide complex potentiometrically
- 8) To determine the standard electrode potentials of Cu and Ag electrodes and to determine the EMF of a concentration cell.

**2. pH metry (any three)**

- 1) To determine the degree of hydrolysis of aniline hydrochloride.
- 2) To determine the dissociation constant of oxalic acid by pH-metric titration with strong base.
- 3) Determination of Pka of given weak acid by pH metry titration with strong base
- 4) To determine the acid and base dissociation constant of an amino acid and hence the isoelectric point of an acid.
- 5) pH metric titration of strong acid against strong base by pH measurement and hence determine the concentration and strength of strong acid.

**3. Radioactivity (any one)**

- 1) To determine plateau voltage of the given G M counter.
- 2) To determine the resolving time of GM counter.
- 3) To determine Emax of beta particle

**4. Colligative properties (any one)**

1. To determine the molecular weight of solute by depression in freezing point method
2. To study the association of Benzoic acid in benzene by Beckmann Method
3. Determine the molecular weight of given electrolyte and non-electrolyte by Landsberger's method and to study the abnormal molecular weight of electrolyte

**5. Turbidometry: (any one)**

1. Determination of  $\text{SO}_4^{2-}$  and  $\text{Cl}^-$  by turbidimetric method (turbidimetric titration or calibration curve method)
2. To determine the molecular weight of a given polymer by turbidometry

**6. Table work**

1. Analysis of crystal structure from X-ray diffraction spectra of any two compounds (Calculation d, lattice constant, crystal volume and density, and assigning planes to peaks using JCPDS data)

**Reference Books:**

1. Practical physical chemistry, A. Findlay, T.A. Kitchner (Longmans, Green and Co.)
2. Experiments in Physical Chemistry, J.M. Wilson, K.J. Newcombe, A.r. Denko. R.M.W. Richett (Pergamon Press)
3. Senior Practical Physical Chemistry, B.D. Khosla and V.S. Garg (R. Chand and Co.,

Delhi.).

4. Experimental Physical Chemistry by D. P. Shoemaker, Mc. Growhill, 7th Edition, 2003.
5. Physical chemistry by Wien (2001)
6. Advance Physical Chemistry Experiment, Gurtu and Gurtu, Pragati Publication (Meerut),
7. Experiments in Chemistry, D. V. Jahagirdar, Himalaya Publishing House
8. Practical physical Chemistry, B. Vishwanathan and P. S. Raghwan, Viva Books
9. Vogel-qualitative-inorganic-analysis-5th-edition-1979
10. Vogel, A.I. A Textbook of Quantitative Inorganic Analysis, ELBS.
11. Halpern, A. M. & McBane, G. C. *Experimental Physical Chemistry 3rd Ed.*; W.H. Freeman & Co.: New York (2003).

**DSEC-V: CH-604 : Inorganic Chemistry -II****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Organometallic Chemistry	08
2	Homogeneous and Heterogeneous catalysis	10
3	Bioinorganic Chemistry	08
4	Inorganic Polymers	05
5	Inorganic solids/ionic liquids of technological importance	05
<b>Total</b>		<b>36</b>

**1. Organometallic Chemistry****[8L]**

Definition of Organometallic compounds and Organometallic chemistry, CO as a  $\pi$ -acid donor ligand, binary metal carbonyls, classification of metal carbonyls, synthesis of metal carbonyls; (a) Direct reaction (b) Reductive carbonylation (c) Photolysis and thermolysis. Hapticity, Molecular and electronic structures of binary metal carbonyls, Electron count in complexes (18 electron rule). Applications of organometallic compounds in industrial catalysis (list of examples). Chemistry of ferrocene; Introduction, synthesis and physical properties of ferrocene. Reactions of ferrocene such as Friedel-Craft Acylation, Friedel-Craft Alkylation, Mannich reaction, Nitration and Halogenation.

**[Further Reading:** Student should also read about the interaction of different organic ligands with metals and their possible bonding.]

**Aim and Objectives:** Students should be able:

- i. To understand M-C bond and to define organometallic compounds
- ii. To define organometallic chemistry
- iii. To understand the multiple bonding due to CO ligand.
- iv. To know methods of synthesis of binary metal carbonyls.
- v. To understand the structure and bonding using valence electron count (18 ele. rule)
- vi. To understand the catalytic properties of binary metal carbonyls.
- vii. To understand the uses of organometallic compounds in the homogenous catalysis.
- viii. Chemistry of ferrocene

**References:**

1. Inorganic Chemistry – D.F. Shriver, P.W. Atkins, C.H. Lamford – Oxford, 5<sup>th</sup> Edn., 1994, pp 534-542,553-564.
2. Concise Inorganic Chemistry by J. D. Lee (Relevant pages)
3. General Chemistry by Raymond Chang( Relevant pages)

4. Basic Organometallic Chemistry: Concepts, Syntheses and Applications of Transition Metals (CRC), B. D. Gupta and Anil J. Elias, Universities Press; 2<sup>nd</sup> Edition, 2013.

## 2. Homogeneous and Heterogeneous catalysis

[10L]

Introduction to Catalysis, basic principles, activity and selectivity in catalysis, Types of catalysis, homogeneous vs. heterogeneous catalysis, importance of catalysis in the synthesis of high value chemicals.

Homogeneous catalysis: catalytic cycles for following reactions: a) Hydrogenation of olefins using Wilkinson complex, b) Hydroformylation of olefins using Cobalt and Rhodium complexes, c) Carbonylation reaction: methanol to acetic acid process i.e. Monsanto processes and d) C-C coupling reactions: Heck reaction. [References 1 to 3]

Heterogeneous catalysis: History of the development of industrial heterogeneous catalysis, Classification of heterogeneous catalysts, supported metal catalyst, Role of support, Promoters and Poisons. Catalytic processes viz., a) Hydrogenation of olefins using Raney Nickel catalyst, b) Zeolites in catalysis: Catalytic cracking, c) Biodiesel synthesis using Heteropolyacids (HPAs) d) Automotive Exhaust catalysts: The catalytic converters. [Reference 5 to 6]

[Further reading: Student should also read about advanced development in the field of homogeneous and heterogeneous Catalysis.]

**Aims and objectives:** A student should be able to:

- i. Understand the phenomenon of catalysis, its basic principles and terminologies.
- ii. Define and differentiate homogeneous and heterogeneous catalysis.
- iii. Give examples and brief account of homogeneous catalysts.
- iv. Understand the essential properties of homogeneous catalysts-Give the catalytic reactions for Wilkinson's Catalysis, hydroformylation reaction, Monsanto acetic acid synthesis, Heck reaction
- v. Understand the principle of heterogeneous catalyst and development in it.
- vi. Give examples of heterogeneous catalysts.
- vii. Understand the classification and essential properties of heterogeneous catalysts.
- viii. Give the brief account of Hydrogenation of olefins, Zeolites in catalysis, biodiesel synthesis, Automotive Exhaust catalysts
- ix. Understand the catalytic reactions used in industries around.

### References:

1. Homogeneous Catalysis: The Applications and Chemistry of Catalysis by Soluble Transition Metal Complexes, G.W. Parshall and S.D. Ittel, Wiley, New York 1992.

2. Inorganic Chemistry D.F. Shriver and P.W. Atkins, 5th Edn, Oxford University Press, 2010, Chapter 26 pp690-721.
3. Homogeneous Catalysis: Mechanisms and Industrial Applications, S. Bhaduri and D. Mukesh, Wiley, New York, 2000.pp 13-23, 55-61,85-102, 161-163
4. Catalysis: Concepts and Green Applications: Gadi Rothenberg, Wiley-VCH; First edition, 2015 Relevant pages.
5. Heterogeneous catalysis in industrial practice, Charles N. Shatterfield, second edition, Krieger Publishing Company, Florida USA pp 1-16, 87-112, 203-205, 222-224.
6. Heterogeneous catalysis by B. Vishwanathan and D. K. Chakrabarty, New Age International Private Limited, 2007 (Relevant pages)

### 3. Bioinorganic Chemistry

[8 L]

I. Introduction, Role of metals in bioinorganic chemistry, Classification as enzymatic and non-enzymatic metals, enzymatic redox metals such as Cu (SOD) and enzymatic non-redox metals such as Zn (Hydrolase). Role of metal ions in non-enzymatic processes-Na, K, Ca, Mg (one example of each and brief discussion). Role of metals in enzymatic processes-Transition metals-Catalase, peroxidase and nitrogenase (Redox active). II. Metalloproteins-Iron proteins-Introduction of Fe-S proteins, Electron transfer proteins (Fe-S, Fe<sub>2</sub>S<sub>2</sub>, Fe<sub>3</sub>S<sub>4</sub>, Fe<sub>4</sub>S<sub>4</sub>). Transport protein (transferrin) and Storage protein (ferritin) III. Bioinorganic Chemistry of Fe: Hemoglobin and myoglobin, its structure and functions and IV. Bioinorganic Chemistry of Co: Vitamin-B<sub>12</sub>, its structure and function.

[Further Reading: Student should also read about the role of other metals and advanced development in the field of Bioinorganic Chemistry.]

**Aims and objective-** A student should:

- i. Identify the biological role of inorganic ions & compounds.
- ii. Know the abundance of elements in living system and earth crust.
- iii. Give the classification of metals as enzymatic and non-enzymatic.
- iv. Understand the role of metals in non-enzymatic processes.
- v. Know the metalloproteins of iron.
- vi. Explain the functions of hemoglobin and myoglobin in O<sub>2</sub> transport and storage.
- vii. Understand the toxicity of CN<sup>-</sup> and CO binding to Hb.
- viii. Draw the structure of Vit.B<sub>12</sub> and give its metabolism.

#### References:

1. Concise Inorganic Chemistry by J.D. Lee - 5<sup>th</sup> edition, Pages 353, 775, 779, 796-797.
2. Inorganic Chemistry, -D.F. Shiver & P.W. Atkins- C.H. Longford ELBS- 2<sup>nd</sup> Ed,782-806.

- Principles of Bioinorganic Chemistry by S. J. Lippard and J. M. Berg, Panima Publishing Corporation, 1<sup>st</sup> Edn., Pages 1-13, 24, 285-290.

#### 4. Inorganic Polymers

[5L]

Introduction, Types of inorganic polymers, comparison with organic polymers, synthesis, structural aspects and applications of silicates, silicones, siloxanes, borazines, and phosphazenes.

**Aims and objective:** A student should be able to:

- know thy types of Inorganic polymers
- comparison with organic polymers
- synthesis, structural aspects of Inorganic polymers
- understand the polymers of Si, B, Si and P
- Inorganic polymers and their use.

#### References:

- Inorganic polymer chemistry, Pimpalpure, Jain, Soni, Sahai, Pragati edition 2012, pages 1-7, 110-129, 179-186, 207-217
- N. H. Ray, Inorganic Polymers, Academic Press (1978).
- Inorganic Polymers, Second Edition James E. Mark Harry R. Allcock Robert West Oxford University Press, 2<sup>nd</sup> Edition, 2005.

#### 5. Inorganic solids/ionic liquids of technological importance

[5L]

Inorganic solids, Preparation of inorganic solids: Conventional heat and beat methods, Co-precipitation method, Sol-gel method and Hydro-thermal method. Introduction to Solid electrolytes, inorganic liquid crystals and their examples. Ionic liquids, synthesis and application of imidazolium and phosphonium based ionic liquids.

**Further reading:** student should also read about the advanced smart materials and green aspects of ionic liquids.

**Aims and objective: A student should know:**

- Understand Preparation of inorganic solids by various methods,
- Inorganic liquid crystals
- Ionic liquids, their preparations, and their significance w.r.t green chemistry.
- Technological importance of ionic liquids,

#### Reference

- Rodger, G.E. *Inorganic and Solid State Chemistry*, Cengage Learning, 2002.
- Ionic Liquids: Industrial Applications for Green Chemistry, Robin D. Rogers, Kenneth R. Seddon, American Chemical Society, Washington, DC, USA. pp1-13, 30-41

**DSEC-V: CH-605: Inorganic Chemistry -III****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Acid–Base and Donor–Acceptor Chemistry	08
2	Ionic Solids	10
3	Chemistry of Zeolites	08
4	Introduction to Nanochemistry	05
5	Chemical Toxicology	05
<b>Total</b>		<b>36</b>

**1. Acid–Base and Donor–Acceptor Chemistry****[8 L]**

Acid–Base Models as Organizing Concepts, Arrhenius Concept, Brønsted–Lowry Concept, solvent system concept, Lux Flood concept, Lewis Concept, Frontier Orbitals and Acid–Base Reactions, Hard and soft acids and bases, theory of hard and soft acids bases, Acid and base strength (proton affinity, acidity and basicity of binary hydrogen compounds, inductive effects, steric effect, strength of oxy acids, acidity of cations in aqueous solutions, non-aqueous solvents and acid and base strengths, super acids).

**Aims and objectives: A student should:**

1. Student will learn the concept of acid base and their theories.
2. They will also come to know different properties of acids and bases.
3. Strength of various types acids.
4. How acid and base strengths get affected in non-aqueous solvents.

**Reference:** Inorganic chemistry, Gary L Messler and Donald A Tar, Third Ed, Pearson publisher, pages: 67-178, 183 – 208.

**2. Ionic Solids****[10L]**

Crystalline and amorphous solids, crystal structures simple cubic, body centered cubic and face centered cubic, Properties of ionic solids, packing arrangements of anions in an ionic solids, Voids in crystal structure- tetrahedral and octahedral, Ionic radius, Pauling's univalent and crystal radii, Conversion of univalent radii to crystal radii, problems based on conversion of radii, Radius ratio effect, Lattice energy, Born-Landé equation, Born Haber cycle and its applications, Schottky and Frenkel defect.

**A student should:**

1. Know the nature of solids.
2. Know the crystal structures of solids.



3. Draw the simple cubic, BCC and FCC structures.
4. Identify the C.N. of an ion in ionic solid.
5. Identify the type of void.
6. Know the effect of radius ratio in determining the crystal structure.
7. Be able to define Pauling's univalent radius and crystal radius.
8. Be able to solve simple problems based on Pauling's univalent radii and crystal radii.
9. Know how to draw Born-Haber cycle.
10. Be able to solve simple problems based on Born- Haber cycle.
11. Know the defects in Ionic solids.
12. Be able to differentiate between the defects.

**Reference Books:**

Ref. 1- Concise Inorganic Chemistry by J.D. Lee - 5<sup>th</sup> edition. Pages 32-61

Ref .2- Concept and Model of Inorganic Chemistry by Douglas–Mc Daniels - 3<sup>rd</sup> edition Pp 102-127.

Ref. 3 -New Guide to Modern Valence Theory by G.I. Brown - 3<sup>rd</sup> edition Pages 55-62

**3. Chemistry of Zeolites****[8L]**

1. Historical Background, Natural and artificial Zeolites,
2. Zeolite Framework Types: Classification, Nomenclature, Database of Zeolite Structures, Channels, Building Units, Natural Tiles, Framework Density, Coordination Sequences
3. Zeolite Structures: Framework Composition, Extra-framework Species, Stacking Faults and Disorder
4. Synthesis of Zeolites: Introduction, Basic Zeolite Synthesis, Mineralizing Agents, Effects of water concentration, Gel preparation and crystallization, Structure Directing Agents (SDA)
5. Applications 1. Zeolites as Heterogeneous Catalysts: Critical Properties for Catalysis, Catalytic Applications, Zeolites for Fine Chemistry: Acylation and Alkylation Aromatic Hydrocarbons, 2. Zeolites for Adsorption and Separations

**A student should:**

1. Different Zeolite Framework Types and their classification
2. Zeolite synthesis and their structure
3. Application of zeolites

**Reference:**

1. Zeolites in Catalysis Properties and Applications Edited by Jiri Cejka, Russell E. Morris, Petr Nachtigall, The Royal Society of Chemistry 2017 pp 1-5, 19-25, 37-50, 73-79, 87, 412-414, 418

2. Chemistry of Zeolites and Related Porous Materials: Synthesis and Structure, Ruren Xu, Wenqin Pang, Jihong Yu, Qisheng Huo, Jiesheng Chen, John Wiley & Sons (Asia) Pvt. Ltd, 2007

#### 4. Introduction to Nanochemistry

[5L]

Synthesis and Stabilization of Nanoparticles by Chemical Reduction, Reactions in Micelles, Emulsions, and Dendrimers. Photochemical and Radiation Chemical Reduction, Cryochemical Synthesis, Physical Methods. Particles of Various Shapes and Films, Properties and Application of Nanoparticles in Science and Technology (in brief), Applications of CNTs

#### Reference:

1. Nanochemistry, G.B.Sergeev, Elsevier, 2006, pp 7-36, 175-83,199-201
2. The Chemistry of Nanomaterials C. N. R. Rao, A. Muller, A. K. Cheetham (Eds.) WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim, 2004. (Relevant pages)

#### A student should:

1. Various methods of nanoparticle synthesis
2. Stabilization of Nanoparticles in solution
3. Properties and Application of Nanoparticles
4. Know about carbon nanotube and its application

#### 5. Chemical Toxicology

[5L]

Toxic chemicals in the environment, Impact of toxic chemistry on enzymes. Biochemical effect of Arsenic, Cadmium, Lead and Mercury. Biological methylation.

#### A student should be able -

- i) To know toxic chemical in the environment.
- ii) To know the impact of toxic chemicals on enzyme.
- iii) To know the biochemical effect of Arsenic, Cd, Pb, Hg.
- iv) To explain biological methylation.

#### Reference:

- i) Fundamental Chemistry by A. K. De (3<sup>rd</sup> Ed.)
- ii) Environmental chemistry by A.K.De Publisher- Wiley Eastern Limited New Age International Limited Page No. 75-100.

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### DSEC-V: CH-606: Inorganic Chemistry Practical-II

[Credit -2, 73 L]

#### Total 12 Experiments to be performed.

#### A. Volumetric Estimations (Any 3)

1. Analysis of Phosphate ( $\text{PO}_4^{3-}$ ) from Fertilizer. (Ref-1)
2. Analysis of Iodine from Iodized salt.(Ref-2)

3. Strength of medicinal  $H_2O_2$ . (Ref-1)
4. Analysis of Calcium from milk powder. (Ref-1)
5. Analysis of Cu from Cu-Fungicide. (Ref-1)

**B. Flame Photometry (Any 3) (Ref-1)**

1. Estimation of Na by flame photometry by calibration curve method.
2. Estimation of Na by flame photometry by regression method.
3. Estimation of K by flame photometry by calibration curve method.
4. Estimation of K by flame photometry by regression method.

**C. Column Chromatography (any 1) (Ref-1)**

1. Purification of water using cation/anion exchange resin and analysis by qualitative analysis /conductometry.

**D. Nanomaterial synthesis (Any 1) (Ref-3, 4)**

1. Synthesis of Silver nanoparticles.
2. Synthesis of ZnO nanoparticles.

**E. Verification of periodic trends using solubility of alkaline earth metal hydroxides  $Ca(OH)_2$ ,  $Mg(OH)_2$ ,  $Cr(OH)_2$ ,  $Ba(OH)_2$ . (Ref-1)****F. Synthesis of amine complexes of Ni(II) and its ligand exchange reaction (bidentate ligands like acac, DMG, Glycine) by substitution method.**

**OR**

Determination of the Metal to ligand ratio (M : L) in complexes. (Ref-5)

**G. Solvent free microwave assisted one pot synthesis of phthalocynin copper (II) complex.**

**OR**

Fenton reaction: Degradation of  $H_2O_2$  using Fe catalyst. (Ref-6)

**H. Table work: Band gap calculation for the nanomaterial  $TiO_2$ /  $SnO_2$ /  $ZnO$  from its electronic spectra (UV-Visible). (Ref-3, 4)****References:**

- 1: Vogel's textbook of Inorganic Quantitative Analysis, Jeffery, Basset, Mendham Deney, 5th Ed, Longman Scientific Technical, USA (copublished with John Wiley Sons)
- 2: General Chemistry Experiment – Anil J Elias (University press).
- 3: Nanotechnology: Principles and Practices by Dr.Sulbha Kulkarni. Third Edition, Springer
- 4: A laboratory course in nanoscience and nanotechnology, Dr. Gerrad Eddy Jai Poinem, CRC press
- 5: Experimental Inorganic Chemistry, Mounir A. Malati, Horwood Series in Chemical Science (Horword Publishing, Chichester) 1999.

6: Environmental Chemistry Microscale Laboratory Experiments, Jorge G.Ibanez Margarita  
Hernandez-Esparza Carmen Doria-Serrano Arturo Fregoso-Infante, Springer

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**Structure of Practical Examination [35 Marks; Time: 3 hours]**

*Q1. Expt. A/ B/ C/ D/ E/ F/ G/ H* .....**30 M**

*Q2. Viva-Voce* .....**05 M**  
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**DSEC-VI: CH-607: Organic Chemistry-II****[Credit -2, 36 L]**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Introduction to Spectroscopy	03
2	Ultra Violet and Visible Spectroscopy	06
3	Infra-Red Spectroscopy	08
4	Nuclear Magnetic Resonance Spectroscopy (PMR)	10
5	Combined problems based on U.V., I.R. and PMR spectroscopy	05
6	Stereochemistry of Disubstituted Cyclohexane and Decalin	04
<b>Total</b>		<b>36</b>

**1: Introduction to Spectroscopy****[03 L]**

Introduction, meaning of spectroscopy, Types of spectroscopy, nature of electromagnetic radiation and regions of electromagnetic spectrum, Terms used in spectroscopy; wavelength, amplitude, frequency, wavenumber, energy and their relations and conversions Ref 2: Page Nos. 43-55 Chapter

**2: Ultra Violet and Visible Spectroscopy****[06 L]**

Introduction, Electromagnetic radiations, electronic transitions,  $\lambda_{\max}$  &  $\epsilon_{\max}$ , chromophore, auxochrome, bathochromic and hypsochromic shifts, Application of visible, ultraviolet spectroscopy in organic molecules. Application of electronic spectroscopy and Woodward rules for calculating  $\lambda_{\max}$  of conjugated dienes and  $\alpha$ ,  $\beta$  – unsaturated compounds. Ref 1: Page Nos.367-398

**3: Infra-Red Spectroscopy****[08 L]**

Introduction, Infrared radiation and types of molecular vibrations, functional group and fingerprint region. Infra-red spectroscopy in organic molecules, IR spectra of alkanes, alkenes and simple alcohols (inter and intramolecular hydrogen bonding), aldehydes, ketones, carboxylic acids and their derivatives (effect of substitution on  $>C=O$  stretching absorptions). Ref 1: Page Nos 26-93

**4: Nuclear Magnetic Resonance Spectroscopy (PMR)****[10 L]**

Introduction, Principles, Magnetic and nonmagnetic nuclei, nuclear resonance, chemical shift, shielding, & deshielding effect. Measurement of chemical shift, TMS as reference and its advantages, peak area, integration, spin-spin coupling, coupling constants, J-value, problems

based on NMR. Ref 1: Page Nos.108-175 and 225-366 Chapter 5: Combined Problems Based on U.V., I.R. and PMR Spectroscopy. [05 L] Ref 1: Page Nos. 501 to 567

**5: Combined problems based on U.V., I.R. and PMR spectroscopy. [05 L]**

**Ref 1:** Page Nos. 501 to 567

**6: Stereochemistry of Disubstituted Cyclohexane and Decalin [04 L]**

Recapitulation, Geometrical and optical isomerism of 1,3- dimethyl and 1,4-dimethyl cyclohexane with their stability and energy calculations. Conformations of decalin and their stability.

Ref.19: Pages 94, 213 - 216, 250. Ref.20: Pages 243 – 250, 289-292.

#### References:

1. Pavia D.L.; Lampman G.M. Kriz G. S.; Vyvyan J.R. Spectroscopy, First Indian Reprint 2008 : Brooks/Cole CENGAGE Learning.
2. Silverstein and Basallar: Spectroscopic Identification of Organic Compounds.
3. M. Parikh :Absorption Spectroscopy Organic Compounds ( John Wiley )
4. P. S. Kalsi : Spectroscopy of organic compounds (New Age)
5. J. R. Dyer: Application of absorption spectroscopy of organic compounds.
6. V. M. Parikh:Application spectroscopy of Organic molecules. ( Mehata)
7. D.W. Williams and Flemming: Spectroscopic methods of Organic compound.
8. Jackman and Stermineil: Application of NMR spectroscopy
9. J. D. Roberts:Nuclear magnetic resonance (J. Wiley)
10. Jaffe and Orchin: Theory and application of U. V.
11. K. Benjamin: Mass spectroscopy
12. Budsikiewicy et al.: Mass spectroscopy.
13. Beynon J H et al: The mass spectra of organic molecules.
14. W. Kemp: Organic spectroscopy ELBS
15. Atherben; Electron spin resonance
16. Das and Jame: Mass Spectroscopy.
17. Eliel: Stereochemistry of Organic Compounds, Tata Mc Graw Hill, 1989
18. D. Nasipuri: Stereochemistry of Organic Compounds- Principles and Applications, New Age International Publishers, 3rd edition.

#### Learning Outcomes

**Chapter 1 to 5:** Organic Spectroscopic Methods in Structure Determination. (Chapter 1-5)

Students will learn the interaction of radiations with matter. They will understand different regions of electromagnetic radiations. They will know different wave parameters.

1. Students will learn the principle of mass spectroscopy, its instrumentation and nature of mass spectrum.
2. Students will understand the principle of UV spectroscopy and the nature of UV spectrum. They will learn types of electronic excitations.
3. Students will be able to calculate maximum wavelength for any conjugated system. And from the value of  $\lambda$ -max they will be able to find out the extent of conjugation in the compound.
4. Students will understand the principle of IR spectroscopy, types of vibrations and the nature of IR spectrum.
5. From the IR spectrum, they will be able to find out IR frequencies of different functional groups. And thus, they will be able to find functional groups present in the compound.
6. Students will understand the principle of NMR spectroscopy and will understand various terms used in NMR spectroscopy. They will learn measurement of chemical shift and coupling constants.
7. Students will be able to interpret the NMR data and they will be able to use it for determination of structure of organic compounds.
8. Students will be able to determine the structure of simple organic compounds on the basis of spectral data such as  $\lambda$  max values, IR frequencies, chemical shift ( $\delta$  values).

**Chapter 6:** Students should be able to learn

1. The use of models to draw different types of disubstituted cyclohexanes in chair form
2. The geometrical isomerism in disubstituted cyclohexanes
3. The stability, energy calculations and optical activity of these conformers
4. The use models and to draw different types of conformational isomers of decalin in chair form
5. To know the stability of geometrical isomers of decalin

### DSEC-VI: CH-608: Organic Chemistry-III

[Credit -2, 36 L]

#### Synthetic Organic Chemistry

Chapter No	Chapter	No of Lectures
1	Retrosynthetic Analysis and Applications	06
2	Organic Reaction Mechanism and Synthetic Applications	12
3	Reagents in Organic Synthesis	10
4	Natural Products	08

#### 1. Retrosynthetic Analysis and Applications

[06 L]

Introduction, Different terms used – Disconnection, Synthons, Synthetic equivalence, FGI, TM. One group disconnection, Retrosynthesis and Synthesis of target molecules: Acetophenone, Crotonaldehyde, Cyclohexene, Benzylbenzoate, and Benzyl diethyl malonate.

*Ref 1: Page Nos. 1-34 Ref. 2: Page Nos. 694-722*

**2. Organic Reaction Mechanism and Synthetic Applications [12 L]**

1. Chemistry of reactive intermediates (carbocations, carbanions, free radicals, carbenes, nitrenes, benzyne etc...);
2. Wolff rearrangement (Step up),
3. Hofmann rearrangement (Step down),
4. Simmons-Smith reaction,
5. Michael reaction,
6. Wittig reaction and McMurry reaction,
7. Diels-Alder reaction,
8. Functional group interconversions and structural problems using chemical reactions.

*Ref 2 Page Nos. 1021-1022, 1009-1018, 500, 237-238, 982-983, 877-893*

**3. Reagents in Organic Synthesis [10 L]**

**Reagents-** Preparation and Applications of following reagents.

**Reducing Reagents:** *Ref 2 Pages Nos. 226, 828, 131-132, 26, 39, 537*

Lithium aluminium hydride  $\text{LiAlH}_4$ ,  $\text{NaBH}_4$ , DIBAL-H,  $\text{Li}(\text{tBuO})_3\text{AlH}$  & Raney Nickel.

**Oxidizing Reagents:** *Ref. 2 Page Nos. 545, 1123-1126, 919, 764*

1. DMSO either with DCC or  $\text{Ac}_2\text{O}$ , Dess Martin reagent, Osmium tetroxide, Selenium dioxide ( $\text{SeO}_2$ ), DDQ.

**4. Natural Products [08 L]**

*Ref 2: Page Nos. 1413-1447*

**Terpenoids:** Introduction, Isolation, Classification. Citral- structure determination using chemical and spectral methods, Synthesis of Citral by Barbier and Bouveault Synthesis.

**Alkaloids:** Introduction, extraction, Purification, Some examples of alkaloids and their natural resources. Ephedrine- structure determination using chemical methods. Synthesis of Ephedrine by Nagai.

**Reference:**

1. Designing Organic Synthesis by Stuart Warren 1983.
  2. Organic Chemistry by Clayden, Greeves, Warren and Wothers. Second edition.
  3. Organic Chemistry by I. L. Finar Vol. II Edn. V.
  4. Organic Chemistry by Morrison and Boyd. VI Edn.
- A Guidebook to Reaction Mechanism by Peter Sykes VI Edn.



**DSEC-VI: CH-609: Organic Chemistry Practical-II****[Credit -2, 73 L]****Total 12 Experiments to be performed****A) Interpretation of IR and NMR spectra (2 Experiments of each type)**

1. Determination of functional group of organic compound from given IR spectra.

2. Determination of structure of organic compound from given NMR spectra.

(Ethyl alcohol, Cis-2-butene, Trans-2-butene, Benzoic acid, Propanaldehyde, Ethyl methyl ether, 1 Butyne, Ethyl acetate, Propyl Cyanide, Salicylic Acid, Nitro phenols, Isopropyl benzene, Propanamine, Benzamide, n-Pentane, 2-chloro butane, Acetophenone)

**B) Organic Estimations (Any Three)**

1. Estimation of glucose

2. Estimation of glycine

3. Saponification value of oil

4. Estimation of Alkali content in Antacid using HCl.

**C) Organic Extractions (Any Three)**

1. Caffeine from tea leaves

2. Eugenol from cloves

3. Lycopene from tomato peels

4. Cinnamic acid from cinnamon

5. Trimyristin from nutmeg

**D) Column chromatography**

1. Separation of mixture of aldehyde and carboxylic acid by column chromatography

2. Separation of mixture of O-nitrophenol and P-nitrophenol by column chromatography

**Learning Outcomes:****A) Interpretations of IR and PMR Spectra The students will be able to**

1. Explain “fingerprint region” of an infrared spectrum can used in the identification of an unknown compound.

2. Identify the functional group or groups present in a compound.

3. Identify the broad regions of the infrared spectrum in which occur absorptions caused by N–H, C–H, and O–H, C=C and C≡N, C=O, C=N, and C=C.

4. Understand use NMR spectra to determine the structures of compounds.

5. Interpret integration of NMR spectra

6. Calculate coupling constants from  $^1\text{H}$  NMR spectra.

7. Interpret elemental analysis technique

**B) Organic Estimations The students will be able to**

1. Practical knowledge of handling chemicals.
2. Achieve the practical skills required to estimations of glucose and glycine.
3. Achieve the practical skills required to Saponification value of oil.
4. Determine the molecular weight of given tribasic acids.

**C) Organic Extractions The students will be able to**

1. Apply the principles of extraction
2. Understand the equipment for extraction.
3. Gain practical hands-on experience of modern Extraction.
4. Develop basic design of extractor
5. Describe the extraction separation process.

**D) Column chromatography The students will be able to**

1. Defines the basic parameters in chromatography
2. Explain the processes of a chromatography analysis
3. Describes the types and materials of column.
4. Explains the types of mobile phase and elution.
5. Realize the selection of appropriate mobile phase, column and detector

**SEC-III: CH-610: Skill Enhancing Course-III**

**[Credit -2, 36 L]**

**Choose one out of the two options, A and B.**

**CH-610 (A) : Chemistry of Soil and Agrochemicals**

Chapter No	Name of the Topic	Number of lectures
1	Soil Chemistry	6
2	Problematic Soil and Soil testing	6
3	Laboratory Methods of Soil Analysis	12
4	Fertilizers and Manures	6
5	Protection of Plants	6
<b>Total Lectures</b>		<b>36</b>

**1. Soil Chemistry**

**(6 L)**

- 1.1 Role of agricultural chemistry
- 1.2 Introduction to soil chemistry, definitions of soil, Soil components- Mineral component, organic matter or humus, soil atmosphere, soil water, soil microorganism.
- 1.3 Physical properties of soil- Soil texture, soil structure, soil colour, soil temperature, soil density, porosity of soil.

1.4 Surface soil and sub-soil, Functions of soil.

1.5 Chemical properties of soil - Soil reactions, importance of soil reaction, factors controlling soil reactions,

1.6 Buffer action, buffering capacity, importance of buffer reaction in agriculture, ion exchange and importance of ion exchange.

Ref 1- Pages 8-12, 92-94, 98-113, 116-146

Ref 3 - Pages 28-50

Ref 12 - Pages 211-224, 228-234

Ref 17 - Pages 49-56, 295-308, 357-370

### **2. Problematic Soil and Soil testing (06 L)**

2.1 Introduction to problematic soils.

2.2 Acid soils- formation of acid soil, effect of soil acidity on plant, reclamation of acidic soil, application of lime in improving the acidity of soil, lime requirements.

2.3 Alkali Soil- formation of alkali soil, reclamation of alkali soil.

2.4 Classification of alkali soil- saline soil, alkali soil, saline alkali soil, non-saline alkali soil.

2.5 Soil testing - Introduction, different methods of soil fertility evaluation.

2.6 Objectives of soil testing.

Ref 1- Pages 345-370

Ref 3 - 301-312

Ref 4 – Pages 135-147, 150-159

Ref 12 - Pages 237-246, 337-353

### **3. Laboratory Methods of Soil Analysis (12 L)**

3.1 Collection of soil Samples from field.

3.2 Soil sample preparation for analysis of various parameters.

3.3 Digestion and Extraction Procedures for soil.

3.4 Project/ Hands on training of Analysis of various parameters of soil and writing project on it.

**(Note: Students can perform minimum six experiments out of eight in the laboratory with the help of teacher and write report on it and submit to subject teacher. It is considered for internal marks of this course).**

1. Determination of pH of soil
2. Determination of EC and TDS of soil
3. Determination of soil organic matter of soil.
4. Determination of available nitrogen in soil.
5. Determination of available phosphorus from soil.

6. Determination of calcium and magnesium from soil by EDTA method.
7. Determination of sodium and potassium by flame photometry method.
8. Determination of carbonate and bicarbonates from soil.
9. Calculate the RSC, SAR, SSP, Salinity of soil. Interpretation of soil data and recommendations for soil use.

Ref 23 pages 11-160

Ref 25 pages 17-104

#### **4. Fertilizers and Manures**

**(06 L)**

##### **Fertilizers**

- 4.1 Introduction, Classification of nitrogenous fertilizers, reaction of ammonium sulphate, urea as a fertilizer in soil.
- 4.2 Nano fertilizers- Nano-Fertilizers for Sustainable Crop Production, Nano urea- preparation, forms and application of nano urea.
- 4.3 Phosphatic fertilizers- Classification of phosphatic fertilizers, reactions of superphosphate as a fertilizer in soil.
- 4.4 Potassic fertilizers - Classification of potassic fertilizers, reactions of potash fertilizer in soil.
- 4.5 Complex fertilizers- Characteristics, advantages and disadvantages,
- 4.6 Mixed fertilizers - Characteristics, advantages and disadvantages.
- 4.7 Time and mode of applications of fertilizers in the solid and liquid form to plants.
- 4.8 Factors affecting efficiency of fertilizers.

##### **Manures**

- 4.9 Introduction, Definition and classification of manures.
- 4.10 Effect of bulky organic manures on soil.
- 4.11 Farm yard manures (FYM), improved methods of handling FYM- Trench method for FYM, Factors affecting the composition of FYM, losses during the handling and storage of FYM, Gobar gas-compost plant - construction and advantages.
- 4.12 Biofertilizers - Definition, classification, role & advantages.
- 4.13 Vermicompost - Preparation, effect of vermicompost on soil fertility.

Ref 2- Pages 205-213,

Ref 3- Pages 90-112, 137-149

Ref 5 Pages Relevant pages

Ref 12 – Pages 263- 275, 280-290,

Ref 18 – URL: Attached in reference.

Ref 19 - URL: Attached in reference.

Ref 20 URL: Attached in reference.

## 5. Protection of Plants

(06 L)

5.1 Classification of pesticides.

5.2 Insecticide- Definition, Classification on the basis of mode of action and chemical properties.

5.2.1 Inorganic insecticides - plants or animal origin insecticides- nicotine, pyrethrum, rotenone.

5.2.2 Synthetic organic insecticides – a) Organochlorine insecticides - DDT, BHC, Aldrin and dieldrin. b) Organophosphorus insecticides – Parathion, Malathion, c) Carbamate insecticides – Carbaryl, Baygon.

5.3 Fungicide – Definition and Classification of fungicides.

5.3.1 Inorganic fungicide- Copper fungicides a) Bordeaux mixture, b) Copper oxychloride.

5.3.2 Organic fungicides- Dithiocarbamate, Quinone fungicides, Heterocyclic fungicides.

5.3.3 Synthetic fungicides.

5.4 Herbicides- Definition, Classification on the basis of mode of action- Selective and non-selective herbicides, classification based on their effect on weeds- contact, systemic herbicides. Classification on the basis of their chemical structures.

5.5 Nano pesticides: Its Scope and Utility in Pest Management

Ref 6 - Relevant Pages

Ref 13 – Pages 80-177,

Ref 14 – Pages 73-110,

Ref 15 – Chapter 3 Pages 1-45

Ref 16 Pages 2-16,

Ref 19 URL: Attached in reference.

Ref 21 URL: Attached in reference.

### Learning Objectives:

- 1) Know the different components and properties of soil.
- 2) Know classification of soil on the basis of pH.
- 3) Identify the problematic soil and recommend method for their reclamation.
- 4) Know the different plant nutrients required for plants and their functions.
- 5) Know the role of various fertilizers and manures required for plant growth.
- 6) Know the various methods and their techniques in analysis of soil.
- 7) Know importance of manures as compared to chemical fertilizers.

- 8) Know various techniques to protect the plants.
- 9) Have the knowledge of various pesticides, insecticides, fungicides and herbicides.

**Course Outcomes:**

After studying this course, student is expected to

- 1) Understood various components of soil and soil properties and their impact on plant growth.
- 2) Understood the classification of the soil.
- 3) Explores the problems and potentials of soil and decide the most appropriate treatment for land use.
- 4) Understood the Reclamation and management of soil physical and chemical constraints.
- 5) Useful in making decisions on nutrient dose, choice of fertilizers and method of application etc. practiced in crop production.
- 6) Got experience on advanced analytical and instrumentation methods in the estimation of soil.
- 7) Understood various Nutrient management concepts and Nutrient use efficiencies of major and micronutrients and enhancement techniques.
- 8) Proper understanding of chemistry of pesticides will be inculcated among the students.
- 9) Imparts knowledge on different pesticides, their nature and, mode of action and their fate in soil so as to monitor their effect on the environment.

**Reference Books**

1. A text book of soil science (Revise Edition) J. A. Daji. Revised by J. R. Kadam, N. D. Patil, Media promoters and publishers, Mumbai, 1996.
2. Text book of soil science, T. D. Biswas, S. K. Mukherjee, 2<sup>nd</sup> ed. Tata McGraw Hill Publishing company, New Delhi, 2017.
3. Introduction to Agronomy and soil, water management, V. G. Vaidya, K. R. Sahashtrabuddhe, (Continental Prakashan).
4. Principals of soil science, M. M. Rai, 4<sup>th</sup> ed. Million complex of India, Bombay, 1977.
5. Manures and fertilizers (12<sup>th</sup> ed.), K. S. Yawalkar, J. P. Agarwal and Bokde, Agri-horticulture publishing house, Nagpur, 2016.
6. Chemistry of insecticides and fungicides, U.S. Sreeramula (2<sup>nd</sup> ed.), oxford and IBH Publishing company, New Delhi.
7. Fundamentals of soil sciences, Henry D. Foth, 8<sup>th</sup> ed. John Wiley and Sons, 1990. Book Soft copy URL: <https://1lib.in/book/634160/343570>

8. Soil, Plant, Water and fertilizer analysis, P. K. Gupta, 2<sup>nd</sup> ed. Agrobios Publication, Jodhpur, India. Book Soft copy URL:  
[https://content.kopykitab.com/ebooks/2016/06/7111/sample/sample\\_7111.pdf](https://content.kopykitab.com/ebooks/2016/06/7111/sample/sample_7111.pdf)
9. Handbook of Biofertilizers and biopesticides, A. M. Deshmukh, R. M. Khobragade and P. D. Dixit, Oxford Book Company, Jaipur, India 2007. Book Soft copy URL:  
<https://1lib.in/book/961124/8ecdcd>
10. Essential Plant Nutrients uptake use efficiency and Management, M. Naem, Abid A. Ansari, Sarvajeet Singh Gill Editor, Springer International Publishing AG, 2017. Book Soft copy URL: <https://1lib.in/book/3376008/16ba17>
11. The Use of Nutrients in crop plants, N.K. Fageria, CRC Press, Taylor and Francis Group, LLC, 2009. Book Soft copy URL: <https://1lib.in/book/550595/3a2232>
12. Agronomic Handbook – Management of crops, soils and their fertility, J. Benton Jones, Jr. CRC Press LLC, Washington D.C. 2003. Book Soft copy URL:  
<https://1lib.in/book/946311/37a879>
13. The chemistry of Organophosphorus Pesticide, Christa Fest, Karl-Julius Schmidt, 2<sup>nd</sup> revised ed., Springer, Verlag Berlin Heidelberg, New York, 1982. Book Soft copy URL:  
<https://1lib.in/book/2137868/423f0a>
14. Chemical Pesticide - Mode of action and Toxicology, Jorgen Stenersen, CRC Press, 2004. Book Soft copy URL: <https://1lib.in/book/550607/97f6b8>
15. Agrochemical and Pesticide safety Handbook, Michel F. Waxman, CRC Press, 1998. Book Soft Copy URL: <https://1lib.in/book/2061906/6282cc>
16. Basic Guide to Pesticides: Their Characteristics and Hazards, Shirley A. Briggs, Rachel Carson Council, First Edition, CRC Press, Taylor and Francis Group, 2017. Book Soft copy URL: <https://1lib.in/book/3580723/94db6c>
17. Principles of Soil Chemistry, Kim H. tan, 4<sup>th</sup> ed. revised and expanded, Marcel Dekker AG, New York, 1998. Book Soft copy URL: <https://1lib.in/book/2572952/f500e1>
18. Nano fertilizers, Nano Urea- URL: <https://www.iffco.in/>
19. Nano fertilizers & Nano Pesticides, URL:  
<https://www.sciencedirect.com/science/article/pii/S0570178320300440> ,  
<https://www.sciencedirect.com/science/article/pii/B9780128200926000124>
20. Biofertilizers, URL: <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/biofertilizers> , [https://agritech.tnau.ac.in/ta/org\\_farm/orgfarm\\_biofertilizers.html](https://agritech.tnau.ac.in/ta/org_farm/orgfarm_biofertilizers.html),  
<https://en.wikipedia.org/wiki/Biofertilizer>
21. Nano Pesticides, URL: <https://link.springer.com/article/10.1007/s10311-016-0600-4>

22. A Practical Course in Agricultural Chemistry, D. W. Gilchrist Shirlaw and J. E. Nichols, First ed. Pergamon Press Ltd. Headington Hill Hall Oxford4 & 5 Fitzroy Square, London. 1967. Book Soft copy URL: <https://1lib.in/book/2275633/04aec0>
23. Laboratory Guide for Conducting Soil Tests and Plant Analysis, J. Benton Jones Jr. CRC Press, 2001. Book Soft copy URL: <https://1lib.in/book/665386/63e6f0>
24. Agricultural Chemistry, First Edition, R. P. Dhok, Amazon Digital Services, LLP-KDP E Book, US. 2021. Book Soft copy URL: <https://drive.google.com/file/d/1gnvIAzdN0aaZtKbX6TY9UZ2PC7M3ANN9/view?usp=sharing>
25. Methods in Agricultural Chemical Analysis: A Practical Handbook: N.T. Faithfull, CABI Publishing, 2002, Book Soft copy URL: <https://1lib.in/book/917802/0b4a71>

### CH-610 (B) Introduction to Forensic Chemistry

Chapter No	Name of the Topic	Number of lectures
1	History of Development of Forensic Science in India	10
2	Introduction to Narcotics Drugs and Psychotropic Substances	10
3	Analysis of Narcotics Drugs and Psychotropic Substances	16
<b>Total Lectures</b>		<b>36</b>

#### 1. History of Development of Forensic Science in India

[10 L]

Functions of forensic science. Historical aspects of forensic science. Definitions and concepts in forensic science. Scope of forensic science. Need of forensic science. Basic principles of forensic science. Frye case and Daubert standard. Work nature of forensic science. Qualifications of forensic scientists. Duties & Code of conduct for forensic scientists.

**Learning Objectives:** After studying this paper the students will know –

- The significance of forensic science to human society.
- The fundamental principles and functions of forensic science.
- The work nature in a forensic science laboratory.
- Encourage academic students towards the noble career

#### Suggested Readings

- B.B. Nanda and R.K. Tiwari, *Forensic Science in India: A Vision for the Twenty First Century*, Select Publishers, New Delhi (2001).



2. M.K. Bhasin and S. Nath, *Role of Forensic Science in the New Millennium*, University of Delhi, Delhi (2002).
3. S.H. James and J.J. Nordby, *Forensic Science: An Introduction to Scientific and Investigative Techniques*, 2nd Edition, CRC Press, Boca Raton (2005). Page No : 1-13, 243-260, 667-678
4. W.G. Eckert and R.K. Wright in *Introduction to Forensic Sciences*, 2nd Edition, W.G. Eckert (ED.), CRC Press, Boca Raton (1997). Page No: 11-78
5. R. Saferstein, *Criminalistics*, 8th Edition, Prentice Hall, New Jersey (2004).Page No 5-29
6. W.J. Tilstone, M.L. Hastrup and C. Hald, *Fisher's Techniques of Crime Scene Investigation*, CRC Press, Boca Raton (2013) Page No : 26-149
7. Directorate of Forensic Science services (DFSS) <http://dfs.nic.in/index.html>

## **2. Introduction to Narcotics Drugs and Psychotropic Substances [10 L]**

Definition of narcotics drugs and psychotropic substances. Broad classification – Narcotics, stimulants, depressants and hallucinogens. General characteristics and common example of each classification. Natural, synthetic and semi-synthetic narcotics drugs and psychotropic substances. Designer drugs. Tolerance, addiction and withdrawal symptoms of narcotics, drugs and psychotropic substances. Introduction to NDPS Act-1985 and awareness about Punishment for Offences.

## **3. Analysis of Narcotics Drugs and Psychotropic Substances [16 L]**

Crime scene search for narcotic drugs and psychotropic substances – searching a suspect, searching a dwelling, searching a vehicle. Clandestine drug laboratories. Collection and preservation of drug evidence. Testing of narcotics drugs and psychotropic substances. Isolation techniques for purifying narcotics drugs and psychotropic substances – thin layer chromatography, gas-liquid chromatography and high performance liquid chromatography. Presumptive and screening tests for narcotics drugs and psychotropic substances. Microcrystalline testing of Drug Abuse and Illicit Trafficking. Analysis of narcotics drugs and psychotropic substances in urine, and antemortem blood & in postmortem blood. Dope tests.

**Learning Objectives:** After studying this paper the students will know –

- a. The forensic identification of illicit liquors.
- b. The classification and characteristics of the narcotics, drugs and psychotropic substances.
- c. The menace of designer drugs.
- d. The methods of identifying of narcotics, drugs and psychotropic substance

### **Suggested Readings**

1. R. Saferstein, *Criminalistics*, 8<sup>th</sup> Edition, Prentice Hall, New Jersey (2004). Page No 10-26
2. S.B. Karch, *The Pathology of Drug Abuse*, CRC Press, Boca Raton (1996). Page No: 429-638

3. A. Poklis, Forensic toxicology in, *Introduction to Forensic Sciences*, 2nd Edition, W.G. Eckert (Ed.), CRC Press, Boca Raton (1997).Page No : 116-141
4. W.J. Tilstone, M.L. Hastrup and C. Hald, Fisher's, *Techniques of Crime Scene Investigation*, CRC Press, Boca Raton (2013). Page No 323-337
5. THE NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES, ACT, 1985  
<https://legislative.gov.in/sites/default/files/A1985-61.pdf>
6. THE NARCOTIC DRUGS SUBSTANCES AND PSYCHOTROPIC RULES, 1985  
[https://dor.gov.in/sites/default/files/Narcotic-Drugs-and-Psychotropic-Substances-Rules-1985\\_0.pdf](https://dor.gov.in/sites/default/files/Narcotic-Drugs-and-Psychotropic-Substances-Rules-1985_0.pdf)
6. National Policy on NDPS Govt. of India  
<https://dor.gov.in/narcoticdrugspychotropic/national-policy-ndps>
- 7.National Policy on NDPS & Punishment for Offences  
<https://dor.gov.in/narcoticdrugspychotropic/punishment-offences>
8. J.W. Robinson, *Undergraduate Instrumental Analysis*, 5th Edition, Marcel Dekker, Inc., New York (1995). Page No : 721-797
9. Analytical Techniques in Forensic Science Rosalind Wolstenholme, Sue Jickells, Shari Forbes, edition first edition 2021 John Wiley & Sons Ltd Page No; 51-68
10. FORENSIC ANALYTICAL TECHNIQUES Barbara Stuart University of Technology, Sydney, Australia, first edition 2013 John Wiley & Sons, Ltd. 143-166

**SEC-IV: CH-610: Skill Enhancing Course-IV****[Credit -2, 36 L]****Choose one out of the two options, A and B.****CH-611(A): Analytical Chemistry-II**

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Solvent extraction	08
2	Instrumental Methods of Chromatographic Analysis	04
3	High Performance Liquid Chromatography	06
4	Gas Chromatography	06
5	Atomic Absorption Spectroscopy	08
6	Flame Emission Spectroscopy	04
<b>Total</b>		<b>36</b>

**1. Solvent extraction****(8 L)**

Introduction to solvent extraction, organic phase, Partition the theory of extraction (distribution coefficient, Distribution ratio, solute remaining unextracted, Separation coefficient), Factors favoring solvent extraction, Quantitative treatment to solvent extraction equilibrium, Ion association complexes, synergic extraction, some extraction reagent specifically used for inorganic ions (Acetylacetone, 8-Hydroxyquinoline, Diphenylthiocarbazone, Sodium diethyldithiocarbamate, Ammonium pyrrolidine dithiocarbamate), some practical aspects, Applications: determination of copper as the diethyldithiocarbamate complex, Determination of Fe(III) with 8-hydroxyquinoline, determination of nickel by synergistic extraction. Solid phase extraction (Ref-3) Numericals; **Key Reference-2:** 242- 253, [Supplementary Ref-3: 579-593]

## **2. Instrumental Methods of Chromatographic Analysis (4 L)**

Principles of Chromatographic Separations, classification, Theory of Column Efficiency in Chromatography, (theoretical plate, rate theory of chromatography - the Van Deemter equation, efficiency and particle size in HPLC, retention factor efficiency and resolution,

**Key Reference -4:** 603-617, Supplementary reference-3: 547-556.

## **3. High Performance Liquid Chromatography (6 L)**

Introduction, Types of liquid chromatography (liquid-solid, liquid-liquid, bonded phases), Choice of mode of separation, Equipment for HPLC: mobile phase, sample injection and column design (mobile phase, optimization of mobile phase, gradient elution, solvent delivery and sample injection, sample injection system, the column (effect of column length and column diameter), Choosing the Detector, Ultraviolet detector, Luminescence detector, RI detector, electrochemical detector, Column efficiency, HPLC chromatogram and its characteristics (retention time, peak height, peak area), method of quantitative analysis by HPLC, Example: determination of aspirin, phenacetin and caffeine in a mixture, numerical, **Key Reference -2:** 289-315, [Supplementary reference - Ref-3: 649 – 724, Ref-6: 1-325 -relevant part]

## **4. Gas Chromatography (6 L)**

Introduction, Apparatus: A supply of carrier gas from a high-pressure cylinder, Sample injection system and derivatization, the column (Packed columns, Open tubular columns), the detector (properties, hot wire detector or TCD, FID, ECD), Quantitative analysis by GC (Area normalization method and internal standard addition method), Elemental analysis, numerical

**Key Reference-2: 317- 337**, [Supplementary reference - 7: 1-209 (relevant part)]

## **5. Atomic Absorption Spectroscopy (8 L)**

Introduction, Elementary theory, Instrumentation, flames, the nebulizer-burner system, non-flame techniques, (graphite furnace, cold vapour technique), resonance line sources, monochromator, detectors, interferences, chemical interferences, background correction

methods, Atomic absorption spectrophotometers, Experimental preliminaries (calibration curve methods, standard addition method) Preparation of sample (wet ashing, fusion, Dry ashing, microwave dissolution, concentration procedures), Detection limits, Estimation of Ca and Mg in water.

**Key Ref-2:** 612 – 643

### 6. Flame Emission Spectroscopy

(4 L)

Introduction, emission spectra, flame emission spectroscopy, flame photometers. Evaluation methods, calibration curve procedure, the standard addition technique, Applications: determination of alkali metals by flame photometry, determination of trace elements in contaminated soil by AAS. Numerical,

**Key Reference-2:** 645-649, 655-656

#### References:

**Ref-1:** Vogel's textbook of Inorganic Quantitative Analysis, Jeffery, Basset, Mendham Deney, 5<sup>th</sup> Ed, Longman Scientific Technical, USA (copublished with John Wiley Sons)

**Ref-2:** Vogel's textbook of Inorganic Quantitative Analysis, Mendham, Deney Barnes, 6<sup>th</sup> Ed, Pearson education

**Ref-3:** Analytical Chemistry by G. D. Christian, et al, Wiley, 6<sup>th</sup> Ed.

**Ref-4:** Principles of Instrumental Analysis: Holler, Skoog, Crouch 6<sup>th</sup> Ed. Thomson Publication

**Ref-5:** Modern Analytical Chemistry, David Harvey, Mc-Graw Hill Higher education

**Ref-6:** High performance Liquid Chromatography, (Analytical Chemistry through open learning series) Second Ed, Sandie Lindsay, Wiley

**Ref-7:** Gas Chromatography, (Analytical Chemistry through open learning series) 2<sup>nd</sup> Ed, [Ian A. Fowles](#), Wiley

#### Course outcome: After completion of the course student should able to

1. Define basic terms in solvent extraction, basics of chromatography, HPLC, GC, and AAS and AES. Some important terms are: solvent extraction, aqueous and organic phase, distribution ratio and coefficient, solute remain unextracted, percent extraction, ion association complex, theoretical plate, HETP, retention time, selectivity, resolution, stationary phase, normal and reverse phase, ion exchange, column efficiency, carrier gas, split and spitless injection, packed column, tubular column, atomic absorption and emission spectroscopy, electronic excitation in atoms, nebulization, atomization, reduction of metal ions in flame, absorbance by atoms in flame, flame atomizers, furnace atomizers, interference in AES and FES, HCL, hydride generator, etc.

- Identify important parameters in analytical processes or estimations. Example: minimum analyte concentration in particular method, reagent concentration for particular analysis, reagent for particular analysis, reaction condition to convert analyte into measurable form, wavelength selection in HPLC with spectrophotometric and fluorometric detector, solvent or carrier gas in HPLC and GC, choice method for the sample preparation in atomic spectroscopic methods, choice of filter and HCL in atomic spectroscopic methods, etc.
- Explain different principles involved in the analyses using solvent extraction, basics of instrumental chromatography, HPLC, GC, and atomic spectroscopic techniques.
- Perform quantitative calculations depending upon equations students has studied in the theory. Furthermore, student should able to solve problems on the basis of theory.
- Discuss / Describe procedure for different types analyses included in the syllabus.
- Select particular method of analysis if analyte sample is given to him.
- Differentiate / distinguish / compare among the different analytical terms, process and analytical methods.
- Demonstrate / explain theoretical principles with help of practical.
- Design analytical procedure for given sample.
- Apply whatever theoretical principles he has studied in theory during practical in laboratory.

### CH-611 (B): Chemistry of Cosmetics and Perfumes

Chapter No.	Title of Topic/Chapter	No. of lecture
1	Chemical composition, preparation and uses of some cosmetics	12
2	Chemistry of Perfumes and fragrances	12
3	Rules and regulations for cosmetic industry	12
<b>Total</b>		<b>36</b>

#### 1. Chemical composition, preparation and uses of some cosmetics [12 L]

A general study including chemical composition, preparation and uses of the following:

Hair dye, hair spray, shampoo, suntan lotions, face powder, lipsticks, talcum powder, nail enamel, creams (cold, vanishing and shaving creams), Eye make-up (Mascara, Eyeshadow, Eyeliner, Eyebrow pencil), Antiperspirants, (Ref. 1 – all relevant pages, Ref. 2 Pp. 149 - 177, 187 to 199, 233 to 255, 263, 291 to 310, 323 to 346, 406 to 422, 437 to 452, 457 to 490, 519 to 522)

#### 2. Chemistry of Perfumes and fragrances [12 L]

History of perfume, classification sources of fragrance, Development and role of natural products in cosmetics, Extraction of Essential oils and their importance and uses in cosmetic industries with reference to Chemistry of - Eugenol, Geraniol, sandalwood oil, eucalyptus, rose oil, 2-

phenyl ethyl alcohol, Jasmone, Civetone, Muscone. (**Ref. 3** Pages 3 to 67 and relevant pages from 68 to 360)

### 3. Rules and regulations for cosmetic industry

[12 L]

Understanding of regulations of Central Drugs Standard Control Organization, India Cosmetic Regulation, Steps for process of cosmetic registration in India (**Ref. 4, 5, 6**)

**4. Projects:** (students can choose any one of the following projects and submit a project report at the end of semester for evaluation)

1. Preparation of talcum powder. (**Ref.2** Pages 263)
2. Preparation of shampoo. (**Ref.2** Pages 323 to 346)
3. Preparation of enamels. (**Ref.2** Pages 495 to 522)
4. Preparation of hair remover. (**Ref.2** Pages 425 to 434)
5. Preparation of face cream. (**Ref.2** Pages 149 to 177)
6. Preparation of nail polish and nail polish remover. (**Ref.2** Pages 505 to 522)
7. Preparation of Emulsified and solid fragrances. (**Ref.2** Pages 575 to 583)
8. Isolation of Simple Floral fragrances and Alcoholic fragrances solution. (**Ref.2** Pp 569 to 573)

#### Reference Books:

1. Cosmetic Formulation: Principles and Practice - Heather A.E. Benson, Michael S. Roberts, Vania Rodrigues Leite-Silva, Kenneth Walters
2. COSMETICS Formulation, Manufacturing & Quality Control, Fourth Edition - P. P. Sharma, M pharm
3. Perfumes, Cosmetics and soaps, ninth edition, – W. A. Poucher.
4. <https://cdsco.gov.in/opencms/opencms/en/Cosmetics/cosmetics>
5. <https://cosmetic.chemlinked.com/cosmepedia/india-cosmetic-regulation>
6. <https://morulaa.com/cdsco/process-cosmetics-registration-india>

#### Additional References :

1. E. Stocchi: *Industrial Chemistry*, Vol -I, Ellis Horwood Ltd. UK.
2. Sharma, B.K. & Gaur, H. *Industrial Chemistry*, Goel Publishing House, Meerut (1996).
3. Indian medical plants: by Kirtikar & Basu
4. Naturals and Cosmetics – by Dr. Satish Sakharwade
5. Manufacture of Perfumes, Cosmetics & Detergents – Giriraj Prasad
6. Perfumes: History & Chemistry Vol-I- Dr. D. D. Wasule
7. Cosmetics: Science & Technology – Sagarin.
8. Essential oils Vol. I by Gunther.
9. Perfume flowers & essential oil industries by S.B. Srivastva.



**Savitribai Phule Pune University**  
*(Formerly University of Pune)*

**Three Year B. Sc. Degree Program in Zoology**  
**(Faculty of Science & Technology)**

**T. Y. B. Sc. Zoology**

**Choice Based Credit System Syllabus**

**To be implemented from**  
**Academic Year 2021 - 2022**

**Preamble:**

Zoology is one of the major subjects of Basic Sciences and deals with all aspects of animal biology. It includes an interesting range of highly diverse topics. A zoology student needs to gain understanding of many areas of the subject to keep pace with advancements in Life Sciences.

This under-graduate degree program has been designed by the Board of Studies in Zoology of Savitribai Phule Pune University with a substantial component of what is needed from a zoologist as a skilled career and what zoologists needs to pursue for post-graduation and further academic studies. It follows the guidelines laid down by the University Grants Commission, New Delhi. This newly designed curriculum is a perfect blend of the classical aspects in Zoology with the advanced and more specialized areas.

This degree offers Discipline Specific Core Courses [CC] in Animal Systematics, Animal Ecology, Animal Cell biology, Applied Zoology, Pest Management, Histology, Biological Chemistry, Genetics, Developmental Biology, Parasitology, Medical & Forensic Zoology, Animal Physiology, Molecular Biology, Entomology, Techniques in Biology and Evolutionary Biology.

In addition to the Core Courses, Ability Enhancement Compulsory Courses [AECC] have been added in the second year i.e. Semester III and Semester IV of the undergraduate course. In the third year i.e. Semester V and Semester VI, Discipline specific Elective Courses [DSEC] and Skill Enhancement Courses [SEC] have been offered. The students, therefore, have an opportunity to take courses in Environment Awareness, Language & communication, English / Marathi, Aquarium Management, Poultry Management and Environmental Impact Assessment. In Semester VI the students also have a course dedicated to Project work.

The syllabus has been framed in such a way that the student gains each year, a broader perspective of the subject as he progresses towards completion of the degree program. Field visits, Educational visits and the Project work have been included for the student to experience the applications of the theory learnt in the classroom.

After completion of the program, it is expected that students will understand and appreciate: animal diversity, few applications of Zoology, the structure, functions and life processes at cellular, tissue, organ and system level, significance of evolution, and basic concepts of human health. The students would also gain an insight into laboratory and field work through the practical course, field work and the project.

While presenting this new syllabus to the teachers and students of T. Y. B. Sc. Zoology, I am extremely happy to state that efforts have been made to seek inputs of all the stake holders to make it more relevant.

The new course will be effective from the academic year 2021- 2022 and will follow the Choice Based Credit System in a Semester mode. It has been primed keeping in view the distinctive requirements of B. Sc. Zoology students. The contents have been drawn-up to accommodate the widening prospects of the discipline of Life Sciences. They reflect the changing pre requisites of the students. This graduate program has been introduced with 132 credits for the subject group while 08 credits to earn from any of the 08 groups offering a range of curricular, co-curricular and extracurricular activities. This pattern has been specially aimed towards the overall development of the students.



The calculation of credits and CGPA will be as per the guidelines of the University. The B. Sc. Zoology program provides an appropriate blend of classical and applied aspects of the subject. This newly designed curriculum will allow students to acquire the skill in handling scientific instruments planning and performing in the laboratory and exercising critical judgement, independent thinking and problem solving skills. The Syllabus has been revised with the following aims -

- To foster curiosity in the students for Zoology,
- To create awareness amongst students for the basic and applied areas of Zoology,
- To orient students about the importance of abiotic and biotic factors of environment and their conservation,
- To provide an insight to the aspects of animal diversity,
- To inculcate good laboratory practices in students and to train them about proper handling of lab instruments.

Board of Studies in Zoology  
Savitribai Phule Pune University

**1. Course Structure:****Course Structure with Credit Distribution of the Undergraduate Science Program in Zoology**

Course	Course Code and Name of the Course		Credits
<b>F. Y. B. Sc.</b>	<b>SEMESTER I</b>	<b>SEMESTER II</b>	
CC	ZO-111 Animal Diversity I	ZO-121 Animal Diversity II	2+2
CC	ZO-112 Animal Ecology	ZO-122 Cell Biology	2+2
CC	ZO-113 Zoology Practical Paper	ZO-123 Zoology Practical Paper	1.5+1.5
<b>S. Y. B. Sc.</b>	<b>SEMESTER III</b>	<b>SEMESTER IV</b>	
CC	ZO-231 Animal Diversity III	ZO-241 Animal Diversity IV	2+2
CC	ZO-232 Applied Zoology I	ZO-242 Applied Zoology II	2+2
CC	ZO-233 Zoology Practical Paper	ZO-243 Zoology Practical Paper	2+2
AECC	EVS 231-Environment Awareness	EVA 241-Environment Awareness	2+2
AECC	LA 231-English / Marathi	LA 241- English / Marathi	2+2
<b>T. Y. B. Sc.</b>	<b>SEMESTER V</b>	<b>SEMESTER VI</b>	
DSEC	ZO-351 - Pest Management	ZO-361 - Medical & Forensic Zoology	2+2
DSEC	ZO-352 - Histology	ZO-362 - Animal Physiology	2+2
DSEC	ZO-353 - Biological Chemistry	ZO-363 - Molecular Biology	2+2
DSEC	ZO-354 - Genetics	ZO-364 - Entomology	2+2
DSEC	ZO-355 - Developmental Biology	ZO-365 - Techniques in Biology	2+2
DSEC	ZO-356 - Parasitology	ZO-366 - Evolutionary Biology	2+2
DSEC	ZO-357 - Zoology Practical Paper 1	ZO-367 - Zoology Practical Paper 1	2+2
DSEC	ZO-358 - Zoology Practical Paper 2	ZO-368 - Zoology Practical Paper 2	2+2
DSEC	ZO-359 - Zoology Practical Paper 3	ZO-369 - Zoology Practical Paper 3	2+2
SEC	ZO-3510 - Aquarium Management	ZO-3610 - Environmental Impact Assessment	2+2
SEC	ZO-3511 - Poultry Management	ZO-3611 - Project	2+2

**2. Detailed Syllabus of T. Y. B. Sc.**

Following is the syllabus of each course along with the course outcomes:

SR.NO.	SEMESTER	COURSE NUMBER AND NAME	CREDITS
1	V	ZO 351 - Pest Management	2
2	V	ZO 352 - Histology	2
3	V	ZO 353 - Biological chemistry	2
4	V	ZO 354 - Genetics	2
5	V	ZO 355 - Developmental Biology	2
6	V	ZO 356 - Parasitology	2
7	V	ZO 357 - Zoology Practical Paper 1	2
8	V	ZO 358 - Zoology Practical Paper 2	2
9	V	ZO 359 - Zoology Practical Paper 3	2
10	V	ZO 3510 - Aquarium Management	2
11	V	ZO 3511 - Poultry Management	2
12	VI	ZO 361 - Medical & Forensic Zoology	2
13	VI	ZO 362 - Animal Physiology	2
14	VI	ZO 363 - Molecular Biology	2
15	VI	ZO 364 - Entomology	2
16	VI	ZO 365 - Techniques in Biology	2
17	VI	ZO 366 - Evolutionary Biology	2
18	VI	ZO 367 - Zoology Practical Paper 1	2
19	VI	ZO 368 - Zoology Practical Paper 2	2
20	VI	ZO 369 - Zoology Practical Paper 3	2
21	VI	ZO 3610 - Environmental Impact Assessment	2
22	VI	ZO 3611 - Project	2

**SEMESTER - V****Course Title: Pest Management****Course Code: ZO 351****Credits - 02****ZO 351 - Pest Management****Course Objectives:**

After you complete your study of this unit, you should be able to:

- Explain why identification of the pest is the first step in developing an effective pest control strategy.
- Explain the differences between continuous pests, sporadic pests, and potential pests.
- Explain what is meant by prevention, suppression, and eradication of pests.
- Describe "thresholds" and why they are an important consideration in developing a pest control strategy.
- Describe "monitoring" as it relates to pest control and explain why it is important to pest control strategy.

**Course Outcomes:**

1. Define pest management.
2. Describe the economic, ecological, and sociological benefits of IPM.
3. Distinguish positive and negative impacts of pesticide use.
4. Understand problems resulting from misuse, overuse, and abuse of chemical pesticides.
5. Define and describe pesticide resistance and how it develops.
6. Identify ecological and biological characteristics important in development of pest populations.
7. Identify 10 tactics commonly used in IPM and be able to distinguish them.
8. Understand society's role in IPM decisions.
9. Describe different groups of pests and compare them to weeds and plant pathogens.
10. Analyse and compare management tactics to determine the best approach to reducing pest populations, weeds, and disease presence.
11. Locate appropriate, scientifically valid sources of information on specific tactics to manage insect pests, weeds, and diseases.
12. Know and how to develop an IPM program.

**Title & Contents****Number of lectures****1. Pest:****2 L**

- 1.1. Definition.
- 1.2. Types of pests.
- 1.3. Types of damages caused by the pest.

**2. Pest management using Regulatory control:****4 L**

- 2.1. Quarantine.
- 2.2. Eradication.

- 2.3. Control districts.  
2.4. "Crop-free" periods.
- 3. Pest management using Cultural control: 4 L**
- 3.1. Sanitation.  
3.2. Tillage.  
3.3. Crop rotation.  
3.4. Cropping systems.
- 4. Pest management using Biological control: 4 L**
- 4.1. Ecological considerations.  
4.2. Biological control of insects.  
4.3. Biological control of plant disease.  
4.4. Biological control of weeds.
- 5. Biotechnology approaches in pest management: 4 L**
- 5.1. Introduction.  
5.2. Recent advance in use of fungi and viruses.  
5.3. Methodology in Biotechnology.  
5.4. Somaclonal variability.  
5.5. Concept of Genetic engineering and Transgenic plants.
- 6. Integrated pest management (IPM): 5 L**
- 6.1. Principles and its components.  
6.2. Advantages and disadvantages.  
6.3. Biological control -  
Predators, Parasitoids, Entomopathogens, Weed killers and their mass production.
- 7. Insecticides: 4 L**
- 7.1. Classification of insecticides based on mode of entry.  
7.2. Action and chemical nature.  
7.3. Insecticides formulations and their uses.  
7.4. Safe handling of insecticides.
- 8. Insecticide residue: 3 L**
- 8.1. Methods of residue detection – Organochlorine, Organophosphates, Synthetic Pyrethroids, Systemic.  
8.2. Problems in fruits, vegetables, medicinal plants.  
8.3. Maximum permissible residue limits (MRLs).

### Reference Books -

1. Handbook of Pest Management in Agriculture by Pimentel.
2. Principles of Insect Pest Management by Dhaliewal and Arora.
3. Agricultural Pest of India & South East Asia by A. Satwal.
4. Pathological Problems of Economics Crop Plants & their Management by Paul Khurana, S. M., 1998.

5. Integrated Diseases Management and Plant Health by Gupta V. K. & Sharma R. C.
6. Diseases of Millets by Ramkrishnan T. S., I. C. A. R. Publ. New Delhi.
7. Fungal diseases of Rice in India by Padmanabhan S. Y., I. C. A. R. Publ., New Delhi.
8. Analysis of Pesticides Residues by H. A. Moye (JW)
9. Advance in Pest Control Research by R. L. Methcalf (JW)
10. Chemistry of pesticides by K. H. Buchel (JW).
11. Progress in Pesticides Biochemistry and Toxicology Vol. I, II & III by D. H. Hutson and T. R. Robert.
12. Evaluation of Pesticides in Ground Water by W. Y. Garnett, R. C. Honeycatt and others.
13. Chemistry of Pesticides by Edward
14. Insecticide Biochemistry and Physiology by C. F. Wilkinson.

**Course Title: Histology**

**Course Code: ZO 352**

**Credits: 02**

### ZO 352 - Histology

**Objectives –**

1. To understand the histological aspects of mammalian organs.
2. To study the important features of different types of tissues in organ system.
3. To understand the classification of various types of basic tissues.
4. To study structure & functions of various tissues in organ system.
5. To understand histological structure of various glands and its functions.

**Learning Outcomes for the course –**

1. The students will be able to understand, classify and identify the different types of tissue.
2. The students will understand the complexity of various tissues in an organ.
3. The students will be able to learn structure & functions of various tissues.
4. The students will understand the various diseases related to organs.
5. The student will be able to know the role of glands in mammals.

**Title & Contents**

**Number of lectures**

**1. Introduction:**

Definition and Scope of Histology.

**1 L**

**2. Definitions and Review of Types of Tissues:**

2.1 Epithelial tissue.

2.2 Connective tissue.

2.3 Nervous tissue.

2.4 Muscular tissue.

**3 L**

**3. Histological study of following mammalian organs:**

3.1 Skin (V. S.).

3.2 Tooth (V. S.).

**5 L**

3.3 Tongue (C. S.) with reference to mucosa papillae and taste buds.

**4. Histological study of Alimentary canal and Liver: 6 L**

4.1 Oesophagus (T. S.).

4.2 Stomach (T. S.).

4.3 Duodenum (T. S.).

4.4 Rectum (T. S.).

4.5 Liver (C. S.).

**5. Histological study of Respiratory organs: 2 L**

5.1 Trachea (T. S.).

5.2 Lung (C. S.).

**6. Histological study of Excretory organs: 3 L**

6.1 Kidney (L. S.).

6.2 Juxtaglomerular complex.

**7. Histological study of Reproductive organs: 4 L**

7.1 Testis (T. S.) with reference to Seminiferous Tubules and Cells of Leydig.

7.2 Ovary (C. S.).

**8. Histology of Endocrine glands: 6 L**

8.1 Pituitary gland.

8.2 Thyroid gland.

8.3 Adrenal gland.

8.4 Pancreas (C. S.) including both exocrine and endocrine components.

**Reference Books: -**

1. A Text Book of Histology, 2014, 5<sup>th</sup> Edn. Krishna Garg, Indira Bahl & Mohini Kaul CBS Publication & Distributors, Delhi.
2. Histology, 1987, 9<sup>th</sup> Edn., Arthur W. Ham, David H. Cormack, J. B. Lippincott Co. Philadelphia.
3. Histology, 1977, 4<sup>th</sup> Edn., R. O. Greep and L. Weiss, McGraw Hill Int. Book Co., New York.
4. Hand Book of Histo-pathological & Histo-chemical Techniques, 1983, 3<sup>rd</sup> Edn. reprint, Butterworth & Co. (Publishers) Ltd, UK.

**Course Title: Biological Chemistry**

**Course code: ZO 353**

**Credits: 02**

**ZO 353 - Biological Chemistry**

**Objectives –**

1. To understand the basic concepts and significance of biochemistry.
2. To understand the basic concepts pH and Buffers
3. To understand the chemical structures of carbohydrate, and their biological and clinical significance.
4. To understand the structure and importance of proteins and lipids
5. To understand the variations in enzyme activity and kinetics.

**Learning Outcomes for the course -**

1. Learners shall be able to understand basic concepts and significance of biochemistry
2. The students will learn about the pH and Buffers.
3. The students will learn about the chemical structures of carbohydrate, and their biological and clinical significance.
4. The students will be able to understand, interpret structure and importance of proteins, carbohydrates and lipids
5. Learners will be able to comprehend variations in enzyme activity and kinetics.

<b>Title &amp; Contents</b>	<b>Number of lectures</b>
<b>1. Introduction of Biochemistry:</b> Importance of Biochemistry in Life Sciences.	<b>1 L</b>
<b>2. p<sup>H</sup> and Buffers:</b> 2.1 Concept of p <sup>H</sup> . 2.2 Concept of p <sup>H</sup> scale, biological significance of p <sup>H</sup> 2.3 Concept of acid and base, Ionization of acids and bases. 2.4 Derivation of Henderson-Hassel Balch equation & its applications. 2.5 Buffer - Definition, Concept, Functions, Types of buffer and Buffering Capacity.	<b>3 L</b>
<b>3. Carbohydrates:</b> 3.1 Definition, Classification & Biological importance of Carbohydrates. 3.2 Isomerism in carbohydrates - Structural and Stereoisomerism. 3.4 Significance of Gluconeogenesis, Glycogenolysis and Glycogenesis. 3.3 Clinical Significance - Hypoglycemia and Hyperglycemia.	<b>7 L</b>
<b>4. Amino acids and Proteins:</b> 4.1 General Structure of amino acids and Peptide bond. 4.2 Essential and non-essential amino acids. 4.3 Types of proteins, protein structures (primary, secondary, tertiary and quaternary structures with suitable example), Forces responsible for their stability. 4.5 Biological importance of proteins – Biocatalysts, Carrier proteins Contractile proteins, Hormonal role of proteins.	<b>6 L</b>
<b>5. Enzymes:</b> 5.1 Nomenclature, Types and properties of enzymes. 5.2 Regulatory and non-regulatory enzymes. 5.3 Enzyme inhibition. 5.4 Factors influencing enzyme activity (pH, temperature, substrate concentration). 5.5 Introduction of isoenzymes and cofactor. 5.6 Clinical significance of enzymes - PKU and AKU.	<b>10 L</b>
<b>6. Lipids:</b>	<b>3 L</b>



- 6.1 Introduction.
- 6.2. Fatty acids - Types and nomenclature (saturated and unsaturated).
- 6.3 Clinical significance (obesity, atherosclerosis, myocardial infarction).
- 6.4 Biological importance of lipids.

### Reference books

1. Principles of Biochemistry, 1993, Lehninger A. L. Nelson D. L. & Cox M. M. W. H. Freeman Company, USA.
2. Biochemistry, 1995 5<sup>th</sup> Edn. Zubly G. W, C. Brown Communications USA.
3. Harpers Biochemistry, 1996 26<sup>th</sup> Edn. p Murray R. K., Granner D. K., Mayes P. A. & Rodwell V. W. Prentice Hall international USA.
4. Outline of Biochemistry, 1995 5<sup>th</sup> Edn, Conn E. E., Stumph P. K. Bruening G & Doi R. H. John Wiley & Sons, USA.
5. Principals of Biochemistry, 1993, 1<sup>st</sup> Edn., Pattabhiraman T. N. Gajanan Book publishers and distributors Bangalore.
6. Clinical Biochemistry, 1994, B. P. Godkar, Bhalini Publishing House, Mumbai.
7. Biochemistry, 1995 5<sup>th</sup> Edn., Stryer San Francisco, W. H. Freeman & Co.
8. Biochemistry, 1990, 8<sup>th</sup> Edn., D. Voet & J. Voet, John Willey, New York
9. David T. Plummer: An Introduction to Practical Biochemistry, III<sup>rd</sup> edition (1988)

### Course Title: Genetics

Course code: ZO 354

Credits: 02

### ZO 354 - Genetics

Title & Contents	Number of lectures
<b>1. Introduction to genetics:</b>	<b>3 L</b>
1.1 Classical and Modern concept of Gene, Cistron, Muton, Recon.	
1.2 Mendel's laws of Inheritance.	
<b>2 Exceptions to Mendelian Inheritance:</b>	<b>6 L</b>
2.1 Incomplete dominance.	
2.2 Co-dominance.	
2.3 Multiple alleles: Concept, characteristics and importance of multiple alleles, ABO & Rh - blood group system and its medico legal importance.	
2.4 Lethal alleles.	
<b>3. Gene Mutation:</b>	<b>6 L</b>
3.1 Definition.	
3.2 Types of mutations: spontaneous, induced, somatic, gametic, forward, reverse. Types of point mutation - deletion, insertion, substitution, transversion, transition.	
3.3 Mutagenic agents	
a) UV radiation and ionising radiation.	
b) Base analogs, alkylating and intercalating agents.	

- 4. Sex-determination:** **4 L**
- 4.1 Introduction.
- 4.2 Types of sex determination: -XX-XY, ZZ-ZW, XX-XO and Parthenogenesis, Hypodiploidy.
- 4.3 Gynandromorphism.
- 5. Population Genetics:** **3 L**
- 5.1 Basic Concepts in population genetics: Mendelian population, gene pool, gene / allele, Frequency, chance mating (Panmictic mating).
- 5.2 Hardy Weinberg law and its equilibrium.
- 6. Human Population Genetics:** **4 L**
- 6.1 Karyotype.
- 6.2 Genetic disorders, Structural & numerical alterations of chromosomes (chromosomal aneuploidy - Down, Patau, Edward, Turner and Klinefelter syndromes).
- 7. Sex linked inheritance in human:** **2 L**
- 7.1 Colour – blindness.
- 7.2 Haemophilia.
- 7.3 Hypertrichosis.
- 8. Application of genetics:** **2 L**
- 8.1 Genetic counselling.
- 8.2 Diagnostics & breeding technology.

#### Reference Books -

1. Principles of Genetics, 1997, P. D. Snustad, M. L. Simmons J. B. Jenkins, John Wiley & Sons, USA
2. Genetics, 2014, 9<sup>th</sup> Edn., Verma P. S. and Agarwal V. K., S. Chand and Co., New Delhi.
3. Genetics, 2014, 4<sup>th</sup> Edn. Gupta P. K., Rastogi Publications, Meerut.
4. Principles of Genetics, Gardner, E. J. *et al.* (2006), John Wiley and Sons Inc.
5. Genetics: A Molecular Approach, 3<sup>rd</sup> Edn, Russell, P. J., Benjamin Cummings.
6. Principles of Genetics 8<sup>th</sup> Edition, Gardner, E. J., Simmons, M. J., Snustad, D. P. (2008). John Wiley and Sons Inc.
7. Principles of Genetics. 5<sup>th</sup> Edn. Snustad, D. P. and Simmons, M. J. (2009). John Wiley and Sons Inc.
8. Concepts of Genetics, 10<sup>th</sup> Edn. Benjamin Cummings. Klug, W. S., Cummings, M. R. and Spencer, C. A. (2012).
9. An Introduction to Genetic Analysis, 11<sup>th</sup> Edn. Carroll S. B.; Doebley J., Griffiths, A. J. F. and Wessler, S. R. (2018) W. H. Freeman and Co. Ltd.

**Course Title: Developmental Biology**

**Course code: ZO 355**

**Credits: 02**

### **ZO 355 - Developmental Biology**

<b>Title &amp; Contents</b>	<b>Number of lectures</b>
<b>1. Fundamentals of Developmental Biology:</b>	<b>3 L</b>
1.1 Definition and scope.	
1.2 Concepts in Developmental Biology: Growth, Differentiation, Dedifferentiation, Cell determination, Cell communication, Morphogenesis, Induction and Regeneration.	
<b>2. Theories of Developmental Biology:</b>	<b>3 L</b>
2.1 Preformation.	
2.2 Pangenesis.	
2.3 Epigenesis.	
2.4 Axial gradient.	
2.5 Germplasm.	
<b>3. Gametogenesis:</b>	<b>5 L</b>
3.1 Spermatogenesis & Structure of sperm with respect to human.	
3.2 Oogenesis & Structure of ovum with respect to human.	
3.3 Types of eggs.	
<b>4. Fertilization:</b>	<b>6 L</b>
4.1 Concept and types.	
4.2 Chemotaxis.	
4.3 Sperm penetration: Acrosome reaction, Capacitation & Decapacitation.	
4.4 Activation of ovum: Fertilization cone.	
4.5 Prevention of polyspermy: Fast block & Slow block.	
4.6 Significance of fertilization.	
<b>5. Cleavage and Blastula:</b>	<b>5 L</b>
5.1 Planes and symmetry of cleavage.	
5.2 Types of cleavage.	
5.3 Significance of cleavage.	
5.4 Definition and types of Blastula.	
<b>6. Gastrulation:</b>	<b>3 L</b>
6.1 Definition and Concept.	
6.2 Basic cell movements in gastrulation: Epiboly, Emboly, Convergence, Invagination, Ingression & Involution with reference to frog.	
6.3 Concept of Organizer : Primary, Secondary and Tertiary.	
<b>7. Chick Embryology:</b>	<b>6 L</b>
7.1 Structure of Hen's egg.	

- 7.2 Fertilization and cleavage in Chick.
- 7.3 Formation of primitive endoderm.
- 7.4 Primitive streak development.
- 7.5 Head process and regression of Primitive streak.

**References:**

1. An Introduction to Embryology (2012), 5<sup>th</sup> Edition., Balinsky B. L., Fabian B. C. Brooks Cole Pub. Co., USA
2. Developmental Biology (2013), 10<sup>th</sup> Edn. Gilbert S. F., Sinauer Associates Inc.
3. Developmental Biology: Patterns, Principle and Problems (1982), Saunders J. W., Prentice Hall Coll Div.
4. Principles of Development (2007), 3<sup>rd</sup> edition, Lewis Wolpert, Oxford University Press Publisher

**Course Title: Parasitology****Course code: ZO 356****Credits: 02****ZO 356 - Parasitology****Objectives:**

1. To understand the basic terminologies in parasitology.
2. To understand the concepts of animal association with examples.
3. To understand the morphology and life cycle of common parasites (Protists and Platyhelminthes).
4. To understand the phenomenon of Host-parasite relationship.
5. Explain the importance of arthropod vectors with examples.

**Learning outcomes:**

1. The students will be able to learn about basics and scope of parasitology.
2. The students will be able to learn the types of host and parasite with examples.
3. The students will be able to learn about the morphology, life cycle, pathogenicity and treatment of common parasites (Protists and Platyhelminthes).
4. The students will be able to learn about host -parasite relationships and their effects on host body.
5. The students will be able to learn about the arthropod parasites and their role as vector.

**Title & Contents****Number of lectures****1. Introduction, Scope and Branches of Parasitology:****2 L**

- 1.1. Definition: host, parasite, vector, commensalisms, mutualism and parasitism.
- 1.2. Branches of parasitology.

**2. Types of Parasites and Hosts:****3 L**

- 2.1 Ectoparasites.

- 2.2 Endoparasites and its subtypes.
- 2.3 Types of hosts - Intermediate, definitive, paratenic and reservoir.
- 3. Host - Parasite relationship: 3 L**
- 3.1 Host specificity.
- 3.2 Types of host specificity: structural specificity, physiological specificity and ecological specificity.
- 3.3 Effects of parasite on host.
- 4. Study of Parasitic Protists: 9 L**
- 4.1 *Entamoeba histolytica* - Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment.
- 4.2 *Plasmodium vivax* - Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment.
- 5. Study of Parasitic worms: 9 L**
- 5.1 *Ascaris lumbricoides* - Study of Morphology, Life Cycle, Prevalence.
- 5.2 Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment.
- 5.3 *Taenia solium* (Tapeworm) - Study of Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment.
- 6. Study of Parasitic Arthropoda: 4 L**
- Morphology, pathogenicity and control measures of –
- 6.1 Soft tick.
- 6.2 Head louse.
- 6.3 Rat flea.
- 6.4 Bed bug.

#### Reference Books:

1. Parasitology: K. D. Chatterjee.
2. Parasites: ecology, diseases, and management (2013).
3. Parasitic Helminths: Targets, Screens, Drugs, and Vaccines, 201.
4. Parasitism: The Diversity and Ecology of Animal Parasites (2014) Tim Goater, Timothy M. Goater, Cameron P. and Esch, Gerald W. Cambridge University Press.
5. Principles of Veterinary Parasitology (2016), 1<sup>st</sup> Edn, Dennis E. Jacobs, Mark Fox, Lynda M. Gibbons, Carols Hermosilla, John Wiley & Sons.
6. Veterinary Parasitology (2013), Hany M. Elsheikha, Jon S. Patterson, CRC Press Taylor & Francis Group
7. Textbook of medical parasitology – C. K. Jayaram Panikar.
8. Textbook of medical parasitology – Arora & Arora.
9. Textbook of medical parasitology – S. C. Parija.
10. Veterinary Parasitology, 2013 - (Taylor, M. A.).
11. Encyclopedia of parasitology, 2008.
12. The Biogeography of Host-Parasite Interactions by Serge Morand, Boris R. Kransov, Oxford University Press.
13. Textbook of medical microbiology – Rajesh Bhatia & Itchpujani.

14. Textbook of medical microbiology – Arora & Arora.
15. Biological Control of Parasites, 2012.
16. Biology of Malaria Parasites, 2012.
17. Sherris medical microbiology: Ryan.
18. Medical microbiology: Jawetz Melnick & Adelbergs.
19. Current concepts in parasitology, 2012.
20. Textbook of Parasitology, Ashok Kumar, Discovery Publishing.
21. Introduction to parasitology: With special reference to the parasites of man, A.C. Chandler-  
John Wiley & Sons.
22. A text book of Parasitology – D. P. Karyakarte & A. S. Damle.

**For Practical papers of both V and VI semester, minimum 6 practicals should be conducted from each section, thus a minimum of 12 practicals should be conducted per practical paper. (C) stands for compulsory.**

**Course Title: Zoology Practical Paper I**

**Course code: ZO 357**

**Credits: 02**

**Course Title : Zoology Practical Paper - I**

**Section I: Practicals in Pest Management**

- |  |   |
|--|---|
| 1. To study the plant protection appliances.   | D |
| 2. Studies on beneficial insects. (C)  | D |
| 3. Study of pests and diseases of honeybees. (C)   | D |
| 4. Applications of IPM components in various crops.  | D |
| 5. Separation of the pesticides or plant products by TLC and Column chromatography. - 2 P(C)     | E |
| 6. Detection of pesticides residues in food stuffs. (C)  | E |
| 7. Rearing of pest species (Any 2 species). (C)  | D |
| 8. Study of life cycle of Red cotton bug and Lemon butterfly.                                    | D |
| 9. Study of the detection of damage caused by pests.   | D |
| 10. Plant disease, its intensity & calculation of VI (Virulence Index) of at least two diseases. | D |

**Section II: Practicals in Histology**

- |  |   |
|--|---|
| 1. Study of the different types of tissues with the help of permanent slides – Epithelial tissue, Connective tissue, Muscular tissue and Nervous tissue. | D |
| 2. Study of permanent histological slides of T. S. of skin, V. S. of tooth and C. S. of tongue.  | D |
| 3. Study of permanent histological slides of digestive parts – T. S. of Stomach, T. S. of Duodenum, T. S. of Rectum, C. S. of Liver.                     | D |

- |  |   |
|--|---|
| 4. Study of permanent histological slides of glands - T. S. of Pituitary gland, T. S. of Thyroid gland, T. S. of Adrenal gland, C. S. of Pancreas. | D |
| 5. Study of permanent histological slides of reproductive organs- T. S. of Testis, C. S. of Ovary.   | D |
| 6. Study of human blood smear to observe different types of blood cells. (C)   | E |
| 7. Temporary mounting of tissues of any mammal (freshly dissected or preserved) - Striated Muscle Fibre. (C)                                       | E |
| 8. Temporary mounting of tissues of any mammal (freshly dissected or preserved) - Smooth Muscle Fibre. (C)   | E |

**Course Title: Zoology Practical Paper - II****Course code: ZO 358****Credits: 02****ZO 358 - Zoology Practical Paper - II****Section I: Practicals in Biological Chemistry**

- |   |   |
|---|---|
| 1. To determine the enzyme activity - salivary amylase/ urease/ invertase.  | E |
| 2. To determine specific activity of an enzyme.   | E |
| 3. Detection of carbohydrates (monosaccharides, disaccharides and polysaccharides) with the help of suitable tests. (C) | E |
| 4. Isolation of starch from potato and digestion of starch by salivary amylase. (C)                                     | E |
| 5. Preparation of buffer of desired pH and molarity. (C)  | E |
| 6. Protein estimation by Lowry <i>et al.</i> method. (C)  | E |
| 7. Isolation of Caesin from milk by adjusting iso-electric point. (C)   | E |
| 8. Preparation of Acid, Alkali & it's standardisation.  | E |
| 9. Principle, Working & Measurement of pH of any three samples.   | E |

**Section II: Practicals in Genetics**

- |  |   |
|--|---|
| 1. Study of monohybrid ratio by providing hypothetical data and deducing applicability of Mendelian laws (Two examples). (C)         | D |
| 2. Study of Dihybrid ratio by providing hypothetical data and deducing applicability of Mendelian laws (Two examples). (C)           | D |
| 3. Study of genetic traits in human beings (tongue rolling, widow's peak, ear lobes, colour-blindness and PTC tasters/ non-tasters). | D |

- |   |   |
|---|---|
| 4. Study of blood groups in human (ABO and Rh). (C)   | D |
| 5. Study of Hardy - Weinberg law with suitable recording of genetic traits.   | D |
| 6. Study of human karyotypes and numerical alterations (simulated & theoretical sample data) (Down syndrome, Klinefelter syndrome and Turner syndrome). | D |
| 7. Temporary preparation of polytene chromosomes from suitable material. (C)  | E |
| 8. Study of structural chromosome aberrations (dicentric, ring chromosomes and inversions in polytene chromosomes) from prepared slides / photographs.  | D |
| 9. Study of external characters, life cycle and Rearing of <i>Drosophila</i> . (C)  | D |
| 10. Study of <i>Drosophila</i> mutants.   | D |

**Course Title: Zoology Practical Paper III****Course code: ZO 359****Credits: 02****ZO 359 - Zoology Practical Paper - III****Section I: Practicals in Developmental Biology**

- |   |   |
|---|---|
| 1. Study of ultrastructure of Sperm and Ovum of Mammal.   | D |
| 2. Study of eggs with the help of slide / Photograph / chart / Model (Insect, <i>Amphioxus</i> , Frog and Hen). (C)                 | D |
| 3. Study of cleavage and its types with the help of Slide / Photograph / Chart / Model.   | D |
| 4. Study of blastulae ( <i>Amphioxus</i> , Frog and Hen).   | D |
| 5. Study of gastrulae ( <i>Amphioxus</i> , Frog and Hen).   | D |
| 6. Study of whole mount slides of chick embryology – 24 hrs, 33 hrs and 48 hrs. (C)   | D |
| 7. Study of T. S. and V. S. of chick embryo of Brain & Heart with the help of slide / Photograph / chart / Model – 24 hrs & 33 hrs. | D |
| 8. Temporary preparation of chick embryo. (C)   | E |
| 9. Ex-ovo culture of chick embryo.  | D |

**Section II : Practicals in Parasitology**

- |  |   |
|--|---|
| 1. Study of parasitic association with their example -<br>a) Commensalism.<br>b) Parasitism.   | D |
| 2. To study the life cycle, pathogenecity, diagnosis and treatment of <i>Entamoeba histolytica</i> and <i>Plasmodium vivax</i> through permanent slides or microphotographs.           | D |
| 3. To study the life cycle, pathogenecity, diagnosis and treatment of <i>Ascaris lumbricoides</i> and <i>Taenia solium</i> through specimen, permanent slides or microphotographs. (C) | D |



- |   |   |
|---|---|
| 4. Study of following parasites with its role as vector - Soft tick, <i>Pediculus humanus</i> , <i>Xenopsylla cheopis</i> and <i>Cimex lectularius</i> through permanent slides or photographs. (C) | D |
| 5. Study of effects of parasites on host body.  | D |
| 6. Study of the pathogenecity and control measures of - Tick ( soft tick and hard tick) and Mite ( <i>Sarcoptes scabiei</i> ).  | D |
| 7. Study of parasites from the gut of cockroach. (C)  | E |
| 8. Collection & submission of various parasites. (C)  | E |

**Course Title: Aquarium Management****Course Code: ZO 3510****Credits: 02****ZO 3510: Aquarium Management**

<b>Title &amp; Contents</b>	<b>Number of lectures</b>
<b>1. Introduction to Aquarium Fish Keeping:</b>	<b>4 L</b>
1.1 The potential scope of Aquarium Fish Industry as a Cottage Industry.	
1.2 Exotic and Endemic species of Aquarium Fishes.	
1.3 Nutritional value of fish.	
<b>2. Biology of Aquarium Fishes:</b>	<b>6 L</b>
2.1 Common characters and sexual dimorphism of Aquarium fishes - Guppy, Molly, Sword tail, Gold fish, Angel fish, Blue morph, Anemone fish, Butterfly fish and Fighter fish.	
<b>3. Food and feeding of Aquarium Fishes:</b>	<b>4 L</b>
3.1 Use of live fish feed organisms.	
3.2 Preparation and composition of formulated fish feeds.	
3.3 Overview on types of fish food.	
<b>4. Fish Transportation:</b>	<b>4 L</b>
4.1 Live fish transport: a) Fish handling. b) Fish packing. c) Fish forwarding techniques.	
4.2 Causes of mortality in transport.	
<b>5. Maintenance of Aquarium:</b>	<b>3 L</b>
5.1 General Aquarium Maintenance - budget for setting up an Aquarium.	
5.2 Fish Farm as a Cottage Industry, Rules & regulations of fish rearing.	
5.3 Common diseases of Aquarium fish.	
<b>6. Physico-chemical parameters of water for fish culture:</b>	<b>4 L</b>
6.1 Acidity, Alkalinity, Calcium, Nitrate, Ammonia, Total hardness.	
<b>7. Fish preservation:</b>	<b>2 L</b>
7.1 Fish preservation and processing.	

7.2 Fish preservation techniques.

### 8. Fish breeding:

3 L

8.1 Types of fish breeding -

- a) Natural fish breeding.
- b) Induced fish breeding.

**Course Title: Poultry Management**

**Course Code: ZO 3511**

**Credits: 02**

### ZO – 3511 Poultry Management

#### Objectives:

1. To understand the basics of Poultry Farming and its important.
2. To understand breeding management of broilers and layers of chickens.
3. To understand housing management and equipment of Poultry farming.
4. To understand food, feeding and digestion mechanism of chickens.
5. To understand the poultry diseases and their control.
6. To understand the economic importance of poultry products.

#### Expected Outcome:

1. The students will be able to understand the Poultry farming practices.
2. The students will able to understand the poultry breeding techniques.
3. The students will be able to understand poultry rearing techniques.
4. The students will be able to understand feeding requirement and food ingredients.
5. The students will be able to understand the poultry disease and their pathogens.
6. The students will be able to understand market value of poultry products.

#### Title & Contents

#### Number of lectures

#### 1. Introduction to Poultry Farming:

2 L

- 1.1 Definition of Poultry, Importance of Poultry Farming and Poultry Development in India.
- 1.2 Present and future prospects.

#### 2 Breeding Management:

5 L

- 2.1 Male and female reproductive system of chicken.
- 2.2 Breeds and strains of broilers and layers of chicken.
- 2.3 General aspects of breeding for better egg production and body weight gain.
- 2.4 Selection and culling.
- 2.5 Artificial insemination.

- 3 Housing Management: 5 L**
- 3.1 Establishment of poultry farm.
  - 3.2 Housing and equipment.
  - 3.3 Incubation and hatching of eggs.
  - 3.4 Broiler and layer management.
  - 3.5 Lighting schedule for poultry.
  - 3.6 Transport strategy of Poultry birds.
- 4 Feeding Management: 6 L**
- 4.1 Digestive system and Digestion Mechanism of chicken.
  - 4.2 Feed ingredients.
  - 4.3 Feed processing.
  - 4.4 Formulation of feed viz., Starter, Grower, Layer, Finisher and Breeder ration, Feed conversion ratio (FCR), Nutritional deficiency conditions.
- 5 Health Management: 5 L**
- 5.1 Vaccination schedule for poultry birds.
  - 5.2 Common poultry diseases, i. e. Ranikhet, Marek, Chicken pox, Gumboro, Infectious bronchitis and Chronic Respiratory Disease (CRD).
  - 5.3 Control of internal and external parasites.
- 6 Poultry Products: 4 L**
- 6.1 Preservation and storage of eggs.
  - 6.2 Grading of eggs and AGMARK standard of egg.
  - 6.3 Egg powder.
  - 6.4 Slaughtering and processing of chicken.
  - 6.5 Poultry By Products – Feathers and Poultry Manure.

### Reference Books

1. Commercial Chicken Meat and Egg Production (2007), 5<sup>th</sup> Edn, Bell D. Donald and Weaver D. William Jr., Springer India Pvt. Ltd., Noida.
2. Poultry Science (2015) 3<sup>rd</sup> Edn, Ensminger. M. E., International Book Distribution Co., Lucknow, India.
3. Modern Poultry Farming (2003), 1<sup>st</sup> Edn, Hurd M. Louis, International Book Distributing Company, Lucknow.
4. Handbook of Poultry Production and Management (2007), 2<sup>nd</sup> Edn., Jadhav N. V., and Siddique M. F., Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi.
5. Successful Poultry Management (2007), 2<sup>nd</sup> Edn, Jull A. Morley, Biotech Books, New Delhi.
6. Poultry Husbandry (2008) 2<sup>nd</sup> Edn, Jull A. Morley, J. V. Publishing House, Jodhpur, Rajasthan.
7. Broiler Breeder Production (2001), 1<sup>st</sup> Edn, Leeson. S., and Summers J. D. International Book Distributing Company, Lucknow.
8. Poultry and Ratite Nutrition (2013), 1<sup>st</sup> Edn, Pathak N. N., Narendra Publishing House, New Delhi, India.
9. Simply Poultry Science (2011) 1<sup>st</sup> Edn, Rajini Asha R., Alfa Publications, New Delhi.

10. Poultry Production (2011) 3<sup>rd</sup> Edn, Singh, R. A., Kalyani Publishers, New Delhi.
11. Textbook of Poultry Science (2015) 1<sup>st</sup>Edn, Sreenivasaiah., P. V. Write & Print Publications, New Delhi.
12. Encyclopedia of Broiler Breeder Production: Production, Feeding and Management Techniques (2013) Vol. 1, 2 & 3, Youn Michael, Anmol Publications Pvt. Ltd., New Delhi

*Note: Latest editions of the recommended books may be referred.*

## **SEMESTER - VI**

**Course Title: Medical & Forensic Zoology**

**Course Code: ZO 361**

**Credits: 02**

### **ZO 361 - Medical & Forensic Zoology**

#### **Objectives:**

1. To understand the scope, need and History of Forensic Science.
2. To understand the role of different institutes & allied institutes of Forensic Science.
3. To understand the various branches of Forensic Sciences from Life Sciences.
4. To understand human physiology, post mortal investigations.
5. To understand knowledge of handling different types of evidences and their examinations.

#### **Expected Outcome**

1. The students will be able to understand the basics principles of Medical and Forensic Zoology.
2. The students will able to understand scientific methods in crime detection.
3. The students will be able to understand the advancements in the field of Medical and Forensic Zoology.
4. The students will be able to understand modern tools, techniques and skills in forensic investigations.
5. The students will be able to describe the fundamental principles and functions of forensic science and its significance to human society.

#### **Title & Contents**

#### **Number of lectures**

<b>1. Introduction to medical zoology and its importance :</b>	<b>2 L</b>
<b>2. Medico-legal Autopsy:</b>	<b>6 L</b>
2.1 Death and its Causes- External examination of deceased body – Internal Examination - Determination of time since death and cause of death.	
2.2 Injuries – Classification - Medico-legal aspects of injuries.	
2.3 Post-mortem changes - collection of post-mortem samples and Preservation.	
<b>3. Urine Analysis:</b>	<b>3 L</b>
3.1 Physical characteristics, abnormal constituents, renal failure, renal calculi, dialysis.	

- 4. Non infectious Diseases:** **2 L**  
4.1 Causes, Types, Symptoms, Complications, Diagnosis and Prevention of Diabetes (Type I and II), Hypertension, Hypotension, Obesity, Atherosclerosis, Myocardial Infraction.
- 5. Infectious Diseases:** **2 L**  
5.1 Causes, Types, Symptoms, Complications, Diagnosis and Prevention of Tuberculosis and Hepatitis.
- 6. Introduction to Forensic Zoology:** **3 L**  
6.1 Definition, Scope and Application of Forensic Zoology.  
6.2 Forensic Laboratories in India.  
6.3 Basic Principles of Forensic Science with Examples.
- 7. Forensic Medicine:** **3 L**  
7.1 Introduction to Forensic Medicine: Definitions of Forensic Medicine.  
7.2 Medical Jurisprudence.  
7.3 Medical evidence documentations.
- 8. Forensic Analysis:** **9 L**  
8.1 Examination of Biological Materials: Examination of Hair, Fibres, Diatoms, plants materials, human tissues.  
8.2 Examination of Body Fluid: Blood, Semen and Saliva.  
8.3 Forensic Importance of Insects: Insects of forensic importance - indicators of time of death stages of insect development & comparative decomposition of human body - colonization - Evidence collection of insects – Territorial & Aquatic Insects.  
8.4 DNA Fingerprint Technique and Examination of Biological Traces: Liquid blood, blood stains, & swabs, semen, Seminal stains, tissues, Bones, Hairs, Teeth, Saliva, Skeletal remains.  
8.5 Toxicological Investigations: Poisons – Definition, Forms of Poison – Physical, Chemical & Mechanical state. Introduction with examples of – Neurotoxic Poisons – Cerebral & Spinal, Cardiovascular Poisons, Asphyxiants, Miscellaneous poisons – Pesticides, Pharmaceutical drugs, Petroleum poisons, Food poisons, Radioactive poisons.

### Reference Books

1. Godkar P. B and Godkar D. P, Textbook of Medical Laboratory Technology, II Edition, Bhalani Publications
2. Textbook of Microbiology: R. Ananthanarayan, C. K. Jayaram Panikar, University Press.
3. A textbook of Microbiology: P. Chakraborty
4. Text book of pathology: Robbins & Cotran, Vol. 1 & 2, Tenth Edition, Elsevier Publication.
5. Pathologic basis of disease: M. K. Singh & Vinay Kumar, Vol. 1 & 2, 10<sup>th</sup> edition, Elsevier.
6. Text book of General pathology: Bhende & Deodhare Part I & II.
7. Pathologic basis of Disease: Robbins & Cotran, Vol. 1 & 2, 10<sup>th</sup> edition, Elsevier publications.
8. Essentials of medical pharmacology: K. D. Tripathi, 8<sup>th</sup> edition, Jaypee brothers publishers.
9. Review of pharmacology: K. D. Tripathi, Jaypee brothers publishers.

10. Essentials of medical microbiology: Apurba S. Sastry & Sandhya Bhat, Jaypee brothers.
11. W. G. Eckert and S. H. James, Interpretation of Bloodstain Evidence at Crime Scenes, CRC Press, Boca Raton (1989).
12. The essentials of forensic medicine & toxicology: K. S. Narayan Reddy.
13. A textbook of Clinical pharmacology: Roger H. J., Spector R. G., Trounce J. R., Hodder & Stoughton publishers.
14. Pharmacology & Pharmacotherapeutics : Satoskar R. S., Bhandarkar S. D., Popular Prakashan, Mumbai.
15. The synopsis of forensic medicine & toxicology: K. S. Narayan Reddy.
16. Textbook of pathology: Harsh Mohan.
17. G. T. Duncan and M. I. Tracey, Serology and DNA typing in, Introduction to Forensic Sciences, 2nd Edition, W. G. Eckert (Ed.), CRC Press, Boca Raton (1997).
18. T. Bevel and R. M. Gardner, Blood stain Pattern Analysis, 3rd Edition, CRC Press, Boca Raton (2008).
19. Arti Nigam and Archana Ayyagari, Lab manual in Biochemistry, immunology and biotechnology, Mc Graw Hill Publishing Company Ltd.
20. Fundamentals of Forensic Science, Second Edition, Max M. Houck and Jay A Siegel, Academic Press.
21. Forensic Science, Third Edition, Stuart H James and Jon. J. Nordby.
22. Forensic Science in India and the World, Deepak Ratna and Mohd. Zaidi, Alia Law Agency, Allahabad.
23. Forensic Science in India - A Vision for 21st Century, B. B. Nanda and Dr. R. K. Tewari, Select Publishers.
24. Cell Biology, Sixth Edition International Students Edition, Gerald Karp, Wiley Publications, 2010.
25. Human Physiology: From Cells to Systems, Lauralee Sherwood, Cengage Learning, 2008.
26. Forensic Biology, Richard Li, CRC Press.
27. Human Anatomy Vol. 1,2,3,4, Chaurasia B. D.
28. Text Book of Medical Jurisprudence, Forensic Medicine and Toxicology by Parikh C. K.
29. Forensic Science: An introduction to Scientific and Investigative Techniques by S. H James, J. J. Nordby.
30. Parikh C. K., Medical Jurisprudence.

**Course Title: Animal Physiology**

**Course Code: ZO 362**

**Credits: 02**

### **ZO 362 - Animal Physiology**

#### **Course Objectives:**

1. To acquaint students with the principles and basic facts of Animal Physiology and with some of the laboratory techniques and equipment used in the attainment of physiological data. The importance will be on mammalian.
2. The course will focus on organ-system physiology,
3. Furthermore, emphasis will be placed on nutritive, circulatory, respiratory, excretory, muscular, nervous, reproductive and endocrine physiology. Where appropriate, basic chemical and physical laws will be reviewed in order to enhance and to promote student understanding.

4. The laboratory module of the course is designed to support the topics discussed in theory lecture, as well as to acquaint students with some of the laboratory techniques and equipment used in the gaining of physiological facts.

### Learning Outcomes:

Upon successful completion of this course, the students will be able to describe, identify, and/or explain:

1. The various physiological organ-systems and their importance to the integrative functions of the human body.
2. Understand Concept of energy requirements
3. Various aspects of Digestive physiology.
4. Circulatory system with medical conditions
5. Understand Respiratory mechanism and gases transport.
6. Eliminations of waste materials from the body.
7. Develop understanding in Structure and functions of muscles
8. Understand formation of gametes and function of endocrine glands.

<b>Title &amp; Contents</b>	<b>Number of lectures</b>
<b>1. Nutrition and digestion:</b>	<b>5 L</b>
1.1 Nutritional requirement & balanced diet.	
1.2 Digestion and absorption of carbohydrates, proteins and lipids.	
1.3 Vitamins - outline of fat soluble and water-soluble vitamins; Sources, deficiency and diseases.	
<b>2. Respiration:</b>	<b>5 L</b>
2.1 Mechanism of respiration: Regulation of ventilation in lungs, exchange of gases at respiratory surface.	
2.2 Respiratory pigments in animals: Haemoglobin, Hemocyanin, Hemerythrin, Chlorocruorin.	
2.3 Transport of gases : O <sub>2</sub> and CO <sub>2</sub> transport.	
<b>3. Circulation:</b>	<b>5 L</b>
3.1 Blood: Definition and its constituents, functions of blood.	
3.2 Heart: Structure of human heart, Pace maker, Cardiac Cycle.	
3.3 Origin and conduction of heart beat.	
<b>4. Excretion:</b>	<b>5 L</b>
4.1 Structure of Uriniferous tubule.	
4.2 Mechanism of urine formation.	
4.3 Normal and abnormal constituents of urine, Elementary idea of dialysis.	
<b>5. Muscles:</b>	<b>3 L</b>
5.1 Structure of smooth, skeletal and cardiac muscles.	
5.2 Mechanism of muscle contraction by Sliding filament theory.	
<b>6. Reproduction and Endocrine Glands:</b>	<b>7 L</b>
6.1 Physiology of male reproduction, hormonal control of spermatogenesis.	
6.2 Physiology of female reproduction, hormonal control of menstrual cycle.	

### 6.3 Structure and functions of pituitary, thyroid, parathyroid, pancreas and adrenal glands.

#### Reference Books

1. Textbook of Medical Physiology, Guyton A. C. & Hall J. E., 2006, 11<sup>th</sup> Edition, Hercourt Asia Pvt. Ltd. / W. B. Saunders Company
2. Principles of Anatomy & Physiology, 2006, 11<sup>th</sup> Edition, Tortora G. J. & Grabowski S., John Wiley & sons, Inc.
3. Haematology: De Gruchi.
4. Human physiology, Vol. I & II, 1980, 12<sup>th</sup> Edn. Dr. C. C. Chatterjee, Medical Applied Agency, Kolkata
5. Text book of Animal Physiology, 2008, 2nd Edn. Nagabhusanam, S. V. S. Rana, S. Kalavathy, Oxford University Press, India.
6. Animal Physiology: Adaptation and Environment, 1997, Schmidt-Nielsen, Knut, Cambridge University Press.
7. General and Comparative Physiology, 1983, 3<sup>rd</sup> Edn., Hoar W. S., Prentice Hall, UK.7.
8. Medical Physiology, 2006, Asis Das, Books and Allied Pvt. Ltd., Kolkata.
9. Endocrinology, 2005, Lohar P. S., M J P Publishers, Chennai.
10. Vander, Sherman, Luciano's Human Physiology: The Mechanisms of Body Function, 2003, 9<sup>th</sup> Edn., Eric P. Widmaier, Hershel Raff, Kevin T. Strang, Mc Graw H.
11. Tortora, G. J. and Derrickson, B. H. (2009) Principles of Anatomy and Physiology (12<sup>th</sup> edition) John Wiley and Sons, Inc.
12. Widmaier, E. P., Raff, H. and Strang, K. T. (2008) Vander's Human Physiology (9<sup>th</sup> edition) McGraw Hill.
13. Human Anatomy and Physiology, (1998) Marieb, E. (4th edition) Addison-Wesley.
14. Experimental Physiology, (2007) Kesar, S. and Vashisht, N., Heritage Publishers.

#### Course Title: Molecular Biology

#### Course Code: ZO 363

#### Credits: 02

#### ZO 363 - Molecular Biology

#### Objectives:

1. The course aims to provide students with an introduction of the underlying molecular mechanisms of various biological processes in cells and organisms.
2. To understand the Structure of DNA and RNA, DNA and RNA as genetic material
3. To understand the Central Dogma of Molecular Biology
4. To understand the concept of gene regulation
5. To understand the DNA Damage and Repair
6. The course aims to develop basic understanding of structure-function relationships of nucleic acids and proteins.

#### Learning outcomes:

1. Learner shall get an insight into molecular mechanisms of various biological processes in cells and organisms
2. Learner shall get an insight into the Structure of DNA and RNA, DNA and RNA as genetic material
3. The course shall prepare learner to get insight into the Central Dogma of Molecular Biology



4. Learner shall also understand the concept of gene regulation
5. Learner shall get an insight into the DNA Damage and Repair

<b>Title &amp; Contents</b>	<b>Number of lectures</b>
<b>1. Nucleic Acids and Chromatin:</b>	<b>7 L</b>
1.1 Structure of RNA & DNA.	
1.2 Types of RNA.	
1.3 DNA as genetic material - evidences (Griffith's, Avery <i>et al.</i> , Hershey and Chase experiment), RNA as genetic material - TMV 4.	
1.4 Structure of Chromatin, packaging of DNA, Heterochromatin, Euchromatin.	
<b>2. Central Dogma of Molecular Biology:</b>	<b>15 L</b>
2.1 <b>DNA Replication</b> - Semiconservative (Messelson and Stahl experiment), Basic mechanism of replication in prokaryotes and eukaryotes.	
2.2 <b>Transcription</b> -	
2.2.1 Basic mechanism of transcription in prokaryotes and eukaryotes, RNA polymerase enzyme in prokaryotes.	
2.2.2 RNA modifications and processing (splicing - mRNA, modifications at 3' and 5' end).	
2.3 <b>Translation</b> - Genetic code, properties of genetic code, Basic mechanism of Translation in <i>E. coli</i> and eukaryotic cells.	
<b>3. Lac operon:</b>	<b>1 L</b>
<b>4. DNA repair mechanism:</b>	<b>3 L</b>
Photo repair, dark repair, base excision repair.	
<b>5. Recombinant DNA Technology:</b>	<b>4 L</b>
Introduction, restriction enzymes, cloning vector, PCR (polymerase chain reaction), DNA finger printing.	

#### Reference Book:

1. Molecular biology of cell, 3<sup>rd</sup> and 4th edition, Albert's B. D. Lewis J. Raff M. Roberts K. and Watson.
2. Gene, Vol. V, VI, VII, VIII and IX, Lewin B., Oxford University Press, Oxford.
3. Molecular biology of the Gene, 1993, Watson J. Hopkins, Roberts Steitz & Weiner, Benjamin Cummings.
4. Text Book of Molecular Biology, 1994, K. Sivrama Sastry G. Padmanabhan and C. Subramanyam : MacMillan, India.
5. Cell and Molecular biology, 1996, G. Karp, John Willey & Sons, U.S.A.

6. Principles of Genetics, 1997, P. D. Snustad, M. L. Smmons, J. B. & Jenkins, John Willey & Sons, U.S.A.
7. Cell and Molecular biology, De Robertis and De Robertis, 8<sup>th</sup> & 9<sup>th</sup> Edition, Saunders Publications.

**Course Title: Entomology**

**Course Code: ZO 364**

**Credits: 02**

### ZO 364 - Entomology

**Objectives:**

1. To understand the scope of Entomology and general characters of Insects.
2. To study the morphology and anatomy of Insects.
3. To learn the concept of social organization in Insects.
4. To understand metamorphosis in Insects.
5. To study the economically important insects and Pest management of harmful insects.

**Course outcomes:**

At the end of this course, Students will -

1. Understand basic concepts in Entomology and its scope.
2. Learn morphology and anatomy of Insects.
3. Understand the concept of social organization in Insects.
4. Understand the development process of Insects.
5. Identify disease causing insect vectors.
6. Will be able to design and implement pest controlling methods against pests.

**Title & Contents**

**Number of lectures**

- |  |            |
|--|------------|
| <b>1. Fundamentals of Entomology:</b>  | <b>2 L</b> |
| 1.1 Definition and scope of Entomology.  |            |
| 1.2 General Classification of Insects.   |            |
| 1.3 General Characters of Insects.   |            |
| <b>2. Insect Morphology:</b>   | <b>7 L</b> |
| 2.1 Insect Integument and its derivatives.   |            |
| 2.2 Insect Head, Head Orientations, Head articulations, Insect antennae and Mouth parts.   |            |
| 2.3 Insect Thorax, Insect Wing and modifications, Insect Leg and Modifications – a) Cursorial – Cockroach, b) Fossorial – Mole cricket, c) Saltorial – Grasshopper, d) Raptorial – Praying mantis, e) Pollen basket – Honey bee. |            |
| 2.4 Insect Abdomen, Genital and Pre – genital appendages of Grasshopper.   |            |

- 3. Insect Anatomy (Grasshopper):** **4 L**  
3.1 Digestive System.  
3.2 Circulatory System.  
3.3 Nervous System.  
3.4 Respiratory System.  
3.5 Reproductive System.
- 4. Insect Ecology:** **3 L**  
4.1 Definition of Insect Ecology.  
4.2 Abiotic Factors (Photoperiod, Temperature and Humidity) and Biotic Factors (Food, Foraging and Nesting).  
4.3 Mimicry in insects with suitable examples.
- 5. Insect Metamorphosis:** **2 L**  
5.1 Definition.  
5.2 Types and examples of Metamorphosis.
- 6. Insects as social groups:** **6 L**  
6.1 Definition & significance of Eusociality, Intraspecific and Interspecific relationships among insects.  
6.2 Social organization in Wasps and Termites.
- 7. Economic Importance of Insects:** **3 L**  
7.1 Insects in Research.  
7.2 Insects in Medicines and Cosmetics.  
7.3 Insects as Vectors.  
7.4 Insects as food.

### References

1. Social Insects: Their Origin and Evolution, 2006, W. M. Wheeler, Discovery Publishing House, Delhi.
2. Lives of Social Insects, 1968, P. P. Larson, M. W. Larson, World Pub. Co.
3. Modern Entomology, 2<sup>nd</sup> edition - By D. B. Tembhare, Himalaya Publication House, Bombay.
4. Principles of Insect Morphology - By R. E. Snodgrass, Tata Mc-Graw Hill Bombay.
5. The Insect: Structure & Function - By R. F. Chapman, E. L. B. S., & E. U. P. London.
6. General Entomology, 2<sup>nd</sup> edition - By M. S. Mani Oxford & IBH Publishing Company, New Delhi.
7. A Text book of Entomology - By H. H. Ross, John Wiley and Sons, Ins. New York.
8. An Introduction to Entomology - By J. H. Comstock, Ithaca, New York.
9. General & Applied Entomology - By K. K. Nayar, T. N. Anathakrishnan & B.V. David, Tata McGraw-Hill, New Delhi.

**Course Title: Techniques in Biology****Course Code: ZO 365****Credits: 02****ZO 365 - Techniques in Biology**

<b>Title &amp; Contents</b>	<b>Number of lectures</b>
<b>1. Microscopy:</b>	<b>3 L</b>
1.1 Definitions - Resolving Power, Limit of Resolution and Magnification, Numerical Aperture.	
1.2 Basic principle of microscopes - Light, Fluorescence, Phase Contrast, Stereo Microscope, SEM and TEM.	
<b>2. Microtomy: Tissue fixation and Processing</b>	<b>8 L</b>
2.1 Methods of tissue fixation: Chemical fixation and physical fixation.	
2.2 Procurement of tissue and importance of fixation of tissues.	
2.3 Dehydration, clearing, impregnation, embedding and block making.	
2.4 Types of microtomes.	
2.5 Section cutting: steps and precautions, common faults in section cutting, reasons & remedies.	
2.6 Mounting and spreading of ribbons.	
2.7 General procedure for staining of sections.	
2.8 Demonstration of Nucleic acid (Feulgen Reaction).	
<b>3. Haematological Techniques:</b>	<b>2 L</b>
3.1 Total count of RBCs, WBCs and Differential count of WBCs and their significance.	
3.2 Bleeding time, clotting time and their significance.	
<b>4. Immunological Techniques:</b>	<b>3 L</b>
4.1 Antigen-Antibody Interactions – Immunodiffusion.	
4.2 Principle & Working of ELISA.	
4.3 Raising Monoclonal Antibodies.	
4.4 Application of Immunological techniques in disease diagnosis.	
<b>5. Types of PCR &amp; DNA Barcoding :</b>	<b>2 L</b>
<b>6. Methods in Biodiversity:</b>	<b>4 L</b>
6.1 Introduction to sampling and sample size.	
6.2 Biodiversity Indices - Species richness, Simpson Diversity Index, Shannon Diversity Index.	
6.3 Measuring Biodiversity- Quadrat sampling, Transect sampling, Insect survey - Active (sweep netting, aquatic nets) and Passive methodology (Pit fall traps, Light traps).	
<b>7. Instruments in Field Biology:</b>	<b>3 L</b>
7.1 Binoculars, GPS, Basic digital camera techniques: Camera lens - prime	

and kit lens, Aperture mode, Shutter mode, Megapixels, Telephoto lens, macro lens.

7.2 Adapters for camera and microscopes, Mobile's camera.

## 8. Laboratory techniques:

3 L

8.1 Microphotographic techniques - CCD and CMOS camera, digital camera.

8.2 Software for image analysis - Image J and GIMP.

## References:

1. Welch, P. S. 1948. *Limnological Methods*. Blakiston Philadelphia. 381 pp.
2. Wetzel, R. G. 1983. *Limnology*. 2nd Ed. Saunders Coll. Philadelphia.
3. Wilson, E. O. (1992). *The Diversity of Life*. Cambridge, Mass, Belknap Press of Harvard University Press.
4. Krebs C. J., 2009. *Ecology*. Benjamin-Cummings Publishing Company or Pearson International Edition
5. Eugene P. Odum and Gary W. Barrett. *Fundamentals of Ecology Brooks / Cole*; 5<sup>th</sup> Revised edition.
6. Suzanne Bell, Keith Morris. *An Introduction to Microscopy*. CRC press.
7. Kato, M. *The Biology of Biodiversity*. Springer.
8. Robert Smith and Thomas M. Smith *Ecology and Field Biology*.
9. Bikram Grewal *et al.*, *A Photographic Field Guide to the Birds of India, Pakistan, Nepal, Bhutan, Sri Lanka, and Bangladesh*. Princeton University Press.

**Course Title: Evolutionary Biology**

**Course Code: ZO 366**

**Credits: 02**

### ZO 366 - Evolutionary Biology

## Objectives:

1. To provide comprehensive overview of Concept of Evolution.
2. To explain Origin of Life especially Prokaryotes as well as Eukaryotes in detail.
3. To explore salient features of various theories of evolution comprising of Lamarckism, Darwinism and Neo-Darwinism.
4. To impart detailed understanding of Analogy, Homology, Paleontological Evidences, Embryological Evidences and Molecular Phylogeny.
5. To provide adequate information about Geological Time Scale and Neutral Theory of Molecular Evolution.
6. To develop comprehensive knowledge regarding various Sources of Variations and their role in evolution.
7. To give detailed explanation of key concepts of Population Genetics in terms of Hardy-Weinberg Law, Genetic Drift and Types of Natural Selection.
8. To provide adequate knowledge about Micro-evolutionary changes, Speciation and Adaptive Radiation.
9. To give detailed outline of Extinctions and its types.
10. To impart descriptive knowledge regarding Origin and Evolution of Man.

11. To provide glimpse of Phylogenetic Trees and highlight their construction along with interpretation.

### Learning outcomes

After completing the course, the student should be able to

1. Students will be able to learn most of the essential aspects of Evolutionary Biology in detail which will help them in acquiring better understanding regarding the subject.
2. Explain important processes, principles and concepts and critically evaluate theories and empirical research within evolutionary biology
3. Apply evolutionary theory and concepts to address empirical and theoretical questions in evolutionary biology.
4. Independently investigate evolutionary questions using literature and analyses of empirical data.
5. Communicate the principles, theories, problems and research results associated with questions that lie within the evolutionary framework to students

<b>Title &amp; Contents</b>	<b>Number of lectures</b>
<b>1. Introduction:</b>	<b>4 L</b>
1.1 Concept of Evolution.	
1.2 Origin of life.	
1.3 Origin of eukaryotic cell (Origin of mitochondria, plastids & symbionts).	
<b>2. Evidences of Evolution:</b>	<b>5 L</b>
2.1 Analogy and Homology.	
2.2 Embryological Evidences of Evolution.	
2.3 Evolutionary & Paleontological Evidences.	
<b>3. Historical Review of Evolutionary Concept:</b>	<b>3 L</b>
3.1 Theories of Evolution.	
3.2 Lamarckism.	
3.3 Darwinism and Neo Darwinism.	
3.4 Mutation Theory.	
3.5 Modern Synthetic theory.	
<b>4. Sources of Variations:</b>	<b>4 L</b>
4.1 Variation and Mutations.	
<b>5. Isolation</b>	<b>5 L</b>
<b>6. Speciation:</b>	<b>4 L</b>
6.1 Types of speciation (Allopatric & Sympatric).	
6.2 Mechanism of speciation.	
6.3 Patterns of speciation.	
6.4 Factors influencing speciation.	

<b>7 Population Genetics:</b>	<b>2 L</b>
7.1 Hardy-Weinberg Law & Genetic Drift.	
7.2 Types of Natural Selection.	
<b>8 Origin of Man:</b>	<b>4 L</b>
8.1 Evolution of Man (Evolution of anthropoids including man) - Kenyanthropus to <i>Homo sapiens</i> .	
<b>9 Zoogeographical Realms With reference to fauna:</b>	<b>2 L</b>
<b>10 Extinctions:</b>	<b>2 L</b>
10.1 Extinction - An Overview.	

### Reference Books

1. Mark Ridley. Evolution. 3<sup>rd</sup> Edition. Blackwell Publishing. (2004).
2. Mathur, Tomar, Singh. Evolution and Behaviour. Rastogi Publication, Merrut.
3. Mohan P. Arora. Evolutionary Biology, Himalaya Publishing House, Bombay.
4. P. S. Vermin and V. K. Agarwal. Cell Biology, Genetics, Molecular Biology, Evolution and Ecology, Revised Edition. S. Chand Publication (2004).
5. Strickberger. Evolution. Prentic Hall. (2002).
6. Theodore H., Jr Eaton. Evolution. 1<sup>st</sup> Edition. W. W. Norton Publication. (1970).
7. Organic Evolution, Richard Swann Lull, Light & Life Publishers.
8. Introductions to Evolution, Paul Amos Moody, Kalyani Publishers, New Delhi.
9. Organic Evolution, 1991 T.S. Gopal krishanan, Itta Sambashivarab Publ. House.
10. Evolutionary Biology, 1990, Mohan P. Arora, Himalaya Publi. House, Delhi.
11. Evolution, 1968, E. O. Dodson, Reinhold Publ. Crop., New York.
12. The major features of evolution, 1953, Simpson G. G. Columbia, New York.
13. The origin of species, 1959, Charles Darwin, New American Library, New York.

### Course Title: Environmental Impact Assessment

Course Code: ZO 3610

Credits: 02

### ZO 3610 - Environmental Impact Assessment

<b>Title &amp; Contents</b>	<b>Number of lectures</b>
<b>1. Environment:</b>	<b>2 L</b>
1.1 Definition.	
1.2 Divisions.	
1.3 Importance.	
<b>2. Pollution:</b>	<b>3 L</b>
2.1 Definition and types.	
2.2 Impact on wildlife, natural resources, development.	
<b>3. Sustainable development:</b>	<b>2 L</b>

- 3.1 Definition and need.
- 3.2 Exploitation of natural resources.
- 3.3 Concept of carrying capacity.
- 3.4 Three pillars of Sustainability.
- 3.5 UN 17 Sustainable Development Goals (SDGs).
- 4. Overview of Environmental Protection acts: 5 L**
  - 4.1 The Air (Prevention and Control of Pollution) Act 1981.
  - 4.2 The Water (Prevention and Control of Pollution) Act 1974.
  - 4.3 The Environment Protection Act 1986.
  - 4.4 The National Green Tribunal Act 2010.
  - 4.5 Biological Diversity Act 2002.
- 5. Environmental Impact Assessment (EIA): 5 L**
  - 5.1 Definition, need and importance of EIA.
  - 5.2 EIA notification 2006 - key elements, History and Evolution of EIA.
  - 5.3 Categories of Industries / establishments requiring EIA, Types of EIA - strategic EIA, regional EIA, sectoral EIA, project level EIA and life cycle assessment.
  - 5.4 Rapid and comprehensive EIA.
- 6. EIA Process: 5 L**
  - 6.1 Screening, Scoping and consideration of alternatives.
  - 6.2 Baseline data collection, Impact analysis, Mitigation, Reporting, Public hearing.
  - 6.3 Review of EIA.
  - 6.4 Decision-making, monitoring clearance conditions.
- 7. Stakeholders in EIA process: 3 L**
  - 7.1 Project proponent, Environmental consultant.
  - 7.2 CPCB / MPCB.
  - 7.3 Public, EIA agency (IAA).
- 8. Overview of Scheme for Accreditation of EIA Consultant Organizations (NABET / QCI): 5 L**
  - 8.1 Eligibility and benefits.
  - 8.2 EIA coordinator (EC), Functional area experts (FAEs).
  - 8.3 Functional area associate (FAA) and team members: Role, educational qualification, experience and functions.

**References:**

1. Glasson, J., Therivel, R. (2019) Introduction to Environmental Impact Assessment. Routledge. London.
2. Judith, P. 1999. Handbook of Environmental Impact Assessment. Blackwell Science.
3. Marriott, B. 1997. Environmental Impact Assessment: A Practical Guide. McGraw-Hill, New York, USA.



**Course Title: Project**  
**Course Code: ZO 3611**  
**Credits: 02**

### ZO 3611 - Project

Students have to complete the research project in the stipulated time and present the dissertation at the time of the examination in a proper format. Students should be encouraged to take up laboratory work, hands-on practical investigation and design experimental setup. Field work to be carried out under proper supervision and permissions from the concerned authorities.

Possible key aspects of the project work -

1. Planning the project
2. Selecting a suitable title
3. Significance of the work
4. Hypothesis, Objectives
5. Reviewing the available literature
6. Methodology to be used
7. Outcomes of the Project work
8. Conclusion and Discussion
9. Future plans

**Students should be made aware of plagiarism and research ethics.**

**Course Title: Zoology Practical Paper - I**  
**Course Code: ZO 367**  
**Credits: 02**

### ZO 367 - Zoology Practical Paper - I

#### Section I: Practicals in Medical & Forensic Zoology

- |   |       |
|---|-------|
| 1. To carry out routine analysis of given urine sample for -                                    | 2 (E) |
| i. Physical Properties: Volume, Colour, pH, Turbidity, Specific gravity.                        |       |
| ii. Chemical Properties: Sugars, Protein, Bile salts & bile pigments, Ketone bodies, Blood. (C) |       |
| 2. Determination of serum urea.   | E     |
| 3. Determination of serum uric acid.  | E     |
| 4. Determination of serum Calcium. (C)  | E     |
| 5. To examine human hair for cortex and medulla. (C)  | E     |
| 6. To examine hair morphology and determine the species to which the hair belongs.              | E     |
| 7. To prepare slides of scale pattern of human hair. (C)  | E     |
| 8. To Visit a Forensic Laboratory and submission of the report.                                 | E     |
| 9. To Identify and differentiate various types of Finger prints. (C)                            | E     |

10. To prepare a case report on forensic entomology with respect to insect's succession and its relationship to determine time since death. E

### Section II: Practicals in Animal Physiology

1. Haemoglobin estimation using Sahli's haemoglobinometer. (C) E
2. Preparation of haemin and haemochromogen crystals. (C) E
3. To estimate the blood glucose level from given sample. (C) E
4. Estimation of bleeding and clotting time. (C) E
5. Study of disorders caused by endocrine glands with the help of photographs. D
6. Detection of blood groups in human being. E
7. Differential count of blood. E
8. Estimation of haemoglobin percentage with the help of haemometer. E
9. Qualitative detection of nitrogenous waste products (Ammonia, urea, uric acid) in given sample. (C) E
10. Demonstration of kymograph unit, Respirometer through available resources. D
11. Measurement of lung capacity. E

### Course Title: Zoology Practical Paper - II

Course Code: ZO 368

Credits: 02

### ZO 368 - Zoology Practical Paper - II

#### Section I: Practicals in Molecular Biology

1. Lab safety techniques & sterilisation. D
2. Preparation of DNA paper model and study its characteristics. E
3. Staining of DNA and RNA by methyl green – pyronin. (C) E
4. Estimation of DNA by Diphenylamine method. (C) E
5. Estimation of RNA by Bial's Orcinol method. E
6. Isolation of DNA from Bacteria / liver / Onion. (C) – 2 P E
7. Absorption spectra of DNA isolated from Bacteria / Liver / Onion. (C) E
8. Principle & application of Spectrophotometer & PCR. D

#### Section II - Practicals in Entomology

1. Study of external characters of any Insect (Grasshopper / Cockroach / Plant bug). E
2. Study of Insect Head, its articulations and types of mouthparts and their modifications. D
3. Study of Insect Legs, wing and their modifications. D
4. Study of Digestive system of any locally available insect pest. (C) E

- |  |   |
|--|---|
| 5. Study of Reproductive system of any locally available insect pest. (C)  | E |
| 6. Study of Social organization in Termites and Honey Bees.  | D |
| 7. Study of Insect egg, larva, pupa and their types.   | D |
| 8. Study of Insect vectors - Mosquito, House fly, Cockroaches, Bugs.   | D |
| 9. Temporary mountings of Mouthparts, Antennae,<br>Legs and Wings of any locally available insect pest. (C)                    | E |
| 10. Study of Preservation of Insect pest by using spreading techniques & submission<br>of any five insect pests / vectors. (C) | E |
| 11. Compulsory field visit to a Wildlife Sanctuary / National Park / Tiger Reserve /<br>to study the Insect diversity – 2P.    | E |

**Course Title: Zoology Practical Paper – III****Course Code: ZO 369****Credits: 02****ZO 369 - Zoology Practical Paper III****Section I: Practicals of Techniques in Biology**

- |  |   |
|--|---|
| 1. Compound and Stereo microscope: Components, usage and maintenance.  | D |
| 2. To observe different kind of cells under compound microscope and its measurement<br>using micrometer scale or by image analysis software (Ex. Image J). (C) | E |
| 3. Tissue collection, fixation & Block preparation. (C)  | E |
| 4. Sectioning, staining & mounting. Submission of any three permanent<br>slides from three different organs. (C)   | E |
| 5. To study population density and percentage frequency of different animal /<br>insect species of a given area.   | D |
| 6. Calculating the different alpha and beta biodiversity indices of different<br>animal /insect species of a given area.                                       | D |
| 7. Survey for insects using pit fall trap and light traps in your college<br>campus / agriculture field.   | E |
| 8. Use of photography (Mobile camera / DSLR) in scientific documentation<br>of at least 5 species of insects / birds/ mammals.                                 | D |
| 9. Visit to a water body / forest to study faunal biodiversity using field equipment – (C) 2P  | E |
| 10. Study of Principle & working of PCR & DNA Barcoding – 2 P  | E |

**Section II - Practicals in Evolutionary Biology**

1. Study of morphological similarities and differences between man and ape (C) D
2. Study of types of fossils with the help of specimens/ charts/ photos (C) D
3. Study of animal adaptations in: Turtle, Draco, Exocoetus, Bat and Parrot (C) D
4. Study of evidences of evolution- embryological, paleontological, connecting links, morphology and comparative anatomy. (C) E
5. Study of successive stages of evolution of man : a) Australopithecus b) *Homo erectus* c) *Homo neanderthalis* d) Cro-Magnon man e) *Homo sapiens*. (C) D
6. To record Zoogeographical distribution of animals to respective zoogeographical Realms on the world map (Lung fishes, marsupials, flightless birds, Camel, Elephant, Ostrich etc.). (C) E



# Savitribai Phule Pune University

*(Formerly University of Pune)*

## Three Year B.Sc. Degree Program in Physics (Faculty of Science & Technology)

**T.Y.B.Sc. (Physics)**

**Choice Based Credit System**

**To be implemented from Academic Year 2021-2022**

**Salient Features of Revised Syllabi in Physics**

As far as possible to promote:

**1) Physics Education through Master Texts:**

It helps in understanding the theoretical and mathematical development of the subject and to create interest in the subject.

**2) Physics Education through Experimentation:**

It helps in general to improve scientific attitude. So emphasis is given on the development of experimental skills, data analysis, calculations, and also on the limitations of the experimental method and data and, results obtained.

**3) Physics Education through Problem Solving:** It helps in understanding the concepts of physics. It underline the strength of equations, formulae, graphs, mathematical tools to tackle the problems. So accordingly, we have introduced compulsory problem part in the question paper.

**4) Physics Education through History and Philosophy:**

It helps in understanding the conceptual development of the subject and thereby increase the interest in the subject. A topic on this is introduced in the Physics Course.

**5) Physics Education through Awareness of Misconceptions:**

It improves the scientific awareness among the students. A discussion on different subjects are encouraged.

**6) Physics Education through Proto-research:**

It creates interest in the subject and improves technological aspect. Accordingly, mini projects, hands-on activities, projects, models and demonstrations etc. is included in the syllabi.

**7) Physics Education through Qualitative Overview:**

It creates interest in the subject to continue to work in the field of science in general and physics in particular. Accordingly future directions and frontiers of the subject are included in the syllabi.

**8) Structure of Question paper:**

Existing structure shall continue.

**9) ATKT Rules:**

Existing rules shall apply.

10) Structure of the Course:

Semester	Course Type	Course Code	Course Name	Credit	
V	Discipline Specific Elective Course	PHY-351	Mathematical Methods in Physics-II	2	
		PHY-352	Electrodynamics	2	
		PHY-353	Classical Mechanics	2	
		PHY-354	Atomic and Molecular Physics	2	
		PHY-355	Computational Physics	2	
		<b>PHY-356: Elective-I (Select any One)</b>			2
		PHY-356(A)	Astronomy and Astrophysics-I		
		PHY-356(B)	Elements of Materials Science		
		PHY-356(C)	Biophysics		
		PHY-356(D)	Renewable Energy Sources-I		
		PHY-356(E)	Applied Optics		
		PHY-356(F)	C# programming		
		PHY-357	Physics Laboratory-3A	2	
	PHY-358	Physics Laboratory-3B	2		
	PHY-359	Project-I	2		
	Skill Enhancement Course	<b>PHY-3510: Skill Enhancement Course-I (Select any One)</b>			2
		PHY-3510(G)	Python Programming		
		PHY-3510(H)	Energy studies		
		PHY-3510(I)	Introduction to Arduino		
PHY-3510(J)		Sensors and Transducer			
<b>PHY- 3511: Skill Enhancement Course-II (Select any One)</b>			2		
PHY-3511(K)		Physics Workshop Skill			
PHY-3511(L)		Biomedical Instrumentation			
PHY-3511(M)		Non-destructive Testing Techniques			
PHY- 3511(N)	Acoustics Applications				
VI	Discipline Specific Elective Course	PHY-361	Solid State Physics	2	
		PHY-362	Quantum Mechanics	2	
		PHY-363	Thermodynamics and Statistical Physics	2	
		PHY-364	Nuclear Physics	2	
		PHY-365	(A) Electronics-II <b>OR</b> (B) Advanced Electronics	2	

		<b>PHY-366: Elective-II (Select any One)</b>		2	
		PHY-366(O)	Medical Electronics		
		PHY-366(P)	Physics of Nanomaterials		
		PHY-366(Q)	Microcontrollers		
		PHY-366(R)	Lasers		
		PHY-366(S)	Astronomy and Astrophysics-II		
		PHY-366(T)	Renewable Energy Sources-II		
		PHY-367	Physics Laboratory-4A		2
		PHY-368	Physics Laboratory-4B		2
	PHY-369	Project-II	2		
	Skill Enhancement Course	<b>PHY-3610: Skill Enhancement Course-III (Select any One)</b>		2	
		PHY-3610(U)	Scientific Data Analysis using Python		
		PHY-3610(V)	Solar PV System: Installation, Repairing and Maintenance		
		PHY-3610(W)	Applications of Internet of things (IOT)		
		PHY-3610(X)	Calibration Techniques		
		<b>PHY- 3611: Skill Enhancement Course-IV (Select any One)</b>		2	
		PHY- 3611(Y)	Microcontrollers		
		PHY- 3611(Z)	Instrumentation for Agriculture		
		PHY- 3611(AA)	Radiation Physics		
PHY- 3611(AB)		Photography			



# Semester-V

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-351: Mathematical Methods in Physics-II**

**Lectures: 36**

**(Credits-02)**

**1: Curvilinear Co-ordinates**

**(10L)**

Review of Cartesian, spherical and cylindrical co-ordinate, transformation equation, General Curvilinear co-ordinate system: Co-ordinate surface, co-ordinate lines, length, surfaces and volume elements in curvilinear co-ordinate system.

Orthogonal curvilinear co-ordinate system, expressions for gradient, divergence, Laplacian, and curl, special case for gradient, divergence and curl in Cartesian, spherical polar and cylindrical co-ordinate system, Problems.

**2: The Special Theory of Relativity**

**(10L)**

Introduction and applications, Newtonian relativity, Galilean transformation equation, Michelson-Morley experiment, Postulates of special theory of relativity, Lorentz transformations, Kinematic effects of Lorentz transformation, Length contraction, Proper time, Problems.

**3: Partial Differential Equations**

**(8L)**

Introduction and applications of Partial differential equations (PDE), General methods for solving second order PDE, Method of separation of variables in Cartesian, Spherical polar and cylindrical co-ordinate system (two dimensional Laplace's equation, one dimensional Wave equation), Singular points ( $x = x_0$ ), Solution of differential equation-Statement of Fuch's theorem, Frobenius method of series solution.

**4: Special Functions**

**(8L)**

Introduction, generating function for Legendre Polynomials:  $P_n(x)$ , Properties of Legendre Polynomials, Generating function for Hermite Polynomials:  $H_n(x)$ , Properties of Hermite Polynomials, Bessel function of first kind:  $J_n(x)$ , Properties of Bessel function of first kind, Applications of Special Functions in Physics, Problems.

**Reference books:**

1. Mathematical methods for physicists, Arfken and Weber, Academic press Newyork, 7<sup>th</sup> Edition.
2. Mathematical physics, Rajput, Pragati prakashan-1997.
3. Mathematical methods in the physical sciences – Marry L. Boas, John Willy & Sons publication, 3<sup>rd</sup> Edition-2005.
4. Introduction to special relativity, Robert Resnick, John Wiley & Sons, Inc.-1968.
5. Mathematical physics, B. D. Gupta, Vikas publishing house Pvt. Ltd., 4<sup>th</sup> edition-2010.
6. Mathematical physics, H. K. Dass, Dr. Rama Varma, S. Chand & Company Pvt. Ltd., 7<sup>th</sup> Edition-2014
7. The Special Theory of Relativity: A Mathematical Approach-Farook Rahaman, Springer Publication -2014.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-352: Electrodynamics**

**Lectures: 36**

**(Credits-02)**

**1: Electrostatics**

**(12 L)**

- a. Revision of Coulomb's law, Gauss law, Electric field, Electrostatic Potential.
- b. Potential energy of system of charges.
- c. Statement of Poisson's and Laplace's equation, Boundary Value problems in electrostatics- Solution of Laplace equation in Cartesian system, Boundary conditions.
- d. Polarization **P**, Electric displacement **D**, Electric susceptibility and dielectric constant, bound volume and surface charge densities.
- e. Electric field at an exterior and interior point of dielectric.

**2: Magnetostatics**

**(12 L)**

- a. Concepts of magnetic induction, magnetic flux and magnetic field.
- b. Magnetic induction due to straight current carrying conductor, magnetization of matter, relationship between **B**, **H** and **M**.
- c. Boundary conditions at the interface of two magnetic media (Normal and tangential components).
- d. Biot-Savart's law, Ampere's force law, Magnetic force between two current carrying loops, Ampere's circuital law.
- e. Equation of continuity, Magnetic vector potential **A**, Magnetic susceptibility and permeability.

**3: Electrodynamics**

**(12 L)**

- a. Day to day applications of Electrodynamics.
- b. Concept of electromagnetic induction, Faradays law of induction, Lenz's law, displacement current, generalization of Amperes' law.
- c. Maxwell's equations (Differential and Integral form) and their physical significance.
- d. Polarization, reflection and refraction of electromagnetic waves through media.
- e. Wave equation and plane waves in free space.
- f. Poynting theorem and Poynting vector.

**Reference Books:**

1. Introduction to Electrodynamics; D. J. Griffith; Cambridge India; Fourth edition (2020)
2. Classical Electrodynamics; J. D. Jackson; Wiley; Third edition (2007)
3. Introduction to Electrodynamics; A. Z. Capri, Panat P. V.; Alpha science international ltd; Illustrated edition(2002)
4. Foundations of electromagnetic theory; Reitz, Milford and Christy; Pearson education India; Fourth edition (2010)
5. Electrodynamics; Gupta, Kumar, Singh; Pragati Prakashan; Ninteenth edition (2011)
6. Electromagnetic field and waves; Paul-Lorrain, D. R. Corson; W.H. Freeman & co. Ltd; Second edition (1970)
7. Electricity and magnetism; Murugesan; S. Chand; (2020)
8. Electromagnetic theory and electrodynamics; Satya Prakash; Kedar Nath Ram Nath; (2020)

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-353: Classical Mechanics**

**Lectures: 36**

**(Credits-02)**

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**1: Motion of Particles**

**(8L)**

- a. Charged Particles: Motion of a charged particle in constant electric, magnetic and electromagnetic field,
- b. System of particles: Concept of Centre of mass, Conservation of linear momentum, angular momentum, energy of system of particles.(statements only)
- c. Day to day applications of Classical mechanics,
- d. Problems

**2: Central force Field**

**(8L)**

- a. Central force Field: Definition and Properties of central force field. Reduction of two body problem to an equivalent one body problem
- b. Motion in central force field,
- c. Kepler's laws of planetary motion and their proof
- d. Artificial satellite and its orbit
- e. Problems.

**3: Scattering of particles**

**(10L)**

- a. Elastic and inelastic scattering: Definition and properties,
- b. Elastic scattering - Laboratory and center of mass system.
- c. Scattering: Scattering angles in laboratory and center of mass system.
- d. Differential cross-section, impact Parameter, total cross-section in brief.
- e. Problems

**4: Langrangian and Hamiltonian formulation**

**(10L)**

- a. Limitations of Newton's Law of Motion,
- b. Constraints and Their Classification, Example of Constrains, degrees of freedom, generalized coordinate, configuration space,
- c. Principle of Virtual work done,
- d. D'Almeberts Principle of virtual work,
- e. Langrangian equation from D' Alembert's principle, cyclic coordinates,
- f. Phase space, Hamiltonian's equations
- g. Problems

**Reference books:**

1. **Classical Mechanics**, J.C. Upadhyaya, Himalaya publishing Houses, 2<sup>nd</sup> Edition of 2005.
2. **Introduction to Classical Mechanics**, R. G. Takawale, P. S. Puranik, Tata McGraw Hill publishing Company Ltd., New Delhi.
3. **Classical Mechanics**, NC Rana and PS Joag, Tata McGraw Hill Education Private Limited, New Delhi, 1991.
4. **Classical Mechanics** by P.V.Panat.
5. **Classical Mechanics**, Herbert Goldstein, Narosa Publishing House.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-354: Atomic and Molecular Physics**

**Lectures: 36**

**(Credits-02)**

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**1: Atomic structure**

**(6 L)**

1. Revision of various atomic models
2. Vector atom model (Concepts of space quantization and electron spin)
3. Pauli Exclusion Principle and electron configuration, Quantum states, Spectral notations of quantum states.
4. Problems

**2: One and Two Valence electron systems**

**(12 L)**

1. Spin-Orbit Interaction (Single valence electron atom), Energy levels of Na-atom, Selection rules, Spectra of sodium atom, Sodium doublet.
2. Spectral terms of two electron atoms, terms for equivalent electrons, LS and JJ-coupling schemes.
3. Singlet-Triplet separations for interaction energy of LS coupling, Lande's interval rule, Spectra of Helium atom.
4. Problems

**3: Zeeman Effect**

**(4 L)**

1. Zeeman Effect
2. Experimental arrangement
3. Normal and anomalous Zeeman Effect
4. Stark effect (Qualitative discussion)
5. Applications of Zeeman effects
6. Problems

**4: Molecular spectroscopy**

**(8 L)**

1. Introduction of molecular spectra and its types
2. Rotational energy levels, Rotational spectra of rigid diatomic molecule
3. Vibrational energy levels
4. Rotational and Vibrational spectra
5. Electronic spectra of molecules
6. Applications of UV-Vis spectroscopy
7. Problems

**5: Raman spectroscopy**

**(6 L)**

1. History of Raman effect, Molecular polarizability
2. Classical theory and Quantum theory of Raman Effect
3. Characteristics Raman Lines and Applications of Raman spectroscopy
4. Problems

**Reference books:**

- 1) R. Murugesan, Er. K. Sivaprasath, Modern Physics, S. Chand, 2014, Revised edition
- 2) Robert Eiseberg, Robert Resnik, Quantum Physics of Atoms, Molecules, Solids, Nuclei and Particles, Wiley, 2016, 2<sup>nd</sup> edition
- 3) G. Aruldas, Molecular structure and Spectroscopy, PHI, 2015, 2<sup>nd</sup> edition
- 4) Colin Banwell, Elaine McCash, Fundamentals of Molecular Spectroscopy, TMH, 4<sup>th</sup> ed
- 5) Arthur Baiser, Concepts of Modern Physics, McGraw Hill International, 4<sup>th</sup> edition
- 6) White H. E, Introduction to Atomic spectra, McGraw Hill International

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-355: Computational Physics**

**Lectures: 36**

**(Credits-02)**

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**1: Concepts of Programming and Introduction to C-programming: (14 L)**

- a) Definition and Properties of algorithms, Algorithm development, Flow charts- symbols and simple flowcharts.
- b) Introduction and Structure of C-program, 'C' Character set, key words, Constants and variables, Variable names, Data types, qualifiers and their declarations, Symbolic Constants.
- c) Input/output functions: scanf( ), printf( ), getchar(), putchar(), gets(), puts().
- d) Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Conditional Operator.
- e) Control statements: if, if else, while, do while, for loop, nested control structures (nested if, nested loops), break, continue, switch- case statement, goto statement.
- f) Use of Library functions: e.g. mathematical, trigonometric, graphics.

**2: Arrays, Pointers and user defined function in C-Language (8 L)**

- a) Arrays: 1-D, 2-D: Arranging numbers in descending and ascending order, Sum of matrices, multiplication of matrices.
- b) Concept of pointers with suitable illustrative examples.
- c) User defined functions: Definitions and declaration of function, function prototype, passing arguments (Call by value, Call by reference). Simple illustrative examples.

**3: Graphics in C-Language: (3 L)**

Concepts of graphics in C, Some simple graphic commands- Point, Line, Circle, Arc, Ellipse, Bar with suitable illustrative examples.

**4: Computational Physics: (11 L)**

Numerical Methods to solve the Physics Problems

- a) **Iterative methods:** Bisection method and Newton-Raphson Method– Algorithm, Flowchart and writing C- program for finding the roots of the equation, problems
- b) **Integration:** Trapezoidal rule, Simpson's  $1/3^{\text{rd}}$  rule – Algorithm, Flowchart and C-program, problems

**Reference Books:**

1. Programming in C- (Schaum's series), Gottfreid, TMH
2. Programming in C- Balgurusami, Prentice Hall publications
3. Let us C- Yashwant Kanetkar, BPB publications
4. Programming with C- K.R. Venugopal, S. R. Prasad, TMH.
5. Introductory methods of numerical analysis-S. Sastry, Prentice Hall
6. Computer oriented numerical methods – V. Rajaraman.

# PHY-356: Elective-I

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-356 Elective-I (A): Astronomy and Astrophysics-I**

**Lectures: 36**

**(Credits-02)**

- 1: Fundamentals of Astronomy: (10 L)**  
Introduction: Components of the Universe; Stars, Planets, Asteroids, Meteors, Comets, Galaxies.  
Solar System: Age, Origin Basic measurements: Planetary orbits, distances, physical size, mass, density, temperature, rotation period determination, Co-ordinate system, Celestial hemisphere,
- 2: Astronomical Instruments: (8 L)**  
Optical telescopes, mounts, light gathering power, magnification, Resolution. Spectroscopes, CCD camera, photometer, filters Radio telescopes, Interferometry (only introduction)
- 3: Star Systems and basic observations: (10 L)**  
Stars life cycle, Stellar processes (Nuclear). Neutron stars, black holes, Chandrasekhar limit.  
Spectral classification of stars, O, B, A, F, G, K, M. Star Systems: Binaries / Cepheids / RR Lyrae,  
Observation of Sun: Eclipses, Moon, planets, meteor showers, transits, occultations.
- 4: Galaxies, Dark Matter and Dark Energy (8 L)**  
A) Galaxies, types, their formation, Hubble's tuning fork diagram, Open and Globular clusters, Dark Matter / Energy (evidence for both), Cosmology: Theories: BBT, Steady State, Oscillating Universe Theory.  
B) **Observational Astronomy:** Concept of time, Magnitudes: apparent and absolute, introduction to Constellations, Star dial.

**Reference books:**

1. Astronomy structure of the Universe. A.E. Roy and D. Clarke, Adam Hilger Pub.
2. Source Book of Space Sciences, Samuel Galsstone; D.Van Nostrand Co. Inc
3. Astrophysics - Stars and Galaxies, K.D. Abhyankar, Tata McGraw Hill Pub.
4. Textbook of Astronomy and Astrophysics with elements of cosmology, V.B. Bhatia, Narosa Pub.
5. Structure of the Universe, J.V. Narlikar
6. Astrophysics, Baidyanath Basu.
7. Astrophysical Techniques, third Edition, C. R. Kitchin
8. Fundamentals of Astronomy, Michael Seed
9. Telescopes and techniques, C. R. Kitchin (Springer)

**List of experiments: ( Any 2 )**

1. Study of Binocular, refracting and reflecting telescopes and their mounts.
2. To determine the diameter of the Moon.
3. Measurement of Solar Constant.
4. Observation of emission, continuous and absorption spectra. (Mercury, sodium or iodine spectra could be obtained.)
5. Study of Construction and working of CCD.
6. Study of Solar Eclipse and Lunar Eclipse.



**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-356 Elective-I (B): Elements of Material Science**

**Lectures: 36**

**(Credits-02)**

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- 1: Defects in Solids** (7 L)
1. Material Properties – Mechanical, Electrical, and thermal
  2. Impurities in solids.
  3. Solid solutions in metals.
  4. Rules of solid solubility.
  5. Imperfection in crystals.
  6. Defects in solids point, line, surface, and volume.
  7. Atomic diffusions definition, mechanism, Fick's laws.
- 2: Single Phase Metals** (6 L)
1. Single phase alloys
  2. Deformation
  3. Elastic Deformation and Plastic Deformation
  4. Mechanism of plastic Deformation by slip
  5. Critical resolved shear stress (CRSS)
  6. Plastic deformation in poly crystalline materials
- 3: Ceramic Materials** (10 L)
1. Ceramic Phases, Classification of ceramic materials
  2. Ceramic crystals (AX)
  3. Mechanical behavior of ceramics
  4. Electromagnetic behavior of ceramics –
    - a) Electric properties dielectrics, semiconductors, piezoelectric
    - b) Magnetic Properties Magnetic Ceramics, hard and soft ferrites
- 4: Phase Diagrams** (9 L)
1. Basic terms System, Surrounding, Component, Coordinates, Phase, Equilibrium.
  2. Phase Diagram definition, importance, and objective
  3. Lever rule
  4. Gibb's phase rule
  5. Phase diagram of a) Sugar water b) NaCl water
  6. Types of phase diagrams with construction
    - a) Type I Lens type CuNi phase diagram
    - b) Type II Only introduction
    - c) Type III Eutectic type PbSn phase diagram
  7. Isothermal cuts
- 5: Introduction to smart materials** (4 L)
1. Definition of smart materials
  2. Types and structure of smart materials,
  3. Properties of smart materials
  4. Applications of smart materials.

**Reference books :**

1. Elements of Materials Science and Engineering I. H. Vanvlach (4<sup>th</sup> Edition)
2. Materials Science and Engineering - V. Raghavan

**List of experiments : ( Any 2 )**

1. To determine the dipole moment of a given liquid
2. To determine magnetic susceptibility of  $\text{FeCl}_3$
3. To determine the specific heat of graphite
4. Determination of the yield point and the breaking point of an elastic material
5. Ionic conductivity of NaCl/ NaI
6. Grain size and grain boundary measurement using optical microscope.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-356 Elective-I (C): Biophysics**

**Lectures: 36**

**(Credits-02)**

**1: Introduction of Biophysics**

**(13L)**

- 1.1 History of Biophysics, Concept of Biophysics and Physical properties applied to biology- Surface tension, Viscosity, adsorption, diffusion, osmosis, Definition for Biostatistics and Biometry
- 1.2 Cell: Animal and plant cell, types of cell, Functional aspects of cell membrane, cytoplasm, nucleus, mitochondria and chloroplast
- 1.3 Protein structure (Primary and Secondary), amino acid structure, Genetic code- symmetry, DNA structure
- 1.4 Photosynthesis process:- electron transport, Gibbs's free energy, Redox couple, Redox potential, Oxidation and reduction, Examples of redox potential in biological system.

**2: Bio-potentials**

**(9L)**

- 2.1 Bioelectric signals: structure of neuron, resting potential, action Potential, Nernst equation
- 2.2 Bioelectrodes- Half-cell potential, polarizable and non-polarizable electrodes, Microelectrode- metal and glass electrodes
- 2.2 Study of Cardiovascular system, Compound action potential of human body-ECG (Electrocardiography), Electrodes for ECG

**3: Bio-instruments**

**(6L)**

- 3.1 Basic principle, Construction and working of colorimeter, spectrophotometer, PH meter and Centrifuge measurement.
- 3.2 Electron Microscope: SEM, TEM.

**4: Radiation Biophysics**

**(8L)**

- 4.1 Definition, Units of Radioactivity and radiation doses, Types of radiation (Ionizing and non- ionizing), radioimmunoassays.
- 4.2 Applications: PET (Positron Emission Tomography), NMR (Nuclear Magnetic Resonance), MRI (Magnetic Resonance Imaging Techniques), Ultrasonography, CT (Computed Tomography) Scan.

**Reference books:**

1. Introduction to Biophysics - by P. Narayanan. New Age P.
2. Medical Instrumentation - by Khandpur, TMH
3. Laboratory Manuals of Biophysics Instruments - by P.B. Vidyasagar
4. Biophysics -by Vatsala Piramal, Dominant Publisher and Distributors, New Delhi-110002
5. Textbook of Biophysics - by R.N. Roy
6. Photosynthesis - by Hall and Rao.
7. Introduction to Biomedical Equipment Technology (Fourth Edition) by-Joseph J.Carr
8. Text Book of Bio-medical Electronics-by S.S. Agrawal

**List of Experiments : ( Any 2 )**

1. Recording and analysis of ECG signals
2. Verification of Beer's and Lambert's Law
3. Absorption spectrum of Blood/Chlorophyll.
4. pH value of Amino acids.
5. Bimolecular model building using standard kits.
6. Separation of components of Milk/Chlorophyll using centrifuge machine.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-356 Elective-I (D): Renewable Energy Sources-I**

**Lectures: 36**

**(Credits-02)**

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**1: An Introduction to Energy Sources:**

**(10L)**

1. Energy: Definition, Classifications of energy sources
2. Conventional and non-conventional energy sources.
3. Sun: The source of energy (Structure, Characteristics and Composition)
4. Solar Constant
5. Electromagnetic Energy Spectrum.
6. Solar radiations outside earth atmosphere.
7. Solar radiation at the earth surface.
8. Problems.

Ref.1- page no. 1 to 11 and 15 to 37

Ref.3- 3.1, 3.2, 3.3, 3.4, 3.5

**2: Photothermal Applications:**

**(10L)**

1. Photothermal devices: Solar Insolation, Selective Coating, Glass Cover, Heat Conductor and Heat Insulation.
2. Solar water heating systems: Types, construction and working of Liquid Flat Plate Collector (FPC) and Evacuated Tube Collector (ETC)
3. Energy Balance Equation (without thermal Analysis).
4. Concentrating collectors: Flat plate collector with plane reflector, Cylindrical parabolic, Compound parabolic, Collector with fixed circular concentrators and moving receiver, paraboloid concentrator.
5. Comparative study between flat plate collector and solar concentrators.
6. Solar distillation, Solar dryer, Solar cooker (box type)

Ref. 1: 3.3, 3.3(A), 3.5, 3.7, 3.8, 5.2, 5.8, 5.11.

Ref. 2: 2.2.6

**3: Photovoltaic systems:**

**(10L)**

1. Introduction to Photovoltaic effect and Photovoltaic Conversion.
2. Basic photovoltaic system for power generation
3. Basics of Solar Cell, PV modules, Arrays,
4. Solar Cell: I-V characteristics, Power output and conversion efficiency.
5. Factors affecting on photovoltaic efficiency. (Change in amount of input light, solar cell area, Change in angle, Change in operating Temperature etc.)
6. Types of solar cells: p-n junction solar cell, p-i-n diode solar cell, cadmium sulphide solar cell, Gallium arsenide solar cell, Indium phosphide solar cell, nano-crystalline solar cell.
7. Application of solar photovoltaic systems.

Ref.3 -15.1, 15.3, 15.4, 15.5, 15.7, 15.8, 15.10.

Ref.8 – 3.6.1, 3.6.2, 3.6.3, 3.6.4, 3.6.5

#### 4: Energy Storage:

(06L)

1. Importance and Needs of Energy storage in Conventional and Nonconventional Energy Systems.
2. Various forms of Energy Storage
3. Electrical Energy: Super capacitors
4. Electrochemical Energy: Battery
5. Chemical Energy: Hydrogen Production and storage

Ref.4 - Ref.5 - Ref.6 - Ref.7 -

#### **Reference books:**

1. Non-conventional Energy sources, G. D. RAI (4th edition), Khanna Publishers, Delhi.
2. Solar Energy, S.P. Sukhatme (second edition), Tata Mc. Graw Hill Ltd, New Delhi.
3. Solar Energy Utilizations, G. D. RAI (5th edition), Khanna Publishers, Delhi.
4. Energy Storage: Fundamentals, Materials and Applications, by Huggins R. A., Springer
5. Chemical and Electrochemical Energy System by R. Narayan and B. Viswanathan, University Press.
6. Battery Systems Engineering by C. D. Rahn and C. Wang, Wiley Pub.
7. Electrochemical Energy Storage for Renewable sources and grid balancing by P. T. Moseley and J. Garche, Elsevier Science.
8. Solar Photovoltaic Technology and Systems by C S Solanki

#### **List of Experiments: ( Any 2 )**

1. To calculate the thermal efficiency of liquid flat plate collector.
2. To study the box type solar cooker.
3. To determine an instantaneous thermal efficiency of parabolic collector.
4. To calculate an efficiency and fill factor of PN junction solar cell.
5. To study I-V characteristic of various types of solar cells.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-356 Elective-I (E): Applied Optics**

**Lectures: 36**

**(Credits-02)**

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- 1: Fermat's Principle and Matrix Methods in Paraxial Optics: (9L)**
- 1.1 Introduction to Fermat's Principle and its Applications.
  - 1.2 Laws of Reflection and Refraction from Fermat's Principle.
  - 1.3 Ray paths in an Inhomogeneous Medium.
  - 1.4 Introduction to Matrix methods in Paraxial Optics.
  - 1.5 The matrix method, Unit planes and Nodal planes.
  - 1.6 A System of two thin lenses.
  - 1.7 Problems.
- 2: Multiple-Beam Interferometry and Diffraction: (9L)**
- 2.1 Introduction to Multiple-Beam Interferometry.
  - 2.2 Michelson Interferometer
  - 2.3 The Fabry-Perot Etalon.
  - 2.4 The Fabry-Perot Interferometer.
  - 2.5 Introduction and revision of diffraction.
  - 2.6 Two slit and N-Slit Fraunhofer diffraction pattern.
  - 2.7 Fresnel half period zones, the zone plate and Fresnel Diffraction.
  - 2.8 Problems.
- 3: Polarization and Holography: (9L)**
- 3.1 Introduction and Revision of Polarization.
  - 3.2 Malus law, Double refraction,
  - 3.3 Phase retarded plate, Quarter wave plate and half wave plate
  - 3.4 Optical activity and Polarimeter
  - 3.5 Introduction and Theory of Holography.
  - 3.6 Importance of coherence and Principle of holography.
  - 3.7 Characteristics, recording and reconstruction of Holography
  - 3.8 Applications of Holography.
  - 3.9 Problems.
- 4: Fibre Optics: (9L)**
- 4.1 Introduction to Fibre Optics.
  - 4.2 The Optical Fibre: Principle and Structure.
  - 4.3 Fibre Optics: Numerical aperture and Acceptance angle, Pulse dispersion and Calculation of pulse dispersion.
  - 4.4 Types of Optical Fibres: Concept of Mode, Multimode and Single mode fibre.
  - 4.5 Attenuation in optical fibers, single mode and multimode fibers.
  - 4.6 Fibre Optic communication system: Fiber optical telecommunication system.
  - 4.7 Advantages of Fibre Optics.
  - 4.8 Applications of Fibre Optics.
  - 4.9 Problems.

**Reference Books:**

- (1) Ghatak Ajoy, Optics 3<sup>rd</sup> Edition, The McGraw Hill companies.
- (2) N. Subrahmanyam, A textbook of Optics, S. Chand publications.
- (3) Optical Fiber and Fiber Optic communication System, S.K Sarkar S. Chand.
- (4) Practical Optics, Naftaly Menn, Academic press (2004)
- (5) M. Born and E. Wolf, Principles of Optics, Cambridge University Press
- (6) F. A. Jenkins, H.E White, Fundamental of Optics, McGraw companies

**List of Experiments : ( Any 2 )**

- (1) Determination of the numerical aperture of the given optical fibre.
- (2) Determination of the optical power loss in attenuators.
- (3) Fabry Perot Etalon
- (4) To study the nature of polarization of laser light using photo cell and quarter wave plate.
- (5) To determine the Brewster's angle for glass using a polarized monochromatic light source.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-356 Elective-I (F): C# Programming**

**Lectures: 36**

**(Credits-02)**

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**1: MS.NET Framework Introduction (8L)**

• The .NET Framework - an Overview • Framework Components • Framework Versions • Types of Applications which can be developed using MS.NET • MS.NET Base Class Library • MS.NET Namespaces • The Common Language Runtime (CLR), Common Type System (CTS) • Common Language Specification (CLS) . Installing Required Software – SQL Server and Management studio

**2: C # Language Syntax (8L)**

• Datatypes • Global, Stack and Heap Memory • Common Type System • Reference Type and Value Type • Datatypes and Variables Declaration • Implicit and Explicit Casting • Checked and Unchecked Blocks – Overflow Checks • Casting between other datatypes • Boxing and Unboxing • Enum and Constant • Operators • Control Statements • Working with Arrays • Working with Methods • Pass by value and by reference and out parameters • Writing, testing and execution of program to understand general syntax and functions available in C#.

**3: Database Programming Using ADO.NET (8L)**

• Prerequisite - Knowledge of SQL Queries • Introduction and Evolution of ADO.NET • Understanding the Role of Managed Provider and ADO.NET Objects • connecting to Database and Connection Pooling • Performing Insert, Update and Delete Operations • Fetching Data from database - Executing Select Statements • How to implement Login facility with database

**4: Interactive methods (6L)**

Preparing flowchart, algorithm for interactive methods, Bisection Methods, Newton Rapson Method, Numerical integration by Trapezoidal rule, Simpson 1/3<sup>rd</sup> rule.

**5: Hands on training: (6L)**

Hands on training to execute numerical problems for interactive methods, Bisection Methods, Newton Rapson Method, Numerical integration by Trapezoidal rule, Simpson 1/3<sup>rd</sup> rule.

**Reference Books:**

1. C# 8.0 Pocket Reference: Instant Help for C# 8.0 Programmers
2. Programming in C# by E Balagurusamy
3. Beginning C# Object-Oriented Programming (English, Paperback, Clark Dan)
4. Pro C# 9 with .NET 5: Foundational Principles and Practices in Programming by Troelsen, Andrew, Japikse, Philip

**Web References:**

1. <https://dotnet.microsoft.com/learn/csharp>
2. <https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/>
3. <https://www.pragimtech.com/courses/c-sharp-tutorial-for-beginners/>
4. [https://www.tutorialspoint.com/csharp/csharp\\_tutorial.pdf](https://www.tutorialspoint.com/csharp/csharp_tutorial.pdf)



**List of Experiments: ( Any 2 )**

1. Write a program that converts 1 lower case letter ("a" - "z") to its corresponding upper case letter ("A" - "Z"). For example if the user enters "c" then the program will show "C" on the screen.
2. Write a program using a switch statement that takes one value from the user and asks about the type of conversion and then performs a conversion depending on the type of conversion. If user enters:
3. Write a program using conditional operators to determine whether a year entered through the keyboard is a leap year or not.
4. Write a program using a for loop that prints the following output (you need to find a pattern to print letters in this order): A B D H P
5. Write a program using a loop that prints the following output.  
1 2 2 3 3 3 4 4 4 4 5 5 5 5 6 6 6 6 6 . . . nth iteration.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-357: Physics Laboratory-3A**

**Lectures: 36**

**(Credits-02)**

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**(General Laboratory, Electromagnetism, Atomic and Molecular Physics, and Optics)**

**(Any Eight)**

**GROUP-I: GENERAL PHYSICS (any FOUR)**

1. Kater's pendulum
2. Moment of Inertia by Bifilar suspension
3. Young's modulus by Koeing method
4. Surface tension of mercury by ripple method
5. Surface tension liquid by Fergusson method
6. Surface tension of mercury by Quincke's method
7. 'Y' by vibration of wooden scale
8. Young's modulus by Newton's rings
9. Determination of wavelength of light by Michelson's interferometer
10. Study of damped oscillations of physical pendulum and finding log decrement

**GROUP-II: ELECTROMAGNETISM (any TWO)**

1. Study of forced oscillations by electromagnetically driven simple pendulum
2. Self-Inductance by Anderson's bridge
3. Core losses in transformers
4. Electromagnetic pendulum
5. Self-Inductance by Maxwell's bridge

**GROUP-III: ATOMIC AND MOLECULAR PHYSICS AND OPTICS (any TWO)**

1. Determination of Rydberg's constant
2. Zeeman Effect
3. Llyod's mirror
4. Determination of Resolving Power of grating
5. Determination of wavelength by Constant deviation spectrometer

**Additional Activities (Any ONE)**

- Demonstrations: Any 2 demonstrations equivalent to 2 experiments
- Study tour with report equivalent to 2 experiments
- Mini project equivalent to 2 experiments
- Computer aided demonstrations (simulations or animations)  
(Any 2 demonstrations equivalent to 2 experiments)

*Note: Students have to perform **ten** experiments or **one** additional activities in addition to **eight** experiments mentioned above. Total laboratory work with additional activities should be equivalent to **ten** experiments.*

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-358: Physics Laboratory-3B**

**Lectures: 36**

**(Credits-02)**

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**GROUP-I: EXPERIMENTS USING CRO/INSTRUMENTATION (any TWO)**

1. Charging and discharging of capacitor and RC time constant
2. Measurement of g using simple pendulum
3. Velocity of sound
4. Radiation detection
5. IV Characteristics of diode
6. Measuring a value of a capacitor using CRO.
7. Temperature controller using AD590
8. Study of IC 7490 as mod 2, mod 5, mod 7 and mod 10 counter.

**GROUP-II: C-PROGRAMMING (any TWO)**

1. Factorial of a number by simple and recursive method.
2. To find out the first 100 prime numbers
3. Matrix multiplication
4. Position time data using kinematic equations
5. Finding pressure using Van-der-Waals' equation of state

**GROUP-III: COMPUTATIONAL PHYSICS (NUMERICAL BASED) (any TWO)**

1. Roots of an algebraic equation (Bisection)
2. Roots of polynomial (Newton Raphson)
3. Numerical Integration by Trapezoidal rule
4. Numerical Integration by Simpson's 1/3 rule

**GROUP-IV: PRACTICAL FROM OPTIONAL COURSE (Any TWO)**

**Additional Activities (Any ONE)**

- Demonstrations: Any 2 demonstrations equivalent to 2 experiments
- Study tour with report equivalent to 2 experiments
- Mini project equivalent to 2 experiments
- Computer aided demonstrations (simulations or animations)  
(Any 2 demonstrations equivalent to 2 experiments)

***Note:** Students have to perform **ten** experiments or **one** additional activities in addition to **eight** experiments mentioned above. Total laboratory work with additional activities should be equivalent to **ten** experiments.*

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-359: Physics Project-I**

**Lectures: 36**

**(Credits-02)**

**Guidelines:**

It is expected that,

1. The student does work equivalent to about ten (10) laboratory experiments throughout the semester in the third year.
2. One bears in mind that the project work is a practical course and it is intended to develop a set of skills pertaining to the laboratory work apart from the cognition of students. Therefore, the guides should not permit projects that involve no contribution on part of student.
3. The project must have a clear and strong link with the principles of basic physics and/or their applications.
4. The theme chosen should be such that it promotes better understanding of physics concepts and brings out the creativity in the students.
5. The evaluation of the project work must give due credit to the amount of the project work actually done by a student, skills shown by the student, understanding of the physics concepts involved and the final presentation at the time of viva voce.
6. It is also recommended that a teacher will look after Four (4) projects at one time.
7. Practical examination will be conducted semester wise.
8. The student can perform an Experimental/Theoretical/Computational Project in Physics or interdisciplinary areas under the supervision of one or more guides.
9. The student can learn the basics of the topic chosen for project, to learn how to do literature survey and set up the basic experimental/theoretical and computational techniques needed for the project.
10. The department encourage to students for projects both in experimental and theoretical areas of Physics in collaboration with other institutes and industry.

**The Project work shall consist of the following Criteria.**

1. Project work is mandatory for all the T. Y .B. Sc. students.
2. All the T. Y. B. Sc. students will be have to complete the Project work prescribed by the Board of Studies in Physics of Savitribai Phule Pune University during the V<sup>th</sup> Semester.
3. The Project work shall consist of the following Criteria.
  - It is expected that students must finalize the Title of Project, Aim and objective, Significance, Literature survey, Materials required, Method and Application etc.
  - Introduction to foundations of Project Work.
  - Introduction of Project Research Methodology.
  - Study of Data Collection Methods.
  - Project Problem Writing and Presentation Skills.

**Evaluation weightage:**

- Project-I: Semester End University Examination : 35 Marks
- Internal Examination: 15 Marks

# **Skill Enhancement Courses**

## Skill Enhancement Courses (SEC)

### a) Selection of Skill enhancement courses

There are two skill enhancement courses (SEC) in 5<sup>th</sup> semester (PHY-3510 and PHY-3511). For 5<sup>th</sup> semester, there are four options available. The college has to select any one from the given four options. It is advised that college should not offer elective and skill enhancement course of same theme.

### b) Teaching Learning process for Skill Enhancement Courses

Skill base courses are intended to explore the applications of physics knowledge. Learning in skill enhancement courses is largely experience based. The skill enhancement courses may be categorized as knowledge skill or technical skill. For knowledge skill courses one can use the conventional method for teaching along with problem solving, assignments seminars etc. For acquiring the technical skill, the students will get adequate 'hands-on' experience. The teachers may use demonstrations and activity-based learning techniques. On field visits, study tour and mini projects will enrich the learning experience of the students.

### c) Assessment methods for skill enhancement courses

Continuous evaluation will be the best method for assessment of skill enhancement courses.

One can use tools like assignments, mini projects or activities, problems, etc and grade the students according to their performance. The internal assessment should have 50 % weightage.

The University examination may be conducted for the remaining 50%.

The University examination question paper should have adequate proportion of objective and subjective question.

### d) List of Skill Enhancement Courses:

Semester-V <sup>th</sup>	Semester-V <sup>th</sup>
PHY-3510	PHY-3511
PHY-3510(G): Python Programming	PHY-3511(K): Physics Workshop Skill
PHY-3510(H): Energy studies	PHY-3511(L): Biomedical Instrumentation
PHY-3510(I): Introduction to Arduino	PHY-3511(M): Non-destructive Testing Techniques
PHY-3510(J): Sensors and Transducer	PHY-3511(N): Acoustics Applications

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-3510 SEC (G): Python Programming**

**Lectures: 36**

**(Credits-02)**

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Pre-requisite	: Basic mathematics (XII-Science)
Version of python	: 3.4
Proposed IDE	: Spider, Py Charm or Jupyter

**Python Programming:**

Python is one of the top ten popular programming languages. Python is a general purpose and high level programming language. You can use Python for developing desktop GUI applications, websites and web applications. Also, Python, as a high level programming language, allows you to focus on core functionality of the application by taking care of common programming tasks. The simple syntax rules of the programming language further makes it easier for you to keep the code base readable and application maintainable. There are also a number of reasons why you should prefer Python to other programming languages.

**Advantages of Python Programming**

- i.) Readable and Maintainable Code
- ii.) Multiple Programming Paradigms
- iii.) Compatible with Major Platforms and Systems
- iv.) Robust Standard Library
- v.) Many Open Source Frameworks and Tools
- vi.) Simplify Complex Software Development
- vii.) Adopt Test Driven Development

**Objectives:**

- i.) To build foundation for understanding Python environment to enhance computational skills.
- ii.) Understand variables, input and output functions in python and To Apply computational skill in problem solving approach of Physics
- iii.) Get exposure to arithmetic, assignment, relational, logical and Boolean operators.
- iv.) Be familiar with Python modules and Libraries

**Course outcomes:**

After completion of this course student will be able

- i.) To write code for complex scientific computational requirement.
- ii.) Use Libraries like NumPy for numeric computation
- iii.) Use Library SciPy for scientific and technological calculations
- iv.) Use Library Matplotlib for plotting of graph and its visualization.
- v.) Develop own functions for Physics or mathematics.

## Syllabus

### a) Python Programming:

Unit No.	Topic	Lectures
1	<b>Introduction to Python Programming Language:</b> Introduction to Python Language, <ul style="list-style-type: none"><li>• Strengths and Weaknesses,</li><li>• IDLE, Dynamic Types,</li><li>• Naming Conventions,</li><li>• String Values,</li><li>• String Operations,</li><li>• String Slices,</li><li>• String Operators,</li><li>• Numeric Data Types,</li><li>• Conversions,</li><li>• Built In Functions</li></ul>	03
2	<b>Data Collections and Language Component:</b> <ul style="list-style-type: none"><li>• Introduction,</li><li>• Control Flow and Syntax,</li><li>• Indenting,</li><li>• The if Statement,</li><li>• Relational Operators,</li><li>• Logical,</li><li>• Operators,</li><li>• True or False,</li><li>• Bit Wise Operators,</li><li>• The while Loop, break and continue,</li><li>• The for Loop, Lists,</li><li>• Tuples,</li><li>• Sets,</li><li>• Dictionaries,</li><li>• Sorting Dictionaries,</li><li>• Copying Collections.</li></ul>	05
3	<b>Functions and Modules :</b> <ul style="list-style-type: none"><li>• Introduction</li><li>• Defining Your Own Functions Parameters</li><li>• Function Keyword and Optional Parameters</li><li>• Passing Collections to a Function</li><li>• Variable Number of Arguments Scope</li><li>• Functions Passing Functions to a Function</li><li>• Mapping Functions in a Dictionary</li></ul>	05



	<ul style="list-style-type: none"> <li>• Modules</li> <li>• Standard Modules – sys</li> <li>• Standard Modules – math</li> <li>• Standard Modules – time</li> <li>• The dir Function</li> </ul>	
4	<b>Modules and packages in Python :</b> <ul style="list-style-type: none"> <li>• NumPy, SciPy</li> <li>• MathPlot etc</li> </ul>	<b>05</b>

**Activity: any- 6**

**[18L]**

Sr. No.	Practical/Demonstration to Communicate Concepts and Application in Physics, Electronics, Statistics and Mathematics
1	Write python program to use basic math and string operations.
2	Write python program to find roots of quadratic equation, prime numbers etc
3	Write python program to store data in list and perform matrix operation
4	Write python program to do numerical methods
5	Write python program involving tuples, dictionaries in problems related to physics or mathematical concepts
6	Write python program to use random number generator as probability density to show expected value is 0.5 to explain quantum mechanical behaviour of particle in one dimensional well.
7	Write python program to use NumPy library for more complex arithmetic operations
8	Write python program to use complex numbers and complex algebra
9	Write python program to use bitwise operation
10	Write python program to plot graphs using matplotlib or similar library

**Reference books:**

- Python Programming: Using Problem Solving Approach. By Reema Thareja.
- Think Python By Allen Downey
- Problem Solving and Python Programming By Balguruswami McGraw Hill
- Let Us Python By Aditya Kanetkar
- Learning with Python By Allen Downey
- Data Analytics By Bharti Motwani

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-3510 SEC (H): Energy Studies**

**Lectures: 36**

**(Credits-02)**

**Objectives:**

1. Students understand the comparative aspects, advantages and disadvantages of various sources of energy. They understand the facts and myths regarding the energy sources.
2. Students learn the basic principles involved and technologies developed in the uses of solar energy, biomass energy, wind energy, fuel cells.
3. Students understand the challenges and opportunities in conversion of energy from one form to another, generation of electricity and mechanical work using different energy sources.
4. Students get acquainted with challenges and recent trends in energy storage devices and they learn more about super-capacitors and batteries, electrical vehicles. They can imagine about future road maps in the fields of energy conversion and storage technologies.

**Course Outcomes:**

1. Students become capable of conducting energy audits and give consultancy in that field.
2. Students can design different types of solar heaters for small domestic as well as large scale community level applications.
3. Students acquire skills to implement solar P-V systems at domestic levels as well as for office premises and educational institutions. Students become able to start their own enterprise in net metering.
4. Students get ideas and hence become self-employed in the field of design , production, commissioning and implementation of bio-mass energy sources , bio-gas plants, gasifiers, wind mills, hybrid systems etc.
5. Students can go for research in the fields of super-capacitors, battery technologies, fuel cells and material synthesis for implementation of these technologies.
6. Students become successful entrepreneurs in the energy field.

Students strive to make the regions where they live and work self-sufficient in generating and fulfilling their own energy needs using different energy solutions.

**Syllabus:**

Unit No.	Topic	Lectures
1	<b>An Introduction to Energy Sources:</b> Classification and comparison of energy sources (hydro, thermal, nuclear, solar, wind, biomass, and fossil fuels) considering environmental, safety, economy, production and distribution aspects. Facts and Myths about various sources of energy, thermal, nuclear sources of energy, Hybrid sources. Energy audit.	3
2	<b>Solar thermal Applications:</b> Sun as a source of energy, Solar Constant, Liquid flat plate collector, construction and working, Concentrating collectors, Solar drying, Solar water heating systems.	3
3	<b>Solar Photovoltaic systems Applications:</b> Photovoltaic principle, Power output and conversion efficiency, Limitation to photovoltaic efficiency, Basic photovoltaic system for power Generation,	4

	Application of solar photovoltaic systems, Advantages and disadvantages of Solar PV Systems.–Configurations of Solar Photovoltaic Systems: Off-grid, Grid-Tied and Grid-Storage, Net metering and steps in installation of a rooftop solar PV System design.	
4	<b>Biomass and wind energy:</b> Bio-mass conversion technologies, Bio-gas generation, Working of biogas plant, Bio-gas from plant wastes, Methods for obtaining energy from biomass, Thermal gasification of biomass, Introduction to wind energy, Classification and description of wind machines, Wind energy, Wind data.	4
5	<b>Energy storage devices and electrical Vehicles :</b> Recent trends in batteries, super-capacitors, fuel cells. Applications of storage devices: Electrical Vehicles (EV), Converter, Inverter, Controls & Controllers in EV, Future Trends in Electric Cars.	4

**Activity: any-6** (At least one activity from each unit)

[18L]

**Unit-I:**

1. Energy audit of college campus/public campus/home/building.
2. Comparison of energy sources.
3. Visits to energy generation/distribution sites.

**Unit-II:**

4. Study of solar water heaters.
5. Study of large scale solar heaters for industrial/cooking/water heating applications.
6. Study of flat plate, parabolic solar concentrators.

**Unit-III:**

7. Efficiency measurement of PV systems using I-V characteristics of Amorphous Si, Mono-crystalline Si, Polycrystalline Si in individual, series and parallel combinations.
8. Effect of intensity of incident light, incident angle and shading on Solar PV Module on Output power.
9. Study of design of solar lanterns, street lights using solar systems.
10. Study of Installation and commissioning of roof top solar PV systems.
11. Study of net metering systems.

**Unit-IV:**

12. Visit to bio gas plant
13. Visit to bio diesel plants
14. Study of modified bio mass plants
15. Design and implementation of domestic/small scale biogas plants.
16. Study of different types of gasifiers
17. Study of wind mill / visit to wind mill

**Unit-V:**

18. Preparation and testing of fuel cell on Laboratory scale
19. Preparation and testing of super capacitors on Laboratory scale
20. Preparation and testing of paper batteries and other types of batteries on Laboratory scale.
21. Design and implementation of battery-operated toys using green technology

**Reference books:**

1. Non-conventional Energy sources- G. D. RAI (4th edition), Khanna Publishers, Delhi
2. Solar Energy - S. P. Sukhatme (Second Edition), Tata Mc Graw Hill Ltd., New Delhi.
3. Solar Energy Utilisation - G. D. RAI (5th edition), Khanna Publishers, Delhi.
4. Renewable Energy Technology: A practical guides of beginners, Chetan Singh Solanki, PHI Learning Private-Ltd., New Delhi.
5. Solar Photovoltaics: Fundamentals, Technologies and Applications, Chetan Singh Solanki, PHI Learning Private-Ltd., New Delhi

**Note :**

1. It is expected that students should undertake at least 1 activity from each unit and total 6 activities amounting to 18 lectures time.
2. Out of the total time allotted to each unit, half the time should be utilized for classroom teaching and remaining half for the activity.
3. Students should be encouraged to study this course by using Case–Study approach.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-3510 SEC (I): Introduction to Arduino**

**Lectures: 36**

**(Credits-02)**

**Introduction:**

Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino board designs use a variety of microcontrollers. Boards are equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various circuits. It has USB that is used for loading programs. Microcontrollers can be programmed using C / Python programming languages. This course will focus on creative thinking and on hands-on project development using Arduino Boards.

**Objectives:**

- To create general awareness and interest in Arduino Boards.
- To provide knowledge of different Arduino boards and various sensors and actuators.
- The course enables student to understand the basics of interfacing with Arduino Boards.
- To familiarize students with Arduino as IDE, programming language & platform and to Program basic Arduino examples.
- To provide knowledge of different Smart System applications.
- Develop skills to design and implement various smart system application.

**Course Outcomes:** After successful completion of this course, student will be able to

- Students will be able to understand and use various Arduino Boards, and its various components, Input / Output Pins, Input / Output Devices.
- Understand general concepts of Programming Arduino Boards.
- Apply the knowledge gain to design applications using Arduino in different domains.
- To analyze and evaluate the performance of various Arduino based devices.
- Learn and understand about any new IDE, compiler, and MCU chip in Arduino compatible boards or similar types.

**Instructions:** This course consists of two parts

- Part I: Theory and Part II: Practical / Project.
- Out of which 1 Credit is for Theory and 1 credit is for Practical work.
- Part II has two sub parts:
- Part II(A) : Practical / Demonstration & Part II(B) : Project. The A or B parts are optional, students can opt any one for 1 credit

**Part I: Theory**

Unit	Topics	Lectures
I : Introduction to Microcontrollers	<ul style="list-style-type: none"><li>• Introduction to Embedded Systems, Block Diagram, Single Board Computers (SBC) and System on Chip (SoC), Single Board Microcontroller (SBM), microprocessor vs microcontrollers, Basic system with microcontroller such as Arduino (SBM), Raspberry Pi (SoC) etc.</li></ul>	04

II : Introduction to Arduino and Arduino Programming	<ul style="list-style-type: none"> <li>• <b>Arduino Basics:</b> What is Arduino, Advantages of Arduino, Arduino Types, Arduino Components, Arduino Uno Architecture</li> <li>• <b>Arduino Hardware:</b> Types of Arduino boards, Various components on Arduino Board, Various sensors and actuators: Overview of Sensors working, Analog and Digital Sensors</li> </ul>	06
III : Introduction to Programming for Arduino	<ul style="list-style-type: none"> <li>• <b>Arduino Software:</b> Integrated Simulation Environment (IDE), Setup the IDE, Arduino Libraries, What is Sketch, Writing Arduino Sketches, Serial Monitor,</li> </ul> <p><b>Introduction to programming:</b> Functions, Variables &amp; Basic Structure of Arduino (C++) Code, Basics Programs (Hello Word, Blinking of LED), Loading program through USB and Test performance of the System, Integration of Sensors and Actuators with Arduino</p>	08

**Part II (A): Arduino Programming (Practical / Demonstration) : any-6 [18 L]**

**Simple Practical using Arduino Uno Board (Software + Hardware):** Choose any-3 Practical from group-1 and any-3 practical from group-2. (Total = 6 practical)

Sr No	List of Practical's
	<b>Group 1 : Any-3</b>
1	Demonstration of Arduino Uno Board, Its Various Components, Pins
2	Installation Arduino Software (IDE) on computer, Introduction to Sketch, Loading of Program from computer, Simple programs: Hello Word, Blinking of LED on Arduino board etc.
3	Interfacing external LED (ON & OFF); Fading of LED
4	Analog Read Serial: 1. Read a potentiometer, print its state out to the Arduino Serial Monitor. 2. Read an analog input and prints the voltage to the Serial Monitor.
5	Digital Read Serial: Interfacing a switch, Read a switch, print the state out to the Arduino Serial Monitor.
6	Digital: Interfacing push Button: Use a push button to control an LED or Buzzer
7	Digital : State Change Detection: Count the number of button pushes.
8	Analog In Out Serial: Read an analog input pin, map the result, and then use that data to dim or brighten an LED.
	<b>Group 2 : Any 3</b>
9	Knock: Detect knocks with a piezo element.
10	Interfacing of Ultrasonic Sensor, Detect objects with an ultrasonic range finder.
11	Interfacing of Proximity Sensor

12	Interfacing of Temperature & Humidity Sensor : To interface DHT11 sensor for recording temperature and humidity readings with Arduino.
13	Interfacing LCD display with Arduino
14	Interfacing of Relay Switch and Servo Motor with Arduino
15	Interfacing Bluetooth Module to Arduino
16	Interfacing of Motion (PIR Sensor) or Light Sensor using (LDR & LED) or Gas Sensor (MQ-2) with Arduino

**OR**

**Part II (B): Arduino Programming (Practical / Demonstration)**

**Project : any-1 (Simple Projects Using Arduino Uno Board)**

**[18 L]**

<b>Sr No</b>	<b>List of Simple Projects</b>
1	Line Following Robot with Arduino
2	Obstacle Avoiding Robot with Arduino
3	Weather Station using Arduino
4	Home Automation using Arduino
5	Android Based Air quality Monitor
6	Intelligent automatic irrigation system

**References:**

1. [www.arduino.cc](http://www.arduino.cc)
2. <https://www.arduino.cc/en/Tutorial/BuiltInExamples>
3. <https://create.arduino.cc/projecthub>

**Course Objectives:**

- To make students familiar with the constructions and working principle of different types of sensors and transducers.
- To make students aware about the measuring instruments and the methods of measurement and the use of different transducers.

**Course Outcomes:** At the end of the course, a student will be able to:

- Use concepts in common methods for converting a physical parameter into an electrical quantity
- Classify and explain with examples of transducers, including those for measurement of temperature, strain, motion, position and light
- Choose proper sensor comparing different standards and guidelines to make sensitive measurements of physical parameters like pressure, flow, acceleration, etc
- Predict correctly the expected performance of various sensors
- Locate different type of sensors used in real life applications and paraphrase their importance
- Set up testing strategies to evaluate performance characteristics of different types of sensors and transducers and develop professional skills in acquiring and applying the knowledge outside the classroom through design of a real-life instrumentation system.

**Syllabus:**

**[18 L]**

**Unit-I: Mechanical and Electromechanical sensor:**

Definition, principle of sensing & transduction, classification. Resistive (potentiometric type): Forms, material, resolution, accuracy, sensitivity. Strain gauge: Theory, type, materials, design consideration, sensitivity, gauge factor, variation with temperature, adhesive, rosettes. LVDT: Construction, material, output input relationship, I/O curve, discussion.

**Unit-II: Capacitive sensors:**

Variable distance-parallel plate type, variable area- parallel plate, serrated plate/teeth type and cylindrical type, variable dielectric constant type, calculation of sensitivity. Stretched diaphragm type: microphone, response characteristics..

**Unit-III: Thermal sensors:**

Material expansion type: solid, liquid, gas & vapor Resistance change type: RTD materials, tip sensitive & stem sensitive type. Thermo emf sensor: types, thermoelectric power, general consideration, Junction semiconductor type IC and PTAT type.

**Unit-IV: Magnetic sensors:**

Sensor based on Villari effect for assessment of force, torque, proximity, Wiedemann effect for yoke coil sensors, Thomson effect, Hall effect, and Hall drive, performance characteristics. Radiation sensors: LDR.



**Activity: any-6** (At least one activity from each unit)

[18 L]

**Unit-I:**

- 1) Linear displacement measurement using potentiometric sensor.
- 2) Displacement/pressure measurement using strain gauge sensor.
- 3) Linear displacement measurement using LVDT.

**Unit-II:**

- 1) Capacitive type transducer measure small displacement/force varying plate area/distance of plate/dielectric constant.
- 2) Displacement/pressure measurement using microphone.
- 3) Liquid pressure measurement using pressure sensor

**Unit-III:**

- 1) Measurement of temperature using RTD .
- 2) Measurement of temperature using Thermocouple transducer.
- 3) Silicon diode as temperature sensor

**Unit-IV:**

- 1) Magnetic sensor/Hall effect/proximity sensor based measurement magnetic susceptibility magnetisation
- 2) LDR based measurement light intensity etc.

**Reference books:**

- 1) R Sensor & transducers, D. Patranabis, 2nd edition, PHI
- 2) Instrument transducers, H.K.P. Neubert, Oxford University press.
- 3) Measurement systems: application & design, E.A.Doebelin, Mc Graw Hill
- 4) Sensor & transducers, D. Patranabis, 2nd edition, PHI
- 5) Instrument transducers, H.K.P. Neubert, Oxford University press.
- 6) Measurement systems: application & design, E.A.Doebelin, Mc Graw Hill

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-3511 SEC (K): Physics Workshop Skill**

**Lectures: 36**

**(Credits-02)**

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**Objectives:**

This course is to get exposure with various aspects of instruments and their usage through hands-on mode.

**Course outcomes:-**

After completion of this course students will able to handle and test various instruments.

**Syllabus:**

**Unit-1. Basic of Measurement:**

**4L**

- Accuracy, precision, sensitivity, resolution, range etc.
- Errors in measurements and loading effects.
- Principle and working of digital meters. Comparison of analog & digital instruments. Characteristics of a digital meter.

Multimeter:

- Block diagram and working of a digital multimeter.
- Principles of measurement of dc voltage and dc current, ac voltage, ac current and resistance.
- Specifications of a multimeter and their significance.

**Unit-2. Electronic Voltmeter:**

**4L**

- Principles of voltmeter, Construction (block diagram only).
- Specifications of an electronic Voltmeter and their significance.
- AC Milli Voltmeter: Type of AC Milli Voltmeters
- Block diagram ac Milli Voltmeter,
- Specifications and their significance.

**Unit-3. Cathode Ray Oscilloscope:**

**5L**

- Block diagram of basic CRO.
- Construction of CRT, Electron gun, electrostatic focusing and acceleration (Explanation only-no mathematical treatment),
- Brief discussion on screen phosphor, visual persistence & chemical composition.
- Time base operation, synchronization. Front panel controls.
- Specifications of a CRO and their significance.
- Use of CRO for the measurement of voltage (dc and ac frequency, time period.
- Special features of dual trace oscilloscope.
- Introduction to digital oscilloscope, Block diagram and principle and working.

**Unit-4. Signal Generators and Analysis Instruments:**

**2L**

- Block diagram, explanation and specifications of low frequency signal generators.
- Pulse generator, and function generator.

- Brief idea for testing, specifications. Distortion factor meter, wave analysis.

#### **Unit-5. Impedance Bridges and Q-Meters:**

**3L**

- Block diagram of bridge.
- Working principles of basic (balancing type) RLC bridge.
- Specifications of RLC bridge. Block diagram & working principles of a Q- Meter.
- Digital LCR bridges.

#### **Activity: any-6**

**(18 L)**

1. Use of Digital multimeter. (3L)
2. To observe the loading effect of a multimeter while measuring voltage across a low resistance and high resistance. (3L)
3. To observe the limitations of a multimeter for measuring high frequency voltage and currents. (3L)
4. Measurement of voltage, frequency, time period and phase angle using CRO. (3L)
5. Measurement of rise, fall and delay times using a CRO. (3L)
6. To measure Q of a coil and its dependence on frequency, using a Q- meter. (3L)
7. Measurement of distortion of a RF signal generator using distortion factor meter. (3L)
8. Measurement of R, L and C using a LCR bridge/ universal bridge. (3L)

#### **Reference Books:**

- 1) A text book in Electrical Technology - B L Theraja - S Chand and Co.
- 2) Performance and design of AC machines - M G Say ELBS Edn.
- 3) Digital Circuits and systems, Venugopal, 2011, Tata Mc Graw Hill. Logic circuit design, Shimon P. Vingron, 2012, Springer.
- 4) Electronic Devices and circuits, S. Salivahanan & N. S.Kumar, 3, 2012, Tata Mc-Graw Hill
- 5) Electronic circuits: Handbook of design and applications, U.Tietze, Ch.Schenk, 2008, Springer  
Electronic Devices, 7/e Thomas L. Floyd, 2008, Pearson India

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-3511 SEC (L): Biomedical Instruments**

**Lectures: 36**

**(Credits-02)**

**Objectives**

- Introduction to various bio-signals and their origin
- Understanding of electrode theory
- Use of transducers in biomedical instrumentation
- Patient safety while using biomedical instrumentation
- Instruments handling and analysis of the recorded data

**Course Outcomes**

- Students will acquire basic knowledge of biomedical instrumentation.
- Students can handle and operate different equipment's like ECG, Oxymeter, and Glucometer.
- Students will be able to record the different health parameters using it.
- Student will also able to analyze and interpret the recorded data.

**Syllabus:**

**Unit-I: Physiological transducers**

**(7L)**

- Introduction to physiological transducers
- Classification of Transducer
- Performance characteristic of transducer.
- Displacement, position and motion transducer.
- Pressure transducer for blood pressure measurement
- Transducer for Body temperature measurement
- Biosensors

**Unit-II: Bioelectric signals and cardiovascular system:**

**(7L)**

- Basics of signal measuring system
- Basic and essentials of biomedical instrumentation system.
- Heart and Cardiovascular system
- Resting and action potential, propagation of action potential, Passive and active conduction.
- Electro-conduction system of heart
- Blood Pressure measurement
- Heart Sounds, Phonocardiography
- Pulse oximetry

**Unit-III: Electrocardiography:**

**(4L)**

- Introduction and Principle
- Interpretation of Electrocardiogram
- Block diagram of electrocardiograph, ECG machine maintenance and trouble shooting
- The ECG leads
- Effect of artifacts on ECG recording

- Types of ECG recorders

**Activities: any-6 (3 Lecture hours each)**

**(18L)**

1. Study of ECG machine( Voltage gain , chart speed etc) and EEG placement of electrodes
2. ECG recording and analysis (Calculation of heart rate, measurement of peak amplitude and period of waves )
3. Study of analog sphygmomanometer and digital BP monitor – Measurement of SBP, DBP and pulse rate
4. Measurement of pulse parameter using pulse oxymetry /pulse measuring instrument
5. Use of biosensor (sugar level measurement / skin resistance).
6. To study Infrared sensor/ temperature gun and measuring values
7. Study of BMI/ body composition monitor and measurement of physiological parameters (BMI, % Body fat,
8. First aid for heart patient – study and practice
9. Study of Spirometer and practice for increasing lung capacity
10. Visit to established hospital

**Reference Books:**

1. Biomedical Instrumentation and Measurements (Second edition) - Leslie Cromwell, Fred J. Weibell, Erich A. Pfeiffer Pearson education.
2. Handbook of Biomedical Instrumentation (Second Edition) - R. S. Khandpur (Tata McGraw Hill).
3. Biomedical Instrumentation and Measurement by Carr and Brown-Pearson.
4. Biomedical instruments and measurements (Second edition) - R. Ananda Natarajan Eastern economy edition
5. A textbook of Biomedical engineering edited - R.M. Kenedi, blackie (Glasgow & London)
6. Medical instrumentation: Application and design (Third edition)- John G. Webster, Willey India Education

**Required Equipment with Probable cost:**

1. Electro Cardiogram- ECG machine- analog- Rs. 30000/-
2. SPO<sub>2</sub> meter- Analog- Rs. 3000/-
3. Fat Meter- Digital- Rs. 4000/-
4. Sphygmomanometer – Digital and analog: Rs. 3000/- each
5. Glucometer- Digital: Rs.2000 each.

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-3511 SEC (M): Nondestructive Testing Techniques**

**Lectures: 36**

**(Credits-02)**

**Objective:**

- To study and understand the various non-destructive testing (NDT) methods, and their industrial and scientific applications.

**Outcomes:**

- After completion of this course the students will be able to use NDT methods for defects and characterization of industrial components.

**Syllabus:**

Unit No.	Topics	Lectures
I	Definition and objectives of NDT, introduction to materials testing, purpose of testing and properties of materials, classification of material testing, destructive testing and its examples only, Definition, Characteristics detected, principle, advantages, limitation and applications of various methods like Visual inspection, liquid penetrant testing, magnetic particle testing, thermography testing, eddy current testing, ultrasonic testing, acoustic emission testing, radiography testing,	6
II	What are the discontinuities, Types of discontinuities in materials? Processing the discontinuity, service induced discontinuity, factors for selection of NDT method in different cases of discontinuity, brief description of equipment used in visual testing method, Principles of liquid penetrant method, stages of liquid penetrant process, liquid penetrant process flow chart, chemical and solvent cleaning methods of surface preparation, how to apply and removal of excess penetrant?, application of developer, and observation of defects, penetrant, their types and properties, role of developer, their types, Magnetic particle testing method, procedure of Magnetic particle testing methods, portable magnetization equipment and stationary magnetization equipment, dry and wet particle inspection techniques and stages involved in it and its applications	6
III	Thermography testing, basics of infrared theory, range characteristics, wavelength, frequency, emission, convection, conduction, reflection, transmission, emissivity of infrared, basic principles of thermography testing, elements of infrared detection system, thermography testing active and passive approach, basics of eddy current testing, working principles of eddy current testing, stages in eddy current testing, factors influencing in eddy current testing, Ultrasonic testing and its methods (transmission and pulse echo method), Acoustic emission testing, factors influencing acoustic wave propagation and data acquisition, instrumentation of acoustic	6

	emission testing, Radiography testing, principle, various stages in testing, gamma ray radiography testing, SWSI and DWSI techniques in X ray testing, Fluoroscopy testing arrangement and working principle, Computed tomography in NDT	
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**Activity: any-6** (each activity will be equivalent to 3-hrs)

**[18L]**

1. Video demonstration of any two NDT techniques
2. Study of different X ray photograph and MRI scan photographs in medicine
3. Study of NDT by acoustic method
4. Surface visual study of defects of various objects provided
5. Study of surface defects by liquid penetration method
6. Study of surface defects by liquid leak method
7. Study of surface defects by liquid spray method
8. Study of surface defects by using UV light and fluorescent liquid method
9. Visit to any industry and observing NDT method live (equivalent to two demonstrations)
10. Audio visual expert lecture of industrialist who is using NDT method for quality control.

**Reference Books:**

1. Non- destructive testing of materials, Dr V. Jaykumar, Dr. K. Elangovan, Lakshmi Publications, Tamilnadu, India.
2. Practical non-destructive testings, Baldev Raj, T. Jaykumar, M. Thavasimuthu, Narosa Publications
3. Basics of non-destructive testings, Lari and Kumar, S.K. Kataria& Sons publications
4. Non-destructive testing techniques, Ravi Prakash, New Age International Private Limited
5. Non-destructive test and evaluation of materials, J. Prasad, C.G.K. Nair, McGraw Hill Education

**T.Y.B.Sc. (Physics) (Sem-V)**  
**PHY-3511 SEC (N): Acoustics Applications**

**Lectures: 36**

**(Credits-02)**

**Objective:**

To study and understand about sound physics, properties and their applications.

**Outcomes:**

After completion of this course the students will be able to use sound detection and characterization of sounds.

**Syllabus:**

**Unit-1: Environmental Acoustics**

(3 L)

- 1.1 Environmental Noise: sonic boom, aircraft flyover, foot-fall noise, slammed door
- 1.2 Weighted sound levels: Sound level meters, A-weighted & C-weighted sound level, Phon, Sone,
- 1.3 Noise rating: Community noise: Highway noise, Aircraft noise
- 1.4 Noise induced hearing loss: Chronic, Trauma.
- 1.5 Mufflers: Automobile, Silencers, Transmission loss,

**Unit-2: Sound Reinforcement Systems**

(5 L)

- 2.1 Microphones- Types, selection criteria, Professional grade, sensitivity, FM microphones
- 2.2 Loudspeakers- Direct Radiator type, Horn- Folded and Flared horn, Woofer, Squawker, Tweeter, Loudspeaker Cabinets- Enclosed cabinet, Open Cabinet, Bass Reflex Cabinet,
- 2.3 Amplifiers: Public Address systems, Gain and Bandwidth
- 2.4 Headphones- Noise cancellation features
- 2.5 Acoustic Delays
- 2.6 Synthesizers, Graphic equalizers, mixers
- 2.8 Basics of Audio Signal Processing
- 2.9 Monophonic and Stereophonic Systems

**Unit-3: Musical Acoustics**

(4 L)

- 3.1 Pitch, timbre, rhythm, intensity, loudness, consonance, dissonance, Bass, Treble, Harmonics and Overtones
- 3.2 Standing waves, interference, beats, harmony, melody
- 3.3 Octave: Musical Scales
- 3.4 Types of Musical Instruments: String - violin, guitar, Wind - Brass, Reed instruments, organ, Percussion - Drums, Tabla
- 3.5 MIDI - Musical Instruments Digital Interface
- 3.6 Audio file formats: MP 3 and MP 4 systems

**Unit-4: Room Acoustics**

(2 L)

- 4.1 Growth and decay of sound in live rooms
- 4.2 Sabine Equation, Reverberation time measurement methods
- 4.3 Room modes, Sound absorption materials
- 4.2 Speech Intelligibility: Articulation Test, Articulation Score



### **Unit-5: Acoustics in Medicine and Ultrasound**

(2 L)

5.1 Audiometry and Hearing loss

5.2 Ultrasonography

5.3 Ultrasonic Transducers

5.4 Ultrasonic cleaning, Non Destructive Testing (NDT)

### **Unit-6. Underwater Acoustics**

(2 L)

6.1 Speed of sound in sea water, Transmission loss

6.2 Sonar: Active and Passive Sonar

### **Activities: Any-6**

[18L]

1. Frequency response of loudspeaker
2. Polar characteristics of a microphone
3. Study of Graphic Equalizer
4. Estimation and measurement of reverberation time
5. Online calculators for Room Modes
6. Speaker response of a direct radiator loudspeaker
7. Transmission loss (TL) of an expansion chamber muffler.
8. Acoustic power output of direct radiator loudspeakers
9. Verification using an online mode calculator

### **Reference Books:**

1. Fundamentals of Acoustics, L.E. Kinsler and A. R. Frey, Wiley Eastern
2. Audio and Video Systems, R. G. Gupta, Tata McGraw Hill, 2010
3. Acoustics, W.W. Seto, Schaum's Outline
4. Handbook of Sound Engineers, G.M. Ballou, Academic Press
5. Basic Acoustics, D.E. Hall, Oxford University Press
6. Design for good Acoustics and Noise Control, J.E. Moore, University Press

# Semester-VI

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-361: Solid State Physics**

**Lectures: 36**

**(Credits-02)**

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**1: The Crystalline Structures**

**(10 L)**

Lattice, Basis, Translational Vectors, Primitive Unit Cell, Symmetry Operations, Different types of lattices: 2D and 3D (Bravais lattices) Miller indices, Inter Planer Distances, SC, BCC and FCC structures, Packing Fraction, Crystal structures NaCl, diamond, CsCl, ZnS, HCP, Concept of Reciprocal Lattice and its properties, Problems

**2: X ray Diffraction and Experimental Methods**

**(9 L)**

Bragg's Diffraction, Bragg's Law, Experimental X-ray diffraction Methods: The Laue Method, Bragg's Spectrometer, The Powder Crystal Method, Analysis of cubic structure by Powder Method, Ewald's Construction, Bragg's Diffraction condition in direct and reciprocal lattice, Problems

**3: Free Electron and Band Theory of Metals**

**(9L)**

Assumptions of Classical and Sommerfeld Free Electron model, Energy levels and Density of States (One and Three Dimensions), Nearly free electron model, Fermi energy, Fermi level, Hall Effect, Mobility, Hall Angle

Band Theory of Solids: Origin of energy gap, Energy bands in Solids, Distinction between metal, semiconductor and insulator, Problems

**4: Magnetism**

**(8L)**

Diamagnetism, Langevin theory of Diamagnetism, Paramagnetism, Langevin theory of Paramagnetism, Ferromagnetism, Antiferromagnetism, Ferromagnetic Domains, Hysteresis, Curie temperature, Neel temperature, **Superconductivity**, Day to day applications of Magnetism, Problems

**Reference books:**

1. Solid State Physics S.O.Pillai, 6<sup>th</sup> Edition, New Age International (P) Ltd, Publisher, (2010).
2. Solid State Physics – Kakani S.L. and Hemrajani C, 4<sup>th</sup> Edition, S. Chand Publication (2005).
3. Fundamentals of Solid State Physics – B.S.Saxena, R.C.Gupta and P.N.Saxena, Pragati Prakashan, Meerut , Uttar Pradesh
4. Introduction to Solid State Physics- Charles Kittel, John Wiley and Sons, 7<sup>th</sup> Edition.
5. Solid State Physics- A.J.Dekker, Macmillan India Ltd, (1998).
6. Solid State Physics- R.K. Puri, V.K. Babbar, S. Chand Publication.
7. Elementary Solid State Physics Principles and Applications, M Ali Omar, Pearson Education, Inc. and Dorling Kindersley Publishing, Inc.(2006)
8. Problems and Solution in Solid State Physics-S.O. Pillai, New Age International (P) Ltd.
9. Solid State Physics, P.K. Palanisamy, Scitech Publications(India) Pvt Ltd, Chennai, 1<sup>st</sup> Edition (2004)
10. Solid State Physics: Essential Concepts, David W. Snoke, 2nd Edition, Cambridge University Press

**1: Origin of Quantum Mechanics (08 L)**

1. Historical Background: Black body radiation, photoelectric effects.
2. Matter waves - De Broglie hypothesis. Davisson and Germer experiment.
3. Wave particle duality
4. Concept of wave function, wave packet, phase velocity, group velocity and relation between them
5. Heisenberg's uncertainty principle with Electron diffraction experiment, different forms of uncertainty.
6. Different fields of applications of quantum mechanics
7. Problems

**2: The Schrodinger equation (10 L)**

1. Physical interpretation of wave function
2. Schrodinger time dependent equation.
3. Schrodinger time independent equation.(Steady state equation).
4. Requirements of wave function.
5. Probability current density, equation of continuity, and its physical significance.
6. An operator in Quantum mechanics, Eigen function and Eigen values.
7. Expectation value, Ehrenfest's theorem (Only statements)
8. Problems

**3: Applications of Schrodinger Steady state equation (14 L)**

1. Free particle.
2. Step potential.
3. Potential barrier. (Qualitative discussion). Barrier penetration and tunnelling effect.
4. Particle in infinitely deep potential well (one - dimension).
5. Schrodinger's equation in spherical polar co-ordinate system.
6. Rigid rotator (free axis).
7. Problems

**4: Operators in Quantum Mechanics (4 L)**

1. Hermitian operator.
2. Position, Momentum operator, angular momentum operator, and total energy operator (Hamiltonian).
3. Commutator brackets- Simultaneous Eigen functions.
4. Commutator Algebra
5. Commutator bracket using position, momentum and angular momentum operator
6. Concept of parity according to quantum mechanics, parity operator and its Eigen values.
7. Applications of Operators in Quantum Mechanics
8. Problems

### Reference books:

1. Eisberg, Robert M., and Robert Resnick. *Quantum Physics of Atoms, Molecules, Solids, Nuclei, and Particles*. Wiley, 1985. ISBN: 9780471873730.
2. Liboff, Richard L. *Introductory Quantum Mechanics*. Addison Wesley, 2002. ISBN: 9780805387148.
3. Griffiths, David J. *Introduction to Quantum Mechanics*. Upper Saddle River, Pearson Prentice Hall, 2005. ISBN: 9780131118928
4. Feynman, Richard P., Robert B. Leighton, and Matthew L. Sands. *The Feynman Lectures on Physics*. Addison Wesley, 1989. ISBN: 9780201500646.
5. P M Mathews and K Venkatesan, *A Textbook of Quantum Mechanics*, Tata McGraw Hill publication, ISBN : 9780070146174
6. N. Zettili, *Quantum Mechanics- Concepts and applications*, Wiley publication, ISBN: 978-0-470-02679-3
7. Ajoy Ghatak, S. Lokanathan, *Quantum Mechanics: Theory and Applications*, Springer Publication, ISBN 978-1-4020-2130-5
8. G Aruldas, *Quantum Mechanics*, Phi Learning Private Ltd., ISBN : 97881203363
9. Shankar, Ramamurti. *Principles of Quantum Mechanics*. Springer, 2008. ISBN: 9780306447907.
10. Gupta, Kumar & Sharma, *Quantum Mechanics*, Jai Prakash Nath Publications.

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-363: Thermodynamics and Statistical Physics**

**Lectures: 36**

**(Credits-02)**

**1: Transport phenomenon and Maxwell's relations: (9L)**

Mean free path, Transport phenomenon, Viscosity, Thermal conductivity and diffusion.

Thermodynamic functions: Internal Energy, Enthalpy, Helmholtz function, Gibb's function, Derivation of Maxwell Relations, Specific heat and latent heat equations, Joule Thomson effect (Throttling Process), Problems

**2: Elementary Concepts of Statistics: (9L)**

Probability, distribution functions, Random Walk and Binomial distribution, Simple random walk problem, Calculation of mean values, Probability distribution for large-scale N, Gaussian probability distributions, Problems

**3: Statistical Distribution of System of Particles and Ensembles: (12L)**

Specification of state of system, Statistical ensembles, Basic Postulates, Probability calculations, Behaviors of density of states, Thermal, Mechanical and general interactions

Micro canonical Ensemble (Isolated System), Canonical ensembles, simple application of canonical ensemble, Molecules in Ideal gas, Calculation of mean values in canonical ensemble.

Problems.

**4: Introduction to Quantum Statistics: (6L)**

Quantum distribution function, Maxwell-Boltzmann's statistics, Bose-Einstein Statistics, Fermi-Dirac Statistics, Comparison of the distributions. Applications of Quantum Statistics, Problems.

**Reference books:**

- 1) Lokanathan, R.S. Gambhir, Statistical and Thermal physics
- 2) F. Reif, Fundamentals of statistical and thermal physics
- 3) A. Beiser, Perspectives of modern physics
- 4) B.B. Laud, Fundamental of Statistical Mechanics
- 5) R.B. Singh, A primer of Statistical Mechanics
- 6) Gupta, Kumar, Statistical Mechanics

**1: Nuclear Structure, Properties and Radioactivity:**

**(12 L)**

a) Basic Concept of Nucleus:

- Composition, charge, size, density of nucleus(Revision)
- Nuclear Angular momentum,
- Nuclear magnetic dipole moment
- Electric quadrupole moment, Parity & symmetry,
- Mass defect and Binding energy, packing fraction,
- Classification of nuclei,
- Stability of nuclei (N Vs Z Curve)
- Day to day applications of Nuclear Physics
- Problems.

b) Radioactivity:

- Radioactivity disintegration (concept of natural and artificial radioactivity, Properties of  $\alpha$ ,  $\beta$ ,  $\gamma$ -rays, Laws of radioactive decay, half-life, mean life, Specific activity and its units (Revision)
- Successive disintegration and equilibriums and radioisotopes.
- Radiocarbon dating
- Application of radioactivity (Agricultural, Medical, Industrial, Archaeological).
- Problems

Ref.(1) Ch.(2,3), Ref.(3) Ch.(3, 6)

**2: Particle Accelerator and Radiation Detectors:**

**(06 L)**

a) Particle Accelerators:

- Introduction and Classification
- Linear Accelerator (electron/proton LINAC)
- Cyclic Accelerator (Cyclotron)
- Particle Accelerators In India (Discussion only)

Ref.(1) Ch.(12)

b) Nuclear Detector:

- Classification of Nuclear Detectors
- Gas filled Detectors (G. M. counter)
- Solid state detectors (scintillation counter)
- Problems:

Ref.(2) Ch.(4), Ref.(3) Ch.(7, 15)

**3: Nuclear forces and Nuclear Models:**

**(09 L)**

a) Nuclear Forces:

- Classification of Nuclear Forces

- Meson theory of nuclear forces,
- Properties Of nuclear forces, properties of deuteron system,
- Elementary particles,

b) Nuclear Models:

- Quarks model for elementary particles
- Shell Model: Assumptions, Evidences, and Spin and Parity limitations.
- Liquid drop model: Assumptions
- Semi-empirical B.E. formula
- Problems:

Ref.(1) Ch.(9, 17, 18), Ref.(3) Ch.(18)

**4: Nuclear Reactions and Reactor Theory:**

**(09 L)**

a) Introduction to Nuclear reactions:

- Nuclear Reaction, Conservation laws (Revision)
- The Q-value equation, Exothermic and Endothermic reaction
- Compound nucleus
- Threshold energy
- Nuclear cross-section
- Nuclear fission , nuclear fusion stellar energy, chain reaction and critical mass,

b) Reactor Theory:

- Nuclear reactor and its basic components, homogeneous and heterogeneous reactors, power reactor, fast breeders
- Nuclear Reactors In India (Discussion only)
- Problems.

Ref.(1) Ch.(14, 15), Ref.(3) Ch.(11, 13, 14)

**Reference books:**

1. Dr. S. N. Ghoshal, Nuclear Physics, Revised Edition, S. Chand Publication, 2014
2. D. C. Tayal, Nuclear Physics, Revised Enlarged Edition, Himalaya Publishing House.
3. K.S. Krane, Introductory Nuclear Physics, Wiley, India, 1988
4. B. L. Cohen, Concepts of Nuclear Physics, Tata McGraw Hill
5. I. Kaplan, Nuclear Physics, 2nd Edition, Narosa, New Delhi, 1989
6. S.B. Patel, Nuclear Physics: An Introduction, New Age International, 1991



**1: Semiconductor Devices:**

**(9L)**

- a. LED and Photodiode, Optocoupler. (Working Principles) Problems. Ref. 1.
- b. BJT: Transistor amplifier classifications - Class A, B, C and AB (working only), Differential amplifier (transistorized), Problems. Ref. 1.
- c. Field Effect Transistor: JFET (Introduction, classification, principle, working and IV characteristics) MOSFETs (DE-MOSFET and E only MOSFET). Problems. Ref. 1

**2: Applications of Semiconductor Devices:**

**(9L)**

- a. Three Pin Regulators: Block diagram of 3-pin IC regulator, study of IC-78XX, 79XX. Dual Power Supply using IC-78XX, 79XX. Ref. 1
- b. Switching Regulators (SMPS): Introduction, Block diagram, Advantages and Disadvantages. Ref. 4
- c. Modulation and Demodulation : Concept of Carrier Wave, Need of Modulation and Demodulation, Methods of Modulation like AM, FM, PM (Concepts Only),
- d. Concept of Modulation Index, Upper and Lower Side Band Frequencies in AM. Problems, Ref.3

**3: Integrated Circuits:**

**(9L)**

- a. Integrated Circuits: Introduction, Scale of Integration, Advantages and drawbacks of IC Ref.4
- b. OP-AMP Applications as Integrator, Differentiator, Comparator. Ref. 1
- c. Timer IC-555: Block diagram, Astable, monostable multivibrator (working and design). Problems, Ref. 1

**4: Combinational and Sequential Circuits:**

**(9L)**

- a. Combinational Circuits: Introduction to SOP and POS equation. Concept of Standard SOP and POS equation. Concept of K-map and their use in reduction of Boolean expressions, design of half adder, full adder, half subtract, Study of binary to gray and gray to binary code conversion. Problems. Ref. 2
- b. Sequential Circuits: RS flip flop using NAND/NOR, clocked RS, D, JK and T-flip flops. Application of flip flops in Sequential Circuits as Counters and Registers. Asynchronous and Synchronous Counters. (3-bit Counter), Shift Registers and their types of operation -SISO, SIPO, PISO, PIPO (Concepts only). Ref. 2

**Reference books:**

1. Malvino, Electronic Principles (6<sup>th</sup> Ed.), Tata McGraw Hill, New Delhi
2. R. P. Jain, Modern Digital Electronics (3<sup>rd</sup> Ed.), Tata McGraw Hill, New Delhi
3. B. L. Theraja, Basic Electronics - Solid State, S. Chand and Company, New Delhi
4. K. R. Botkar, Integrated Circuits, Khanna Publishers, Delhi

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-365 (B): Advanced Electronics**

**Lectures: 36**

**(Credits-02)**

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**(Important Note:** This course is designed for the student who has offered Electronics as one of the subjects at S.Y.B.Sc. level)

**1: Sensors:**

**(9L)**

Introduction to Sensors: Revision of temperature measurement and Pressure Measurement.

Motion sensors: Types of motions, Accelerometers' principles, Types of accelerometers, applications.

Optical sensors:

Photo detectors, Photo detector characteristics, photoconductive detectors, photo voltaic detectors, Photodiode detectors, photo emissive detectors.

Pyrometry: Thermal radiation, Broadband pyrometers, Narrowband pyrometers.

Optical sources: Conventional light sources, Laser light sources and principles.

Applications: Label inspection, Turbidity, Ranging.

**2: Analog Signal Conditioning:**

**(11L)**

Introduction to analog and digital signals: Analog Multiplexer and De-Multiplexer using Ic-4051, Ideal & Practical characteristics of Low Pass, High Pass, band pass and band reject filters. 2nd order active low pass and high pass filter using op-amp. Instrumentation amplifier using 3-OP-AMP, Application of Instrumentation Amplifier as thermocouple signal conditioning. Interpretation of integrator and differentiator as low pass and high pass filters respectively.

**3: Digital signal conditioning:**

**(10L)**

Digital Multiplexer and De-Multiplexer using NAND gate, Priority encoder using Ic-74148, Decoders: 2 to 4 decoder and 3 to 8 Decoder.

Signal Converters:

DAC: R-2R ladder type DAC, Binary weighted DAC.

ADC: Single slope ADC, Successive Approximation ADC, Flash ADC.

Data Acquisition System using 3-channels

**4: Introduction to Process Control:**

**(6L)**

Block diagram of Process control, Process control using ON-OFF controller, Op-amp and temperature sensor, Process control using Proportional Control Logic, Definition of Process LAG, and Problems.

**Reference books:**

1. C.D. Johnson, Process Control Instrumentation Technology, Pearson Education, 8<sup>th</sup> edition.
2. Krishna Kant, Computer Based Industrial Control, Eastern Economic Edition
3. Rangan, Mani, Sharma, Instrument of Device System
4. B. C. Nakra, K. K. Chaudhari, Instrument measurement and analysis

# PHY-356: Elective-II

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-366 Elective-II (O): Medical Electronics**

**Lectures: 36**

**(Credits-02)**

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- 1: Introduction:** (9L)
- 1.1 Terminology of medical instrumentation,
  - 1.2 Physiological system of body
  - 1.3 Sources of bioelectric signals,
  - 1.4 Origin of bioelectric signals,
  - 1.5 Analysis of ECG pattern
  - 1.6 Nernst equation
  - 1.7 Various types of bioelectric signals,
  - 1.8 Basic medical instrumentation system,
- Problems  
Ref: 1
- 2: Bio potential Electrodes and sensors:** (9L)
- 2.1 Electrode-electrolyte interface,
  - 2.2 Polarizable and non-polarizable electrodes,
  - 2.3 Electrodes for ECG, EEG, EMG,
  - 2.4 Resistive sensor
  - 2.5 Capacitive sensor
  - 2.6 Inductive sensor
  - 2.7 Piezoelectric sensor
  - 2.8 Temperature sensor
- Problems  
Ref: 2
- 3: Amplifiers and Signal Processing:** (9L)
- 3.1 Introduction
  - 3.2 Basic amplifier requirements
  - 3.3 The Differential amplifier
  - 3.4 Common mode rejection
  - 3.5 Instrumentation amplifier
  - 3.6 Isolation amplifier
  - 3.7 Patient safety
  - 3.8 Cardiac monitor
- Problems  
Ref: 2
- 4: Measurements of Pressure and Volume Flow of Blood:** (9L)
- 4.1 Direct measurements of blood pressure,
  - 4.2 Indirect measurements of BP.
  - 4.3 Heart sounds,

- 4.4 Phonocardiography,
  - 5.4 Ultrasonic blood flow meter
  - 5.5 Laser Doppler blood flow meter
- Ref: 1

**Reference books :**

1. Handbook of Biomedical Instrumentation, R.S. Khandpur
2. Medical Instrumentation application design, John G Webster, Houghon Mifflin Co.
3. Clinical Biophysics, P. Narayanan
4. Introduction to biomedical equipment technology J. Carr and John M. Brown
5. Introduction to Biomedical Electronics, Joseph DfuBovy, Mc Graw Hill.

**List of Experiments: (Any Two)**

1. Measurement of BP using Mercury sphygmomanometer and digital BP monitor
2. Study of ECG machine. Gain, chart speed arrangements and positioning electrodes
3. Recording of ECG and its analysis.
4. Absorbance using calorimeter/ Absorption spectra using Spectrophotometer.
5. Pulse oximetry. Measurement of SpO<sub>2</sub>
6. Use of thermal scanner/Thermal gun
7. Study of glucometer as a sensor and measurement of BSL

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-366 Elective-II (P): Physics of Nanomaterials**

**Lectures: 36**

**(Credits-02)**

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**1: Introduction to nanomaterials:**

**(10 L)**

- Introduction to Nano-sized materials and Structures
- Significance of Nano-size
- Properties of Nanomaterials: Mechanical, Electrical, Thermal and Optical properties
- Classification of nanostructured materials

**2: Methods for Synthesis of Nanomaterials:**

**(08 L)**

- Bottom-up and Top-down approaches
- Classification of Synthesis Techniques: Vapour phase and Liquid phase approach.
- Synthesis Methods: Thermal Evaporation, Sputter deposition, Colloidal method, Sol-gel Method, Chemical Vapour deposition and Electrochemical Deposition.

**3: Characterization techniques:**

**(08 L)**

- Over view of structural characterization of nanomaterials by XRD
- Microstructural characterization and elemental analysis of nanomaterials using Scanning electron microscopy (SEM) and Energy Dispersive Spectroscopy (EDS)
- Structural characterization of nanomaterials using Transmission electron microscopy (TEM)
- Optical characterization of nanomaterials using UV- visible spectroscopy

**4: Special nanomaterials:**

**(04 L)**

- Carbon nanotubes, their types and properties
- Quantum dots and their properties

**5: Applications:**

**(06L)**

- Nanomaterials for application in Nano-electronics, Cosmetics, Medical, Biosensors Automobiles, Space, Sports, Cloth industry etc.
- Nanomaterials for environmental pollution monitoring and reduction etc.
- Nanomaterials for energy generation and storage

**Reference books :**

1. Nanotechnology: Principles and Practices by Sulbha Kulkarni, Capital Publishing Co. New Delhi.
2. Introduction to nanotechnology, by C. P. Poole Jr. and F. J. Ownes, Willey Publications.
3. Origin and development of nanotechnology by P. K. Sharma, Vista International publishing house.
4. Nanostructure and nanomaterials synthesis, Properties and applications, by G. Cao, Imperials College Press, London.
5. The chemistry of nanomaterials: Synthesis, properties and applications, C. N. R. Rao, A. Muller, A. K. Cheetham (Eds) Wiley VCH Verlag GmbH & Co, Weinheim, 2004.

**List of experiments: (Any Two)**

1. Synthesis of metallic nanoparticles by wet chemical method.
2. Synthesis of Metal Oxide Nanoparticle using different techniques.
3. Synthesis of silver nanoparticles from silver nitrate by colloidal solution method.
4. Study of optical absorption of nanoparticles.
5. Determination of crystallite size from X-ray diffraction spectra.

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-366 Elective-II (Q): Microcontrollers**

**Lectures: 36**

**(Credits-02)**

**1: 8051-Architecture:**

**[10L]**

- 1.1 Comparison of Microprocessor and Microcontroller,
- 1.2 Intel 8051 Microcontroller: Block Diagram and Functions of each block, Pinout details, A and B CPU registers, Program status word (PSW) register, Program Counter, Data Pointer, Stack and Stack Pointer.
- 1.3 Memory Organization of 8051, Internal RAM, Register Banks, Special function registers, Internal ROM, I/O Ports and their functions, Oscillator and Clock.

**2: 8051-Assembly Language Programming:**

**[16L]**

- 2.1 Introduction to 8051 Assembly programming, 8051 data types and assembler directives, Different Addressing modes, Concept of Unsigned and Signed numbers.
- 2.2 Instruction Set of 8051 microcontroller: Data Transfer instructions, Arithmetic Instructions, Logic and compare instructions, rotate instructions, Branch (Jump, Call RET) instructions.
- 2.3 Use of Instruction Set in Assembly Language Programming.

**3: 8051-Interrupts, Timers/Counters and Serial Communication:**

**[10L]**

- 3.1 Interrupts and their vector structure, IE register, Interrupt priority in the 8051
- 3.2 Timers and Counters: Use of Basic Registers in Programming 8051 timers, Timer/ Counter Operation modes. Problems on Timer clock frequency and its Period.
- 3.3 Basics of Serial Data Communication, Types of Serial Data Communication, Concept of Baud Rate, RS 232 Standards, 8051 connection to RS 232, Functions of SBUF and SCON Registers.

**Reference Books:**

1. 8051 Microcontroller by Kenneth J. Ayala.
2. 8051 Microcontroller and Embedded Systems using Assembly and C by Mazidi and D Mac Kinlay, 2006 Pearson Education Low Price Edition.
3. 8051 Microcontroller – Hardware, Software and Applications by V Udayashankara, M S Mallikarjunaswamy, McGraw Hill Education (India) Pvt.Ltd, New Delhi.
4. Microprocessor and Microcontroller by R. Theagarajan, Sci Tech Publication, Chennai
5. Programming customizing the 8051 Microcontroller by Myke Predko, Tata McGraw Hill

**List of Experiments: (Any Two)**

Use Keil / Pinacle software for:

1. Addition of two 16 bit numbers
2. Multiplication of two 8 bit numbers.
3. Write a program to find largest/smallest number of N numbers in given block.
4. Memory block transfer from one location to another.
5. Find one's and two's complement of given number.
6. Subtraction two 8 bit numbers using two's complement method.

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-366 Elective-II (R): Lasers**

**Lectures: 36**

**(Credits-02)**

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- 1: Introduction to Lasers:** (8 L)  
Brief history of Lasers, Interaction of radiation with matter, Energy levels, Population density, Boltzmann distribution, Stimulated Absorption, Spontaneous Emission and Stimulated Emission, Einstein's Coefficients, Einstein's relations.  
Characteristics of Laser: Directionality, Mono-chromaticity, Coherence,
- 2: Laser Action:** (6 L)  
Population inversion, Condition for light amplification, Gain coefficient, Active medium, metastable states.  
Pumping schemes: three level and four level
- 3: Laser Oscillator:** (6 L)  
Optical feedback, round trip gain, critical population inversion, Optical resonator, condition for steady state oscillations, cavity resonance frequencies.
- 4: Laser Output:** (3 L)  
Line-shape broadening: Lifetime broadening, Collision broadening
- 5: Types of Lasers:** (7 L)  
Solid State Lasers – Ruby Laser, Diode Laser, Gas Lasers – HeNe Laser, CO<sub>2</sub> Laser
- 6: Applications of Lasers:** (6 L)  
Industrial: welding, cutting, drilling  
Nuclear Science: laser isotope separation, laser fusion,  
Medical: eye surgery

**Reference books:**

1. An introduction to Lasers - Theory and applications, M.N. Avadhanulu, S. Chand and Co. New Delhi
2. Experiments with He-Ne Laser by Sirohi
3. Optical fibre and Laser - Principle and applications, Anuradha De, New Age International Publishers,

**List of Experiments: (Any Two)**

1. Determination of wavelength of He-Ne Laser by transmission grating
2. Determination of Angle of prism (Pin and drawing paper)
3. Study of Lissajous figures using diode Laser and mirrors
4. Beam divergence of a Diode Laser.
5. Determination of the diameter of a thin wire using a laser.
6. Measurement of wavelength of Laser beam using Michelson Interferometer.
7. To study the interference of light using optical fibers
8. Measurement of the focal length of a given convex lens using a laser.



**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-366 Elective-II (S): Astronomy and Astrophysics-II**

**Lectures: 36**

**(Credits-02)**

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**1: Astronomical Scales: (10 L)**

Measurement of Astronomical Quantities, Astronomical Distances, Stellar Radii, Masses of Stars, Stellar Temperature, Measurement of Time, Sidereal Time, Apparent Solar Time, Mean Solar Time, Equation of Time, Astronomical Coordinate system (only introduction)

**2: The Milky Way and Universe: (8 L)**

Basic Structure and Properties of the Milky Way, Active Galaxies, Quasars and Radio Galaxies, Hubble's law with equation, its significance, Concept of space time, fate of our universe, Multiverse (only introduction)

**3: The Stellar Phenomenon: (10 L)**

Basic Composition of Interstellar Medium, Sun: Solar Cycle, Activity, Butterfly diagram, Photospheric phenomenon, Stars as distance estimators, Hydrostatic Equilibrium of a Star, Stellar models (only introduction).

**4: Non-optical Astronomy: (8 L)**

Basic parameters of an antenna, various types of antennas. UV, IR, X-ray and Gamma ray Telescopes, Detectors for optical and infrared regions. Orbiting space based telescopes: HST, Chandra.

**List of Reference Books:**

1. Astronomy structure of the Universe, A. E. Roy and D. Clarke, Adam Hilger Pub.
2. Source Book of Space Sciences, Samuel Galsstone; D. Van Nostrand Co. Inc
3. Astrophysics - Stars and Galaxies, K.D. Abhyankar, Tata McGraw Hill Pub.
4. Textbook of Astronomy and Astrophysics with elements of cosmology, V.B. Bhatia, Narosa Pub.
5. Structure of the Universe, J.V. Narlikar
6. Astrophysics, Baidyanath Basu.
7. Astrophysical Techniques, third Edition, C. R. Kitchin
8. Fundamentals of Astronomy, Michael Seed
9. Telescopes and techniques, C. R. Kitchin (Springer)

**List of experiments: (Any Two)**

1. To determine the temperature of an artificial star.
2. To observe the Fraunhofer lines in sunlight and determine the elements present.
3. To obtain the solar image on the screen and trace out the existing sunspots.
4. To locate and observe the various stars, constellation, planets. (At least 2 observation of each)
5. To polar Align an astronomical telescope.
6. To study the solar limb darkening effect.

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-366 Elective-II (T): Renewable Energy Sources-II**

**Lectures: 36**

**(Credits-02)**

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**1: Bioenergy and Biofuels:**

**(10L)**

**Bioenergy:**

1. Introduction to Bioenergy
2. Basic Routs: Biochemical, Thermochemical, Transesterification
3. Biochemical- Biogas generation/methanation
4. Biogas plant: Floating gas holder and fixed dome type biogas plant, construction and working
5. Factors affecting on bio-digestion (list of factors).
6. Thermochemical: Pyrolysis, Gasification, Carbonization
7. Transesterification:
8. Comparative study of floating gas holder and fixed dome type biogas plant.
9. Working of downdraft gasifier.
10. Various methods to obtain energy from biomass.

**Biofuel:**

1. Introduction to Biofuels
2. Production of Biofuels (Jatropha and Sugar cane bagasse)

Ref 1: 7.1, 7.2, 7.2.1, 7.2.2, 7.4, 7.5, 7.6, 7.7, 7.8, 7.11, 7.23, 7.24.1

Ref 2: 10.3 (page no 374 to 380)

**2: Wind Energy**

**(08L)**

1. Introduction to wind energy.
2. Principles and components of wind energy conversion system.
3. Classification of wind machines: Horizontal axial machine and vertical axial machine.
4. Advantages and disadvantages of wind energy.
5. Wind data

Ref -1: 6.1, 6.2, 6.3, 6.5, 6.7, 6.8

**3: Other Energy Sources:**

**(08L)**

1. Introduction to tidal and geothermal energy.
2. Tidal energy: methods of utilization of tidal energy.
3. Advantages and disadvantages of tidal power generation.
4. Geothermal energy: Geothermal sources and energy conversion.
5. Advantages and disadvantages of geothermal energy.
6. Introduction to Thermocell

Ref -1 (9.3), pages from 510-532),

Ref -1 (8), pages from 443, 470-476, 477) Ref -1 (11), pages from 609-657)

**4: Energy Management:**

**(10L)**

1. Introduction to Energy Management (Definition, Principles etc)
2. Need of Energy Saving and Management
3. Different strategies of Energy Management
4. Role of Energy Managers and Auditors,

5. Energy Audit Measurements and Instruments, and Preparation of Energy Audit Report (in brief).
6. Case studies of Energy Audit & Management (e.g. Industries & Green Buildings, Boilers, Furnaces, Refrigeration and Air conditioning, Cogeneration, Waste Heat recovery, Electric motors, Pumping systems, Fans and blowers, Cooling Towers, Industrial/Commercial Lighting system, BEE Star rated equipment) any one.

Ref- 4 to 12 - Use any book for reference

**Reference books:**

1. Non-conventional Energy Sources, G. D. RAI (4th edition), Khanna Publishers, Delhi.
2. Solar Energy, S.P. Sukhatme (second edition), Tata Mc Graw Hill Ltd, New Delhi.
3. Solar Energy Utilisation, G. D. RAI (5th edition), Khanna Publishers, Delhi.
4. Energy Management: W.R.Murphy, G.Mckay (Butterworths).
5. Energy Management Principles: C.B.Smith (Pergamon Press).
6. Efficient Use of Energy: I.G.C.Dryden (Butterworth Scientific)
7. Energy Economics -A.V.Desai (Wiley Eastern)
8. Industrial Energy Conservation: D.A. Reay (Pergammon Press)
9. Energy Management Handbook – W.C. Turner (John Wiley and Sons, A Wiley Inter science publication)
10. Industrial Energy Management and Utilisation –L.C. Witte, P.S. Schmidt, D.R. Brown (Hemisphere Publication, Washington)
11. Hand book of Energy Audit by Sonal Desai (Publisher Tata McGraw Hill.)
12. Energy Management and Conservation Handbook, Frank Kreith and Yogi Goswami, (CRC Press)

**List of Experiments: (Any Two)**

1. Fuel value of wood/charcoal.
2. Study of sensible heat storage using liquid.
3. Selective and Non-selective coatings – Determination of Selectivity ratio.
4. To do energy audit of home/society/college/industry and prepare a detail audit report.
5. Study and analysis of home Electricity Bill
6. Study of Power consumption of conventional tube light vs LED fitting

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-367: Physics Laboratory-4A**

**Lectures: 36**

**(Credits-02)**

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**(General Physics, Thermodynamics and Statistical Physics, Nuclear Physics and Quantum Mechanics)**

**(Any Eight)**

**GROUP-I: GENERAL PHYSICS (any FOUR)**

1. Surface Tension of Mercury by method of Ripples.
2. Viscosity of Liquid by rotating cylinder method.
3. Coefficient of sound absorption
4. 'Y' by Cornu's Method
5. Hall Effect: To measure the Hall coefficient
6. Energy gap of a semiconductor
7. Study of XRD spectrum of any material.
8. Resistivity by Four probe method
9. Platinum resistance thermometer

**GROUP-II: THERMODYNAMICS AND STATISTICAL PHYSICS (any TWO)**

1. Determination of pressure coefficient of air by constant volume thermometer.
2. Verification of Stefan's fourth power law by bulb filament
3. Thermal conductivity by Forbes Method.
4. Thermal conductivity of rubber tube.
5. Thermal diffusivity of Brass.
6. Thermal and Electrical conductivity of Cu.

**GROUP-III: NUCLEAR PHYSICS AND QUANTUM MECHANICS (any TWO)**

1. Characteristics of G.M. tube
2. Inverse square law ( $\gamma$ -rays)
3.  $e/m$  by Thomson method
4. Determination of Planck's constant
5. Study of Gaussian distribution by G. M. tube.

**Additional Activities (Any ONE)**

- Demonstrations: Any 2 demonstrations equivalent to 2 experiments
- Study tour with report equivalent to 2 experiments
- Mini project equivalent to 2 experiments
- Computer aided demonstrations (simulations or animations)  
(Any 2 demonstrations equivalent to 2 experiments)

*Note: Students have to perform **ten** experiments or **one** additional activities in addition to **eight** experiments mentioned above. Total laboratory work with additional activities should be equivalent to **ten** experiments.*

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-368: Physics Laboratory-4B**

**Lectures: 36**

**(Credits-02)**

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(Electronics (Essential) or Advanced Electronics, acoustics and Lasers, Optional Courses)

(Any Eight)

**GROUP-I: ELECTRONICS (ESSENTIAL) (any TWO)**

(For the students not offering advance electronics in theory courses)

1. Characteristics of JFET
2. Design and built astable multivibrator using IC 555/IC 741
3. Half adder /Full adder
4. Integrator and differentiator using IC 741
5. IC 723 as regulated power supply

**GROUP-I: ADVANCED ELECTRONICS (any TWO)**

(For the students offering advance electronics in theory courses)

1. Instrumental amplifier using three op-amps
2. Temperature controller using PT 100 / thermocouple /thermistor temperature sensors
3. Object counter (two digit)
4. Schmitt trigger
5. Study of LVDT

**GROUP-II: ACOUSTICS AND LASERS (any FOUR)**

1. Frequency response of loudspeaker (twitter, woofer, mid-range)
2. Study of interference by Quinck's method
3. Use of Ultrasonic interferometer to measure velocity of sound in liquids
4. Transmission loss using expansion chamber muffler.
5. Study of diffraction using a transmission/reflection grating (metal ruler)
6. Study of the characteristics of a laser beam.
7. Determination of the diameter of a thin wire using a laser beam.
8. ' $\mu$ ' By total internal reflection of light

**GROUP-III: PRACTICAL FROM OPTIONAL COURSE (Any-2)**

**Additional Activities (Any ONE)**

- Demonstrations: Any 2 demonstrations equivalent to 2 experiments
- Study tour with report equivalent to 2 experiments
- Mini project equivalent to 2 experiments
- Computer aided demonstrations (simulations or animations)  
(Any 2 demonstrations equivalent to 2 experiments)

*Note: Students have to perform **ten** experiments or **one** additional activities in addition to **eight** experiments mentioned above. Total laboratory work with additional activities should be equivalent to **ten** experiments.*

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-369: Physics Project-II**

**Lectures: 36**

**(Credits-02)**

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**Guidelines:**

It is expected that,

1. The student does work equivalent to about 10 laboratory experiments throughout the semesters in the third year.
2. One bears in mind that the project work is a practical course and it is intended to develop a set of skills pertaining to the laboratory work apart from the cognition of students. Therefore, the guides should not permit projects that involve no contribution on part of student.
3. The project must have a clear and strong link with the principles of basic physics and/or their applications.
4. The theme chosen should be such that it promotes better understanding of physics concepts and brings out the creativity in the students.
5. The evaluation of the project work must give due credit to the amount of the project work actually done by a student, skills shown by the student, understanding of the physics concepts involved and the presentation of the final report at the time of viva voce.
6. The viva voce should be conducted at the time of evaluation of project work at least for twenty minutes per student. Extra care must be taken in the evaluation of projects done in a pair or group. Delegation of the work done by individuals must be sought from the students in such cases.
7. Any ready-made material used in the report (such as downloaded pages from the web) must be clearly referred to and acknowledged.
8. It is also recommended that a teacher will look after 4 projects at one time.
9. Any non-adherence to this norm should attract a penalty by way of deduction in the marks awarded to a student. It is recommended that the College will provide consumables/contingencies for every project, to the tune of Rs. 750 /- each. (\*If the students paid extra fee other than laboratory fee then college will provide financial assistance for the Project work.)

**The Project work shall consist of the following Criteria.**

- 1) Working model (Experimental or Concept based simulation/Demonstration Related to Physics).
- 2) Understanding of the project.
- 3) Experimental Details.
- 4) Data collection and Data Analysis.
- 5) Innovation.
- 6) Outcomes/Result.
- 7) Conclusion.

**Note:** At the time of project practical examination, the candidate must submit the certified project report by the project in-charge and HOD. A candidate will be allowed to appear for the Project practical examination only if the candidate submits a project completion report duly certified by the project in-charge and Head of the department.

**The Project work shall include:**

Models based / Demonstrated Applications / Review articles / Simulation on PC on any concept in Physics / Comparative & differentiative study / Improvement in the existing experiment (Design and fabrication concept) / Extension of any regular experiments / Attempt to make experiment open-ended / Thorough survey of existing active components / devices, ICs, methods, means, technologies, generations, applications etc. / any innovative projects using the concept of Physics / Interdisciplinary areas.

**Evaluation weightage:**

- Semester End University Examination : 35 Marks
- Internal Examination: 15 Marks

# Skill Enhancement Courses



## Skill Enhancement Courses (SEC)

### a) Selection of Skill enhancement courses

There are two skill enhancement courses (SEC) in 6<sup>th</sup> semester (PHY-3610 and PHY-3611). For 6<sup>th</sup> semester, there are four options available. The college has to select any one from the given four options. It is advised that college should not offer elective and skill enhancement course of same theme.

### b) Teaching Learning process for Skill Enhancement Courses

Skill base courses are intended to explore the applications of physics knowledge. Learning in skill enhancement courses is largely experience based. The skill enhancement courses may be categorized as knowledge skill or technical skill. For knowledge skill courses one can use the conventional method for teaching along with problem solving, assignments seminars etc. For acquiring the technical skill, the students will get adequate 'hands-on' experience. The teachers may use demonstrations and activity-based learning techniques. On field visits, study tour and mini projects will enrich the learning experience of the students.

### c) Assessment methods for skill enhancement courses

Continuous evaluation will be the best method for assessment of skill enhancement courses.

One can use tools like assignments, mini projects or activities, problems, etc and grade the students according to their performance. The internal assessment should have 50 % weightage.

The University examination may be conducted for the remaining 50%.

The University examination question paper should have adequate proportion of objective and subjective question.

### d) List of Skill Enhancement Courses:

Semester-VI <sup>th</sup>	Semester-VI <sup>th</sup>
PHY-3610	PHY-3611
PHY-3610(U): Scientific Data Analysis using Python	PHY-3611(Y): Microcontrollers
PHY-3610(V): Solar PV System: Installation, Repairing and Maintenance	PHY-3611(Z): Instrumentation for Agriculture
PHY-3610(W): Applications of Internet of things (IOT)	PHY-3611(AA): Radiation Physics
PHY-3610(X): Calibration Techniques	PHY-3611(AB): Photography

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Pre-requisite	: Basic knowledge of computer programming (Python/c)
Mode of internal Assessment	: A small project analysing scientific data for visualization
Data sets may include	: Pollution Data, Rain data, Astronomical data, any scientific data Related to Physics or science in general
Sources of Data sets	: MERI, Nashik, AIUCAA Pune, NASA or similar 1. Website for competition: <a href="https://www.kaggle.com/">https://www.kaggle.com/</a> 2. Google dataset: <a href="https://datasetsearch.research.google.com/">https://datasetsearch.research.google.com/</a> 3. Data for visualization and dataset resources: <a href="https://dev.to/aspittel/my-favorite-data-visualization-and-dataset-resources-35kp">https://dev.to/aspittel/my-favorite-data-visualization-and-dataset-resources-35kp</a> Other potentially useful searches: 1. <a href="https://bigdata-madesimple.com/70-amazing-and-free-data-sources-for-data-visualization/">https://bigdata-madesimple.com/70-amazing-and-free-data-sources-for-data-visualization/</a> 2. <a href="https://eduinpro.com/blog/data-sets-for-data-visualization-projects-datascience/">https://eduinpro.com/blog/data-sets-for-data-visualization-projects-datascience/</a>

Learn how to analyses data using Python. This course will take you from the basics of Python to exploring many different types of data. You will learn how to prepare data for analysis, perform simple statistical analyses, create meaningful data visualizations, predict future trends from data, and more

Student will learn how to:

- Import data sets, access different elements of data frames.
- Understand the functions available in existing Python modules.
- Understand the utility of functions available in NumPy and Pandas library.
- Clean and prepare data for analysis
- Manipulate pandas Data Frame
- Understand awareness with different types of basic charts and functions in matplotlib library
- Get exposure to visualization techniques from seaborn library
- Build data pipelines

Data Analysis with Python is delivered through lecture, hands-on labs, and assignments. It includes following parts:

- Data Analysis libraries: will learn to use Pandas Data Frames, Numpy multi-dimensional arrays, and SciPy libraries to work with a various datasets. We will introduce you to pandas, an open-source library, and we will use it to load, manipulate, analyze, and visualize cool datasets. Then we will introduce you to another open-source library, scikit-learn, and we will use some of its machine learning algorithms to build smart models and make cool predictions.

#### **Outcome of the course**

- Know basic notions and definitions in data analysis.
- Know standard methods of data analysis and information retrieval.
- Be able to formulate the problem of knowledge extraction as combinations of data filtration, analysis and exploration methods.
- Be able to translate a real-world problem into mathematical terms.

## Syllabus:

Unit No.	Topics	Lectures
I	<b>Data Structures, modules and Importing Datasets</b> Lists: Creating list, accessing list elements, functions for lists, programming with lists Tuples: Creating Tuples, accessing list elements, functions for Tuples, programming with Tuples Dictionary: Creating Dictionary, accessing list elements, functions for Dictionary, programming with Dictionary. In Built modules : Math module, random Module, Array module, string Module etc	6
II	<b>Core libraries in Python</b> NumPy Library for Arrays Pandas Library for Data Processing Basics of data frames, create, adding/ deleting of rows, columns to data frames Import of data, functions of data frames Data Normalization Sets, data extraction using relational, logical operators. Group by functionality, missing values	6
III	<b>Summarizing the Data Frame and visualization</b> Matplotlib Library for visualization: Pie chart, violin plot, scatter plot, histogram, bar chart, area plot. Seaborn Library for Visualization: Box plot, point plot, line plot, count plot, bar plot, strip plot, scatter plot and Regression Plot	6

### **Activity: Hands on data Analysis and Visualization with Pandas**

[18L]

Note: For Internal assessment students will either do **any-6 activities** related to data analysis and visualization on particular dataset or will carry out small project on analysis or visualization using science (preferably physics) related dataset.

### **Reference Books:**

- Python Programming: Using Problem Solving Approach - Reema Thareja.
- Let us Python - Aditya Kanetkar
- Learning with Pythob - Allen Downey
- Data Analytics - Bharti Motwani

**Objectives:**

1. In this skill oriented course, student will study basics of solar photovoltaic (PV) cells, modules, and system components.
2. Design and sizing of off-grid PV system for homes, apartments as well as commercial offices.
3. Understanding energy conversion from sunlight to electricity, and working with solar conversion equipment.
4. This Course will hands on experience needed to become self-employed.

**Outcomes:**

1. Learn basics of light conversion in electricity.
2. Hands on training will motivate to use Solar PV system.
3. Become entrepreneur / self-employed.
4. Analyzed of MSEB electricity bill and design and sizing of off-grid PV system
5. Participants will learn about solar PV module and batteries used in solar PV plant.

**Syllabus:**

**Unit-1: Introduction**

**(6L)**

The Sun, Earth, and Renewable Energy, Photovoltaic Effect, Working of Solar cell, Types of solar cell, PV Modules and Arrays, Module Parameters, Sunshine and Shadow, tracking mechanism, aligning the Array.

**Unit-2: Solar Radiations and Measurement**

**(6L)**

Introduction, Solar constant, Solar radiation at the earth surface, Need of solar radiation measurement, Instruments for the measurement of solar Radiation, Pyrheliometer, Pyranometer, Sunshine Recorder, Sun Meter or Lux Meter

**Unit-3: Basics Solar PV Systems**

**(6L)**

Basics types of PV Systems on grid and off grid, DC to AC conversion, Building-integrated Photovoltaics, Engineering and Architecture, Balancing of PV system. System Components, Batteries, Charge controllers, Inverters, Hybrid systems, System sizing, Applications of off grid PV System.

**Activity: any-6**

**(18L)**

1. Estimate the value of the Solar Constant.
2. Study of intensity variation on the performance of PV module.
3. Study of series and parallel combination of the PV modules.
4. Measurement of Solar radiation measurement using Sunmeter and Pyranometer.
5. Analysis of MSEB electricity bill.
6. Energy Farm/PV Plant visit report.
7. Study of intensity variation using Sun Meter or Lux Meter.
8. Study of I-V characteristics and working of solar cell.
9. Study of different types of solar cell.
10. Study of Hybrid systems.

**Reference books:**

1. Solar Energy, S.P. Sukhatme (second edition), Tata Mc.Graw Hill Ltd, New Delhi.
2. Solar Energy Utilisation, G. D. RAI (5th edition), Khanna Publishers, Delhi.
3. Electricity from Sunlight, An Introduction to Photovoltaics, Paul A. Lynn, John Wiley & Sons, Ltd.
4. Solar Electricity, 2nd edition, T. Markvart, John Wiley & Sons, Ltd.
5. Solar Photovoltaic Basics, White Sean, Taylor & Francis Ltd.

**Objectives:**

- To introduce the terminology, technology and its applications
- To introduce the concept of M2M (machine to machine) with necessary protocols
- To introduce the C# Language which is used in many IoT devices
- To introduce the Raspberry PI platform, that is widely used in IoT applications
- To introduce the implementation of web based services on IoT devices

**Learning Outcomes :**

- a) IOT concepts
- b) IOT Standards
- c) Components of IOT System.
- d) Relevance of IOT for the future.
- e) IOT Applications.
- f) IOT for smart cities (Case study Smart city Barcelona)
- g) IOT in Indian Scenario
- h) Challenges in IOT implementation.

This subject does not have the intention of being a comprehensive course about the technologies involved in IOT. The focus will be more on the possibilities offered by the different technologies, and on the creative thinking techniques to find innovative applications of combinations of such technologies in real-life scenarios. Some presentations will also be scheduled in which people from industry will make presentations about selected topics related to the IoT. The Internet of Things (IoT) is a course about the new paradigm of objects interacting with people, with information systems, and with other objects. The course will focus on creative thinking and on hands-on project development. The duration of the course is 30 hours. Will be a mix of 75 minutes session and 2 hours session. Lab will be for 5 hours.

**Future Scope:**

It is a system of interrelated computing devices, digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. Internet of Things

**What Internet of Things can do?**

3. Medical Check-up Health Devices Operational Efficiency Medical Report Health Sector
4. Advanced Kitchen Automatic Parking Remote Home Control Security System Smart Home
5. Wi-Fi Connectivity Traffic Control Security System Advanced Parking System Smart City
6. Advanced Power Supply Manufacturing Bill Payment Planning Industrial Automation
7. Let's Take an Example of Internet of Things

● Renewal Energy Source. ● Automatic wearing suit. ● Next Gen way to fly. ● Speech Recognition. ● Perfect example of AI. ● Advanced GPS.

## **Syllabus:**

### **Unit-1: Introduction to Internet of Things**

[4L]

Definition and Characteristics of IoT, Physical Design of IoT – IoT Protocols, IoT communication models, IoT Communication APIs IoT enabled Technologies – Wireless Sensor Networks, Cloud Computing, Big data analytics, Communication protocols,

### **Unit-2: IOT Concepts and introduction**

[5L]

Technologies that led to evolution of IOT, IOT and SCADA, IOT and M2M, IOT and Big Data Requirement of international standard (case study), IOT standards in practice, Operating platforms /systems

### **Unit-3: IOT Applications (case study).**

[4L]

Lighting as a service, Intelligent Traffic systems, Smart Parking, Smart water management, IOT in Indian Scenario

### **Unit-4: Introduction to C#**

[5L]

Language features, commands, functions of C#, Data types, data structures, Control of flow, functions, modules, Packaging, file handling, data/time operations, classes, Exception handling.

**Activity: Any -6** (each case study will be 3-hrs)

[18 L]

- 1) Lighting as a service (case study)
- 2) Intelligent Traffic systems (case study)
- 3) Smart Parking (case study)
- 4) Smart water management (case study)
- 5) IoT for smart cities (Case study-Smart city Barcelona)
- 6) Requirement of international standard (case study)
- 7) Study different functions of C#
- 8) Study how to control of flow of C# program
- 9) Study different data types of C#
- 10) Study various commands used in C#

### **Reference books:**

1. Internet of Things – A Hands-on Approach, Arshdeep Bahga and Vijay Madisetti, Universities Press, 2015, ISBN: 9788173719547
2. Getting Started with Raspberry Pi, Matt Richardson & Shawn Wallace, O'Reilly (SPD), 2014, ISBN: 9789350239759
3. The Internet of Things: How Smart TVs, Smart Cars, Smart Homes, and Smart Cities Are Changing the World Paperback – 26 March 2015 by Michael Miller.

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-3610 SEC (X): Calibration Techniques**

**Lectures: 36**

**(Credits-02)**

**Objective:**

- To make students familiar with the constructions and working principle of different types of Instruments
- To make students aware about the measuring instruments and Calibration of Instrument

**Course Outcomes:** At the end of the course, a student will be able to:

- Calibrate hydraulic, pneumatic and mechanical measuring and control equipment: setting, adjustment, validation or verification of mechanical, pneumatic, hydraulic, measuring and control instruments using reference standards in accordance with predetermined procedures.
- Calibrate electrical and electronic measuring and control equipment: setting, adjustment, validation or verification of electrical, electronic measuring and control instruments using reference standards in accordance with predetermined procedures.
- Carryout maintenance activities on instrumentation and control panel.

**Syllabus:**

**Unit-1: Principles of Calibration**

[4 L]

1. Introduction and Importance of Calibration
2. Traceability in Calibration
3. Calibration Uncertainty
4. Various Calibration Methods
5. Factors Affect Calibration
6. Instrument Classification and Instrument Identification

**Unit-2: Pressure Calibration**

[6L]

1. Introduction to pressure calibration
2. Pressure unit conversion standards
3. Types of Pressure Gauges
4. Calibration of Pressure Gauges
  - a. Accuracy
  - b. Pressure Media
  - c. Contamination
  - d. Height Difference
  - e. Leak test of Piping
  - f. Adiabatic Effect
  - g. Torque Force
  - h. Calibration Position
  - i. Generating Pressure
  - j. Pressurizing the Gauge
  - k. Reading the Pressure Value
  - l. Number of Calibration Points
  - m. Hysteresis (deviation of calibration points)
  - n. Number of Calibration cycles
5. Instruments required for calibration:
  - a. Pressure comparator
  - b. Master Gauge
6. Pressure Calibration with Example

### Unit-3: Calibration of Electronic Instruments

[4L]

1. Identification of Components
2. Equipment required for calibration
3. Procedure of Calibration
  - a. Read operational Specifications
  - b. Sequence of events
  - c. Identification of common Faults
4. Electronic Calibration with Examples (Oscilloscopes, Multimeters, Function Generators, Signal Generators)

### Unit-4: Temperature Calibration

[4L]

1. Temperature units and Conversions
2. Temperature Sensors
3. Calibration of temperature sensors
  - a. Handling temperature sensor
  - b. Preparations
  - c. Temperature sources
  - d. Reference Temperature Sensor
  - e. Immersion Depth
  - f. Stabilization
  - g. Temperature sensor handle
  - h. Calibrated temperature range
  - i. Calibration Points
  - j. Adjusting/trimming a temperature sensor
4. Examples:

#### **Activity: any-6**

[18L]

Calibration of a dial thermometer

- 1) RTD calibration check
- 2) Temperature controller loop
- 3) Calibration of pressure Transmitters
- 4) Calibration of pressure switch
- 5) Level calibration Instrument
- 6) Liquid head measurement
- 7) Calibrating a differential pressure level transmitter
- 8) Calibration of top pan balance
- 9) Calibration of digital balance
- 10) Calibration of PH/Conductivity meter
- 11) Calibration of Volt meter
- 12) Calibration of Current meter
- 13) Calibration of Oscilloscopes
- 14) Calibration of Function Generators

#### **Reference Books :**

- 1) **Calibration:** A Technician's Guide - Mike Cable
- 2) Measurement and Control Basics - Thomas A. Hughes
- 3) Measurement and Control of Liquid Level - Chun H. Cho
- 4) A Practical Book On Calibration Of Analytical Instruments - Dr S Jain ,
- 5) Calibration Handbook of Measuring Instruments - Alessandro Brunelli



**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-3611 SEC (Y): Microcontroller**

**Lectures: 36**

**(Credits-02)**

**Objective:**

- To make students familiar with the constructions and working principle of microprocessor
- To make students aware about microprocessor

**Outcome:** After successful completion of this course students are supposed to develop their own applications/ mini/ tiny projects using microcontroller.

**Syllabus:**

**Unit-1. ARCHITECTURE OF 8051:**

**[05]**

Microprocessor and Microcontrollers a short comparison, Overview of the 8051 family, Block diagram of Microcontroller, Functions of each block, Pin details of 8051, A and B CPU registers, Flags and Program status word (PSW), Program Counter (PC) and Data Pointer register (DPTR), Internal RAM, Stack and Stack Pointer, Special function registers, Memory Organization of 8051, Internal ROM, I/O Ports, Oscillator and Clock

**Unit-2. 8051 ASSEMBLY LANGUAGE PROGRAMMING:**

**[05]**

Introduction to 8051 Assembly programming, Assembling and running an 8051 program, 8051 data types and directives, Jump, loop, and call instructions, 8051 I/O programming, Addressing modes, arithmetic and logical instructions and programs, Signed number concepts and arithmetic operations, Logic and compare instructions, Rotate instructions, BCD, ASCII, and other application programs.

**Unit-3. TIMERS/ COUNTERS AND INTERRUPT PROGRAMMING:**

**[04]**

Timers of 8051, TMOD and TCON registers, Programming timers 0 and 1 in 8051, counter programming, 8051 interrupts, Interrupt priority in the 8051, and Application programs using interrupts.

**Unit-4. INTERFACING TECHNIQUES**

**[04]**

Key/ keyboard (push button) interfacing, interfacing a LCD display, interfacing an ADC and LM35 temperature sensor.

**Activity: any-6**

**[18L]**

1. Addition of two 16 bit numbers using of Kiel/ Pinnacle
2. Multiplication of two 8 bit numbers using of Kiel/ Pinnacle
3. Write a program to find largest/smallest number of N numbers in given block using of Kiel/ Pinnacle
4. Memory block transfer from one location to another using of Kiel/ Pinnacle
5. Find one's and two's complement of given number using of Kiel/ Pinnacle
6. Subtraction two 8 bit numbers using two's complement method using of Kiel/ Pinnacle
7. To run basic programs using IDE/Software
8. Single key / Keyboard Interfacing.
9. ADC/DAC Interfacing.
10. Mini Project (Water level controller, Electronic Thermometer etc.)

**Reference Books:**

1. 8051 Microcontroller by Kenneth J. Ayala.
2. 8051 Microcontroller and Embedded Systems using Assembly and C - Mazidi, Mazidi and D MacKinlay, 2006 Pearson Education Low Price Edition.
3. Microprocessor and Microcontroller by R.

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-3611 SEC (Z): Instrumentation for Agriculture**

**Lectures: 36**

**(Credits-02)**

**Objectives:**

After completion of this course students can

1. Get knowledge of sensors used in agriculture field
2. Learn continuous and batch process
3. Learn greenhouse automation schemes
4. Learn Instrumentation in Irrigation

**Course Outcomes:**

After completion of this course student will

1. Able to test soil and water parameters.
2. Able to develop their own juice extract plant.
3. Able to developed their own green house

**Syllabus:**

**Unit-1: Introduction** **[02L]**

Necessity of instrumentation and control for agriculture, sensor requirement, remote sensing, bio sensors in agriculture.

**Unit-2: Soil Properties & Sensing** **[04L]**

Properties of soil: fundamentals definitions and relationship, index properties of soil, permeability & seepage analysis, shear strength, Mohr's circle of stress, active & passive earth pressures, stability & slopes,

Sensors: introduction to sonic anemometers, hygrometers, fine wire thermocouples, open & close path gas analyzers

**Unit-3: Instrumentation in Continuous & Batch process** **[04L]**

Flow diagram of sugar plant, sensors & instrumentation setup, Flow diagram of fermenter & control (batch process), flow diagram of dairy industry & instrumentation setup for it, Juice extraction control process & instrumentation setup.

**Unit-4: Instrumentation in Irrigation** **[04L]**

Water distribution and management control, Auto drip and sprinkler irrigation system, upstream & downstream control concept, SCADA for DAM parameters & control.

**Unit-5: Greenhouse Parameters & Instrumentation** **[04L]**

Greenhouse effect, Concept and construction of greenhouse, merits & demerits, ventilation, cooling & heating, wind speed, temperature & humidity, soil moisture, rain gauge, carbon dioxide enrichment measurement & control, Leaf area length *evapotranspiration*, temperature, wetness & respiration measurement & data logging, electromagnetic radiations photosynthesis.

**Activity : any-6** **[18L]**

- 1) Measurement of water holding capacity of soil.
- 2) Measurement of soil texture.
- 3) Measurement of moisture contain in soil.
- 4) Micronutrients analysis of soil.
- 5) Measurement of physical properties of soil. (Color, odour, texture etc.)

- 6) Measurement of Chemical properties of soil (pH, chloride, Oxygen, Sulphur etc. contain in soil)
- 7) Measurement of Biological properties of soil (Fungi, Bacteria)
- 8) Air quality measurement.
- 9) Analysis of Residues in fruits.
- 10) Visit to green house.
- 11) Visit to Sugar industry/Juice extract plant/ dairy industry

**Reference books:**

1. Industrial instrumentation, “Patranabis”, TMH.
2. Instrumentation handbook-process control, “B.G. Liptak”, Chilton.
3. Process control and instrumentation technology, “C.D. Johnson”, PHI
4. Wills B.A., “ Mineral Processing Technology”, 4th Ed., Pergamon Press
5. Principle of Farm Machinery, R.A Kepner, Roy Bainer;: CBS Publication
6. Agricultural Engineering; Radhey Lal: Saroj Publication
7. Environmental Engineering, Peary. II. S. and others

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-3611 SEC (AA): Radiation Physics**

**Lectures: 36**

**(Credits-02)**

**Course Objectives:**

1. Students should understand the mechanism of interaction of various types of radiations with matter.
2. Students should get acquainted with principles of Measurement radiation levels, design principles and actual implementation of variety of radiation detectors.
3. Students should learn about standards regarding safety levels laid down by National and International agencies, methods adapted to maintain safety standards in various places and methods of shielding.
4. Students should study the applications of radiations in various fields.

**Course outcomes:**

1. Students can use the knowledge in the applications of Radiation Physics in the fields like radio carbon dating, medical diagnostic tools.
2. Students acquire skill in operating different types of radiation detectors to detect and measure radiation levels in different places.
3. Students can work as advisers in maintenance of radiation safety standards and following of strict protocols at various places like Hospitals, Industry, and Laboratories etc.
4. Students become able to employ their skills to develop applications of radio activity in the fields like agriculture, industry, hospitals etc.

**Syllabus:**

Unit No.	Title and Contents	Lectures
I	<b>Interaction of Radiation with Matter</b> Interaction of different types of radiation with matter-Ionizing & Nonionizing radiations, excitation, ionization, radioactive losses-Energy loss by collision, range energy relation, Bethe-Bloch formula collision stopping power, radiation stopping power, Straggling.	3
II	<b>Radiation Detectors</b> Characteristic curve of Gas-filled detectors. Ionization chamber, Proportional counter, Gas filled detectors (G. M. counter), Characteristics of organic and inorganic scintillation detectors, Scintillator detector, Semiconductor detector.	3
III	<b>Radiation units and Measurement of radiation exposure</b> Units for radiation exposure- Roentgen, Becquerel, Gray, Sievert, RAD, REM, KERMA. Radiation exposure, Absorbed Dose, Equivalent Dose, Effective Dose, Ambient and directional equivalent dose, Relative biological effective dose, Quality factor, Personal dosimeters, Film badge dosimeters, Thermo luminescent dosimeter.	3
IV	<b>Radiation Sources and Radiation Shielding</b> Natural & Artificial radioactive sources, Alpha, Beta, Gamma Sources, Basic concept of radiation shielding, linear and mass absorption coefficient, stopping power, materials for shielding of gamma and neutron, shielding interaction cross section.	3

V	<b>Radiation Protection:</b> Time, Distance, Shielding, Radiation Protection and Safety rules as per the regulatory guidelines of the Government of India, Safety codes for handling radioactive sources. Monitoring of radiation levels around an open radioactive source, ICRP, NCRP, AERB recommended limit.	3
VI	<b>Radiation Applications:</b> Radioactive pharmaceuticals and labelled compounds. Radioactive nuclei used in diagnostic applications. Applications of gamma-rays in sterilization of medical instruments, medication items and preservation of food.	3

**Activity: any-6**

[18L]

1. Study the different types of radio isotopes and their applications in medical field.
2. Study use of isotopes in radiocarbon dating.
3. Study of working of G. M. Counter.
4. Study of G. M. Counter characteristics – Dead Time and End point energy.
5. Study of commercially available portable, handy radiation detectors.
6. Survey of various places to measure radiation levels
7. Visit to hospitals and other such locations for measuring radiation exposure.
8. Visit to industrial areas to measure radiation exposure levels
9. Study of various shielding materials and their stopping power.
10. Study of dependence of radiation stopping power of materials on physical properties of materials
11. Study of protocols followed by various units to follow safety measures
12. Visit to food industry using preservation techniques using nuclear radiations.
13. Visit to pharmacy industry producing radioactive compounds.
14. Visit to diagnostic centres which employ radiation sources

**Reference books:**

1. Nuclear and Radiation Physics in Medicine. Tony Key. World Scientific. 2014
2. Introduction to Radiological Physics and Radiation dosimetry. Frank H. Attix. Wiley. 1986
3. Medical Physics by Glasser O, Vol 1, 2, 3 Year Book Publisher Inc Chicago.
4. Radiation Protection and Health Science. Marilyn E. Noz. World Scientific. 2007.
5. Introduction to Radiation Protection. Grupen C. Springer. 2008.
6. Radiation Physics for Medical Physicists. Podgorsak Ervin B. Springer. 2005.
7. Techniques for Nuclear and Particle Physics experiments. Leo. W. R. Springer. 2005.

**T.Y.B.Sc. (Physics) (Sem-VI)**  
**PHY-3611 SEC (AB): Photography**

**Lectures: 36**

**(Credits-02)**

**Objectives:**

- To create general awareness and interest in photography process.
- To make students familiar with the Photographic equipment and handling techniques.
- To help students to learn basic photographic and image processing skills.

**Course Outcomes:** After successful completion of this course, student will be able to

- Understand the basic principle, structure and handling techniques in digital photography.
- Students will be able to develop and apply photographic skills using digital photography tools including digital editing, saving, sizing, and posting of the images
- Student gets proficient at the technical aspect of photographing with a digital camera.
- Students can identify and apply appropriate business practices specific to the self-employed professional photographer

**Syllabus:**

Unit No.	Topics	Lectures
I	<b>Introduction of Photography:</b> <b>Introduction:</b> History & Development of photography, Principles, functions and structure of camera, Indoor and outdoor lighting techniques; Background selection; Flash and its features. Black & White v/s Digital camera (Limitation & advantages) <b>Types of Camera:</b> Pinhole camera, Box camera, SLR camera, Studio camera, Digital camera.	6
II	<b>Camera Control and Exposure:</b> <b>Camera Controls:</b> Need for camera controls. Apertures, Depth of field and depth of focus. Shutters (Ideal, leaf and focal plane shutter). Shutter speed (slow and fast). Auto focus, Manual focus and Image stabilization <b>Camera lenses &amp; Exposure:</b> Normal, Wide angle, Telephoto and Zoom range, Incident and reflected light, Exposure triangle, Exposure and equivalent exposures, Brief idea of exposure meter (TTL and Flash meter).	6
III	<b>Colour Theory &amp; Digital Camera:</b> <b>Colour Theory:</b> Classification and use of colours in photography, Construction of colour enlarger, Colour Head, sources of light and filters used in a colour enlarger <b>Digital Camera:</b> Types of Digital Camera and its features, Memory Chip card, Creative shots, Settings in the Digital Camera - Handling methods; White balance, Maintenance of camera. Digital camera sensors and its types.	6

Sr No	List of Practical's
1	To study the effect of aperture on depth of field
2	To study and recognize the use of slow and fast shutter speed
3	To study the effect of Exposure for different colour temperatures
4	To identify and determine the focal length of the different types of lenses
5	To study the Image Mixing, Image Cutting and Text Building Effect
6	To study Blurr Effect and Transformation Tools
7	To understand the effect of clip mask, photo filter and stamping Tool
8	To study the effect of natural light, tungsten light and fluorescent light on Photograph.
9	Lighting for still life (Earthen ware, Metal ware, Glass ware, Fruits, Crockery, Jewelry, Flowers, Food etc.)
10	Indoor shooting using three point lighting set up
11	Image processing 1: (Lightroom techniques 1): Brightness, saturation etc
12	Image processing 2: (Lightroom techniques 2): Exporting, contact sheet, print
13	Nature photography
14	Wild life photography
15	Night photography
16	Event Photography
17	News photography and preparing a photo story
18	Cover page design for a magazine

**Reference books:**

1. Basic Photography- M.J. Langford, Focal Press.
2. The basic book of Photography – Fifth edition – by Tom Gri
3. Beginner's guide to photographic lighting: Techniques studio or on Location-Dom Marr
4. Photography its principles & practice: A manual of the photography – Carroll.
5. Photography for the 21<sup>st</sup> century by Katic Millar
6. Advanced Photography (Vol.-I & Vol.-II) - M.J. Langford, Focal Press.
7. Applied Photographic Optics- Sidney F. Ray; Focal Press
8. The Practical Guide to Photographic Lighting, John Tarrant, Focal Press