

Janata Shikshan Mandal's  
Smt. Indirabai G. Kulkarni Arts College, J. B. Sawant Science College and  
Sau. Janakibai D. Kunte Commerce College, Alibag – Raigad (Maharashtra)

**List of Course having Project Work/Field Work/ Year 2022-2023**

Sr. No.	Program Name	Course Name
1	M.Sc.	M.Sc. Organic chemistry
2	M.A. MARATHI	प्रकल्प लेखन
3	M.A. HINDI	प्रकल्प लेखन
4	TYBA. HINDI	संचार माध्यम
5	TYBA GEOGRAPHY	Tools and Techniques in Geography
6	TYBMS	Project work
7	T.Y.B.Sc. Botany	Horticulture and Gardening
8	T.Y.B.Sc. (Computer Science)	Project implementation
9	T.Y.B.Sc. (Information Technology)	Project implementation
10	SYBCOM	Foundation Course-II
11	FYBCOM	Foundation Course-I
12	SYBA	Foundation Course-II
13	FYBA	Foundation Course-I
14	SYBSC	Foundation Course-II
15	FYBSC	Foundation Course-I



PRINCIPAL

Smt. Indirabai G. Kulkarni Arts,  
J. B. Sawant Science and  
Sau. Janakibai Dhondo Kunte Commerce  
College, Alibag-402 201, Dist. Raigad

**UNIVERSITY OF MUMBAI**

No. UG/85 of 2018-19

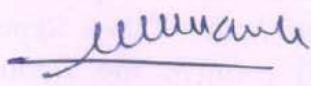
**CIRCULAR:-**

Attention of the Principals of the affiliated Colleges, the Head University Departments and Directors of the recognized Institutions in Science & Technology Faculty is invited to this office Circular Nos. UG/226 of 2006, dated 29<sup>th</sup> June, 2006 relating to syllabus of the Master of Science (M.Sc.) degree course.

They are hereby informed that the recommendations made by the Board of Studies in Chemistry at its meeting held on 28<sup>th</sup> May, 2018 have been accepted by the Academic Council at its meeting held on 14<sup>th</sup> June, 2018 **vide** item No. 4.71 and that in accordance therewith, the revised syllabus as per the (CBCS) for the M.Sc. in Organic Chemistry (Sem – III & IV), has been brought into force with effect from the academic year 2018-19, accordingly. (The same is available on the University's website [www.mu.ac.in](http://www.mu.ac.in)).

MUMBAI – 400 032

19<sup>th</sup> June, 2018  
To

  
(Dr. Dinesh Kamble)  
I/c REGISTRAR

The Principals of the affiliated Colleges, the Head University Departments & Directors of the recognized Institutions in Science & Technology Faculty.  
(Circular No. UG/334 of 2017-18 dated 9<sup>th</sup> January, 2018.)

**A.C./4.71/14/06/2018**

\*\*\*\*\*

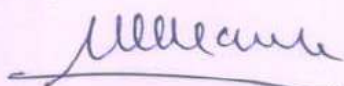
No. UG/ 85 -A of 2018

MUMBAI-400 032

19<sup>th</sup> June, 2018

Copy forwarded with Compliments for information to:-

- 1) The I/c Dean, Faculty of Science & Technology,
- 2) The Chairman, Board of Studies in Chemistry,
- 3) The Director, Board of Examinations and Evaluation,
- 4) The Director, Board of Students Development,
- 5) The Co-Ordinator, University Computerization Centre,

  
(Dr. Dinesh Kamble)  
I/c REGISTRAR

**AC - 14/06/2018**

**Item No. 4.71**

# **UNIVERSITY OF MUMBAI**



**Program : M.Sc.**

**( Choice Based Credit System )**

**Course : M.Sc. Organic Chemistry**

**Part – I**

**Syllabus for Semester III & IV**

**(To be implemented from the Academic year 2018-2019 )**

# M.Sc. Organic Chemistry

## Semester – III

### Course Code: PSCHO301

#### Paper - I (Theoretical organic chemistry-I)

<b>Unit 1</b>	<b>Organic reaction mechanisms</b>	<b>[15L]</b>
<b>1.1</b>	Organic reactive intermediates, methods of generation, structure, stability and important reactions involving carbocations, nitrenes, carbenes, arynes and ketenes.	<b>[5L]</b>
<b>1.2</b>	Neighbouring group participation: Mechanism and effects of anchimeric assistance, NGP by unshared/ lone pair electrons, $\pi$ -electrons, aromatic rings, $\sigma$ -bonds with special reference to norbornyl and <b>bicyclo[2.2.2]octyl cation</b> systems (formation of non-classical carbocation)	<b>[3L]</b>
<b>1.3</b>	Role of FMOs in organic reactivity: Reactions involving hard and soft electrophiles and nucleophiles, ambident nucleophiles, ambident electrophiles, the $\alpha$ effect.	<b>[2L]</b>
<b>1.4</b>	Pericyclic reactions: Classification of pericyclic reactions; thermal and photochemical reactions. Three approaches: Evidence for the concertedness of bond making and breaking Symmetry-Allowed and Symmetry-Forbidden Reactions – <ul style="list-style-type: none"><li>• The Woodward-Hoffmann Rules-Class by Class</li><li>• The generalised Woodward-Hoffmann Rule</li></ul> Explanations for Woodward-Hoffmann Rules <ul style="list-style-type: none"><li>• The Aromatic Transition structures [Huckel and Mobius]</li><li>• Frontier Orbitals</li><li>• Correlation Diagrams, FMO and PMO approach</li></ul> Molecular orbital symmetry, Frontier orbital of ethylene, 1,3 butadiene, 1,3,5 hexatriene and allyl system.	<b>[5L]</b>
<b>Unit 2</b>	<b>Pericyclic reactions</b>	<b>[15L]</b>
<b>2.1</b>	Cycloaddition reactions: Supra and antarafacial additions, $4n$ and $4n+2$ systems, 2+2 additions of ketenes. Diels-Alder reactions, 1, 3-Dipolar cycloaddition and cheletropic reactions, ene reaction, retro-Diels-Alder reaction, regioselectivity, periselectivity, torquoselectivity, site selectivity and effect of substituents in Diels-Alder reactions. <b>Other Cycloaddition Reactions-</b> [4+6] Cycloadditions, Ketene Cycloaddition, Allene Cycloadditions, Carbene Cycloaddition, Epoxidation and Related Cycloadditions. Other Pericyclic reactions: Sigmatropic Rearrangements, Electrocyclic Reactions, Alder 'Ene' Reactions.	<b>[7L]</b>
<b>2.2</b>	Electrocyclic reactions: Conrotatory and disrotatory motions, $4n\pi$ and $(4n+2)\pi$ electron and allyl systems.	<b>[3L]</b>
<b>2.3</b>	Sigmatropic rearrangements: H-shifts and C-shifts, supra and antarafacial migrations, retention and inversion of configurations. Cope (including oxy-Cope and aza-Cope) and Claisen rearrangements. Formation of Vitamin D from 7-dehydrocholesterol, synthesis of citral using pericyclic reaction, conversion of Endiandric acid E to Endiandric acid A.	<b>[5L]</b>

<b>Unit 3:</b>	<b>Stereochemistry-I</b>	<b>[15L]</b>
<b>3.1</b>	Classification of point groups based on symmetry elements with examples (nonmathematical treatment).	<b>[2L]</b>
<b>3.2</b>	Conformational analysis of medium rings: Eight to ten membered rings and their unusual properties, I-strain, transannular reactions.	<b>[3L]</b>
<b>3.3</b>	Stereochemistry of fused ring and bridged ring compounds: decalins, hydrindanes, <b>perhydroanthracenes</b> , steroids, and Bredt's rule.	<b>[5L]</b>
<b>3.4</b>	<b>Anancomeric systems</b> , Effect of conformation on reactivity of cyclohexane derivatives in the following reactions (including mechanism): electrophilic addition, elimination, molecular rearrangements, reduction of cyclohexanones ( <b>with LiAlH<sub>4</sub>, selectride and MPV reduction</b> ) and oxidation of cyclohexanols.	<b>[5L]</b>
<b>Unit 4</b>	<b>Photochemistry</b>	<b>[15L]</b>
<b>4.1</b>	Principles of photochemistry: quantum yield, electronic states and transitions, selection rules, modes of dissipation of energy (Jablonski diagram), electronic energy transfer: photosensitization and quenching process.	<b>[3L]</b>
<b>4.2</b>	Photochemistry of carbonyl compounds: $\pi \rightarrow \pi^*$ , $n \rightarrow \pi^*$ transitions, Norrish- I and Norrish-II cleavages, Paterno-Buchi reaction. Photoreduction, calculation of quantum yield, photochemistry of enones, photochemical rearrangements of $\alpha$ , $\beta$ -unsaturated ketones and cyclohexadienones. Photo Fries rearrangement, Barton reaction.	<b>[8L]</b>
<b>4.3</b>	Photochemistry of olefins: cis-trans isomerizations, dimerizations, hydrogen abstraction, addition and Di- $\pi$ -methane rearrangement including aza-di- $\pi$ -methane. <b>Photochemical Cross-Coupling of Alkenes, Photodimerisation of alkenes.</b>	<b>[2L]</b>
<b>4.4</b>	Photochemistry of arenes: 1, 2-, 1, 3- and 1, 4- additions. <b>Photocycloadditions of aromatic Rings.</b>	<b>[1L]</b>
<b>4.5</b>	Singlet oxygen and photo-oxygenation reactions. <b>Photochemically induced Radical Reactions. Chemiluminescence.</b>	<b>[1L]</b>

### REFERENCES:

- 1 March's Advanced Organic Chemistry, Jerry March, sixth edition, 2007, John Wiley and sons.
- 2 A guide to mechanism in Organic Chemistry, 6<sup>th</sup> edition, 2009, Peter Sykes, Pearson education, New Delhi.
- 3 Advanced Organic Chemistry: Reaction Mechanisms, R. Bruckner, Academic Press (2002).
- 4 Mechanism and theory in Organic Chemistry, T. H. Lowry and K. C. Richardson, Harper and Row.
- 5 Organic Reaction Mechanism, 4<sup>th</sup> edition, V. K. Ahluvalia, R. K. Parashar, Narosa Publication.
- 6 Reaction Mechanism in Organic Chemistry, S.M. Mukherji, S.P. Singh, Macmillan Publishers, India.
- 7 Organic Chemistry, Part A and B, Fifth edition, 2007, Francis A.



- Carey and Richard J. Sundberg, Springer.
- 8 Carbenes, Nitrenes and Arynes. Von T. L. Gilchrist, C. W. Rees. Th. Nelson and Sons Ltd., London 1969.
  - 9 Organic reactive intermediates, Samuel P. MacManus, Academic Press.
  - 10 Organic Chemistry, J. Clayden, S. Warren, N. Greeves, P. Wothers, 1st Edition, Oxford University Press ( 2001).
  - 11 Organic Chemistry, Seventh Edition, R.T. Morrison, R. N. Boyd & S. K. Bhattacharjee, Pearson. Advanced Organic Chemistry: Reactions & Mechanisms, second edition, B. Miller and R. Prasad, Pearson.
  - 12 Organic reactions & their mechanisms, third revised edition, P.S. Kalsi, New Age International Publishers.
  - 13 Organic Chemistry: Structure and Function, P. Volhardt and N. Schore, 5th Edition, 2012
  - 14 Organic Chemistry, W. G. Solomons, C. B. Fryhle, , 9th Edition, Wiley India Pvt. Ltd., 2009.
  - 15 Pericyclic Reactions, S. Sankararaman, Wiley VCH, 2005.
  - 16 Advanced organic chemistry, Jagdamba Singh L. D. S. Yadav, Pragati Prakashan, 2011
  - 17 Pericyclic reactions, Ian Fleming, Oxford university press, 1999.
  - 18 Pericyclic reactions-A mechanistic approach, S. M. Mukherji, Macmillan Co. of India 1979.
  - 19 Organic chemistry, 8<sup>th</sup> edition, John McMurry
  - 20 Modern methods of Organic Synthesis, 4<sup>th</sup> Edition W. Carruthers and Iain Coldham, Cambridge University Press 2004
  - 21 Modern physical chemistry, Eric V Anslyn, Dennis A. Dougherty, University science books, 2006
  - 22 Physical Organic Chemistry, N. S. Isaacs, ELBS/Longman
  - 23 Stereochemistry of Carbon Compounds: Principles and Applications, D, Nasipuri, 3<sup>rd</sup> edition, New Age International Ltd.
  - 24 Stereochemistry of Organic Compounds, Ernest L. Eliel and Samuel H. Wilen, Wiley-India edit
  - 25 Stereochemistry, P. S. Kalsi, 4<sup>th</sup> edition, New Age International Ltd
  - 26 Organic Stereochemistry, M. J. T. Robinson, Oxford University Press, New Delhi, India edition, 2005
  - 27 Bioorganic, Bioinorganic and Supramolecular chemistry, P.S. Kalsi and J.P. Kalsi. New Age International Publishers
  - 28 Supramolecular Chemistry; Concepts and Perspectives, J. M. Lehn, VCH.
  - 29 Crown ethers and analogous compounds, M. Hiraoka, Elsevier, 1992.
  - 30 Large ring compounds, J.A. Semlyen, Wiley-VCH, 1997.
  - 31 Fundamentals of Photochemistry, K. K. Rohtagi-Mukherji, Wiley-Eastern
  - 32 Essentials of Molecular Photochemistry, A. Gilbert and J. Baggott, Blackwell Scientific Publication.

- 33 Molecular Photochemistry, N. J. Turro, W. A. Benjamin.  
 34 Introductory Photochemistry, A. Cox and T. Camp, McGraw-Hill  
 35 Photochemistry, R. P. Kundall and A. Gilbert, Thomson Nelson.  
 36 Organic Photochemistry, J. Coxon and B. Halton, Cambridge University Press.  
 37 Molecular Orbitals and Organic Chemical Reactions by Ian Fleming (Wiley – A John Wiley and Sons, Ltd., Publication)

**Course Code: PSCHO302**

**Paper-II**

**Synthetic Organic Chemistry-I**

<b>Unit 1:</b>	<b>Name reactions with mechanism and application</b>	<b>[15L]</b>
<b>1.1</b>	Mukaiyama esterification, Mitsunobu reaction, Darzen's Glycidic Ester synthesis, Ritter reaction, Yamaguchi esterification, Peterson olefination.	<b>[5L]</b>
<b>1.2</b>	<b>Domino reactions:</b> Characteristics; Nazarov cyclization	<b>[3L]</b>
<b>1.3</b>	<b>Multicomponent reactions:</b> Strecker Synthesis, Ugi 4CC, Biginelli synthesis, Hantzsch synthesis, <u>Pictet-Spengler synthesis</u>	<b>[5L]</b>
<b>1.4</b>	<b>Click Reactions:</b> Characteristics; Huisgen 1,3-Dipolar Cycloaddition	<b>[2L]</b>
<b>Unit 2:</b>	<b>Radicals in organic synthesis</b>	<b>[15L]</b>
<b>2.1</b>	<b>Introduction:</b> Generation, stability, reactivity and structural and stereochemical properties of free radicals, Persistent and charged radicals, Electrophilic and nucleophilic radicals.	<b>[3L]</b>
<b>2.2</b>	<b>Radical Initiators:</b> azobisisobutyronitrile (AIBN) and dibenzoyl peroxide.	<b>[1L]</b>
<b>2.3</b>	<b>Characteristic reactions</b> - Free radical substitution, addition to multiple bonds. Radical chain reactions, Radical halogenation of hydrocarbons (Regioselectivity), radical cyclizations, autoxidations: synthesis of cumene hydroperoxide from cumene.	<b>[4L]</b>
<b>2.4</b>	<b>Radicals in synthesis:</b> Inter and intra molecular C-C bond formation via mercuric hydride, tin hydride, thiol donors. Cleavage of C-X, C-Sn, C-Co, C-S, O-O bonds. Oxidative coupling, C-C bond formation in aromatics: $S_{RN}Ar$ reactions.	<b>[4L]</b>
<b>2.5</b>	Hunsdiecker reaction, Pinacol coupling, McMurry coupling, Sandmeyer reaction, Acyloin condensation.	<b>[3L]</b>
<b>Unit 3:</b>	<b>Enamines, Ylides and <math>\alpha</math>-C-H functionalization</b>	<b>[15]</b>
<b>3.1</b>	<b>Enamines:</b> Generation & application in organic synthesis with mechanistic pathways, Stork enamine reaction. Reactivity, comparison between enamines and enolates. Synthetic reactions of enamines including asymmetric reactions of chiral enamines derived from chiral secondary amines.	<b>[4L]</b>
<b>3.2</b>	<b>Phosphorus, Sulfur and Nitrogen Ylides:</b> Preparation and their synthetic applications along with their stereochemical aspects. Wittig reaction, Horner-Wadsworth-Emmons Reaction, Barton-Kellogg olefination.	<b>[6L]</b>

- 3.3  **$\alpha$ -C-H functionalization:** By nitro, sulfoxide, sulfone and phosphonate groups: generation of carbanions by strong bases (LDA/n-butyl lithium) and applications in C-C bond formation. Bamford-Stevens reaction, Julia olefination and its modification, Seyferth–Gilbert homologation, Steven’s rearrangement. [5L]
- Unit 4: Metals / Non-metals in organic synthesis** [15]
- 4.1 **Mercury in organic synthesis:** Mechanism and regiochemistry of oxymercuration and demercuration of alkenes, mercuration of aromatics, transformation of aryl mercurials to aryl halides. Organomercurials as carbene transfer reagents. [3L]
- 4.2 **Organoboron compounds:** Mechanism and regiochemistry of hydroboration of alkenes and alkynes, asymmetric hydroboration using chiral boron reagents, 9-BBN hydroboration, oxazaborolidine (CBS catalyst) and functional group reduction by diborane. [3L]
- 4.3 **Organosilicons:** Salient features of silicon governing the reactivity of organosilicons, preparation and important bond-forming reactions of alkyl silanes, alkenyl silanes, aryl silanes and allyl silanes.  $\beta$ -silyl cations as intermediates. Iodotrimethylsilane in organic synthesis. [3L]
- 4.4 **Silyl enol ethers:** Application: As nucleophiles (Michael reaction, Mukaiyama aldol reaction), in ring contraction reactions. [2L]
- 4.5 **Organotin compounds:** Preparation of alkenyl and allyl tin compounds; application in C-C bond formation, in replacement of halogen by H at the same C atom. [2L]
- 4.6 **Selenium in organic synthesis:** Preparation of selenols/selenoxide, selenoxide elimination to create unsaturation, selenoxide and seleno acetals as  $\alpha$ -C-H activating groups [2L]

### References

- **Advanced Organic Chemistry**, Part A and Part B: Reaction and Synthesis, Francis A. Carey, Richard J. Sundberg, 5<sup>th</sup> Edition, Springer Verlag
- **Modern Methods of Organic Synthesis**, 4<sup>th</sup> Edition, W. Carruthers and Iain Coldham, Cambridge University Press, 2004.
- **Chem.Rev. 2002, 102, 2227-2302, Rare Earth Metal Triflates in Organic Synthesis**, S. Kobayashi, M. Sugiura, H. Kitagawa, and W.W.L. Lam.
- **Organic Chemistry**, Clayden Greeves Warren and Wothers, Oxford Press (2001).
- **Moder Organic Synthesis: An Introduction**, G.S. Zweifel and M.H. Nantz, W.H. Freeman and Company, (2007).
- **Advanced Organic Chemistry: Reaction Mechanism**, R. Bruckner, Academic Press (2002).
- **Principles of Organic Synthesis**, R.O.C. Norman & J. M. Coxon, 3<sup>rd</sup> Edn., Nelson Thornes
- **Organic Chemistry**, 7<sup>th</sup> Edn, R. T .Morrison, R. N. Boyd, & S. K.



Bhattacharjee, Pearson

- **Strategic Applications of Name Reactions in Organic Synthesis**, L. Kurti & B. Czako (2005), Elsevier Academic Press
- **Advanced Organic Chemistry: Reactions & Mechanisms**, 2<sup>nd</sup> Edn., B. Miller & R. Prasad, Pearson
- **Organic reactions and their mechanisms**, 3<sup>rd</sup> revised edition, P.S. Kalsi, New Age International Publishers
- **Organic Synthesis: The Disconnection Approach**, Stuart Warren, John Wiley & Sons, 2004
- **Name Reactions and Reagents in Organic Synthesis**, 2<sup>nd</sup> Edn., Bradford P. Mundy, Michael G. Ellard, and Frank Favoloro, Jr., Wiley-Interscience
- **Name Reactions**, Jie Jack Lie, 3<sup>rd</sup> Edn., Springer
- **Organic Electrochemistry**, H. Lund, and M. Baizer, 3<sup>rd</sup> Edn., Marcel Dekker.

**Course Code: PSCHO303**

**Paper-III**

**Natural products and Spectroscopy**

<b>Unit 1:</b>	<b>Natural products-I</b>	<b>[15L]</b>
1.1	<b>Carbohydrates:</b> Introduction to naturally occurring sugars: Deoxysugars, aminosugars, branched sugars. Structure elucidation of lactose and D-glucosamine (synthesis not expected). Structural features and applications of inositol, starch, cellulose, chitin and heparin.	[5L]
1.2	<b>Natural pigments:</b> General structural features, occurrence, biological importance and applications of: carotenoids, anthocyanins, quinones, flavones, pterins and porphyrins (chlorophyll). Structure elucidation of $\beta$ -carotene and Cyanin (with synthesis). Synthesis of ubiquinone from 3, 4, 5-trimethoxyacetophenone.	[5L]
1.3	<b>Insect pheromones:</b> General structural features and importance. Types of pheromones (aggregation, alarm, releaser, primer, territorial, trail, sex pheromones etc.), advantage of pheromones over conventional pesticides. Synthesis of bombykol from acetylene, disparlure from 6-methylhept-1-ene, grandisol from 2-methyl-1, 3-butadiene.	[3L]
1.4	<b>Alkaloids:</b> Occurrence and physiological importance of morphine and atropine. Structure elucidation, spectral data and synthesis of coniine.	[2L]
<b>Unit 2:</b>	<b>Natural products-II</b>	<b>[15L]</b>
2.1	<b>Multi-step synthesis of natural products:</b> Synthesis of the following natural products with special reference to reagents used, stereochemistry and functional group transformations: a) Woodward synthesis of Reserpine from benzoquinone b) Corey synthesis of Longifoline from resorcinol c) Gilbert-Stork synthesis of Griseofulvin from phloroglucinol d) Corey's Synthesis of Caryophyllene from 2-Cyclohexenone and Isobutylene e) Synthesis of Juvabione from Limonene	[8L]

- f) Synthesis of Taxol.
- 2.2 **Prostaglandins:** Classification, general structure and biological importance. Structure elucidation of **PGE<sub>1</sub>**. [2L]
- 2.3 **Lipids:** Classification, role of lipids, Fatty acids and glycerol derived from oils and fats. [2L]
- 2.4 **Insect growth regulators:** General idea, structures of JH<sub>2</sub> and JH<sub>3</sub>. [1L]
- 2.5 **Plant growth regulators:** Structural features and applications of arylacetic acids, gibberellic acids and triacontanol. Synthesis of triacontanol (synthesis of stearyl magnesium bromide and 12-bromo-1-tetrahydropyranyloxydodecane expected). [2L]
- Unit 3: Advanced spectroscopic techniques-I [15L]**
- 3.1 **Proton NMR spectroscopy:** Recapitulation, chemical and magnetic equivalence of protons, First order, second order, Spin system notations (A<sub>2</sub>, AB, AX, AB<sub>2</sub>, AX<sub>2</sub>, AMX and A<sub>2</sub>B<sub>2</sub>-A<sub>2</sub>X<sub>2</sub> spin systems with suitable examples). Long range coupling (Allylic coupling, 'W' coupling and Coupling in aromatic and heteroaromatic systems), Temperature effects, Simplification of complex spectra, nuclear magnetic double resonance, chemical shift reagents. [7L]
- 3.2 **<sup>13</sup>C –NMR spectroscopy:** Recapitulation, equivalent and non-equivalent carbons (examples of aliphatic and aromatic compounds), <sup>13</sup>C- chemical shifts, calculation of <sup>13</sup>C- chemical shifts of aromatic carbons, heteronuclear coupling of carbon to <sup>19</sup>F and <sup>31</sup>P. [4L]
- 3.3 Spectral problems based on UV, IR, <sup>1</sup>HNMR and <sup>13</sup>CNMR and Mass spectroscopy. [4L]
- Unit 4: Advanced spectroscopic techniques-II [15L]**
- 4.1 **Advanced NMR techniques:** DEPT experiment, determining number of attached hydrogens (Methyl/methylene/methine and quaternary carbons), two dimensional spectroscopic techniques, COSY and HETCOR spectra, NOE and NOESY techniques. [10L]
- 4.2 Spectral problems based on UV, IR, <sup>1</sup>HNMR, <sup>13</sup>CNMR (Including 2D technique) and Mass spectroscopy [5L]

### REFERENCES:

1. Natural product chemistry, A mechanistic, biosynthetic and ecological approach, Kurt B.G. Torssell, Apotekarsocieteten – Swedish Pharmaceutical Press.
2. Natural products chemistry and applications, Sujata V. Bhat, B.A. Nagasampagi and S. Meenakshi, Narosa Publishing House, 2011.
3. Organic Chemistry Natural Products Volume-II, O. P. Agarwal, Krishna Prakashan, 2011.
4. Chemistry of natural products, F. F. Bentley and F. R. Dollish, 1974
5. Natural Product Chemistry Vol.1 and 2, K. Nakanishi J. Goto. S.Ito Majori and S. Nozoo, Academic Press, 1974.
6. Chemistry of natural products, V.K. Ahluwalia, Vishal Publishing Co. 2008.

7. Heterocyclic chemistry, 3<sup>rd</sup> edition, Thomas L. Gilchrist, Pearson Education, 2007.
8. Heterocyclic Chemistry, Synthesis, Reactions and Mechanisms, R. K. Bansal, Wiley Eastern Ltd., 1990.
9. Heterocyclic Chemistry, J. A. Joule and G. F. Smith, ELBS, 2<sup>nd</sup> edition, 1982.
10. The Conformational Analysis of Heterocyclic Compounds, F.G. Riddell, Academic Press, 1980.
11. Principles of Modern Heterocyclic Chemistry, L.A. Paquette, W.B. Benjamin, Inc., 1978.
12. An Introduction to the Chemistry of Heterocyclic Compounds, 2nd edition, B.M. Acheson, 1975.
13. Natural Products: Chemistry and Biological Significance Interscience, J. Mann, R.S. Davidson, J.B. Hobbs, D.V. Banthorpe and J. B. Harborne, Longman, Essex, 1994.
14. Organic Chemistry, Vol 2, I.L. Finar, ELBS, 6<sup>th</sup> edition, Pearson.
15. Stereoselective Synthesis: A Practical Approach, M. Nogradi, Wiley-VCH, 1995.
16. Rodd's Chemistry of Carbon Compounds, Ed. S. Coffey, Elsevier.
17. Chemistry, Biological and Pharmacological Properties of Medicinal Plants from the Americas, Ed. Kurt Hostettmann, M.P. Gupta and A. Marston, Harwood Academic Publishers.
18. Introduction to Flavonoids, B.A. Bohm, Harwood Academic Publishers, 1998.
19. New Trends in Natural Product Chemistry, Atta-ur-Rahman and M.I. Choudhary, Harwood Academic Publishers, 1998.
20. Insecticides of Natural Origin, Sukh Dev, Harwood Academic Publishers.
21. Total. Synthesis of Longifolene, J. Am. Chem. Soc., E. J. Corey, M. Ohno, R. B. Mitra, and P. A. Vatakencherry. 1964, 86, 478.
22. Total. Synthesis of Longifolene, J. Am. Chem. Soc. 1961, 83, 1251.
- 23. The structure and total synthesis of 5-Vetivone, J. A. Marshall and P. C. Johnson, J. Org. Chem., 35, 192 (1970).**
- 24. Total synthesis of spirovetivanes, J. Am. Chem. Soc. 1967, 89, 2750.**
25. The Total Synthesis of Reserpine, Woodward, R. B.; Bader, F. E.; Bickel, H., Frey, A. J.; Kierstead, R. W. Tetrahedron 1958, 2, 1-57.
- 26. Total synthesis of Griseofulvin, Stork, G.; Tomasz, M. J. Am. Chem. Soc. 1962, 84, 310.**
- 27. Synthesis of (±)-4-demethoxydaunomycinone, A. V. Rama Rao, G. Venkatswamy, S. M. Javeed M., V. H. Deshpande, B. Ramamohan Rao, J. Org. Chem., 1983, 48 (9), 1552.**
28. The Alkaloids, The fundamental Chemistry A biogenetic approach,

Marcel Dekker Inc. New York, 1979.

29. Comprehensive Organic Chemistry by Barton and Ollis, Pergamon Press, Oxford, 1979.
30. Medicinal Natural Products, a Biosynthetic Approach, Derick Paul, John Wiley and Sons, 2002.
31. Biosynthesis of Natural Products, Mannito Paolo, Ellis Horwood Limited, 1981.
32. Selected Organic synthesis, Ian Fleming, John Wiley and Sons, 1973.
- 33. Total synthesis of Natural Products, J. Apsimon, John Wiley and Sons.**
34. The Logic of Chemical Synthesis, E. J. Corey and Xue-Min Cheng, Wiley Interscience.
35. Classics in Total Synthesis , K. C. Nicolaou and E. J. Sorensen, Weinheim: VCH, 1996.
36. Spectroscopy of Organic compounds, P.S. Kalsi, New Age International Pub. Ltd. And Wiley Eastern Ltd., Second edition, 1995.
37. Applications of Absorption Spectroscopy of Organic compounds, J. R. Dyer, Prentice Hall of India, 1987.
38. Spectrometric Identification of Organic compounds, R.M. Silverstein and others, John Wiley and Sons Inc., 5th ed., 1991
39. Absorption spectroscopy of organic Molecules, V.M. Parikh, 1974.
40. Spectroscopic methods in organic chemistry, Williams and Fleming, Tata McGraw Hill, 4th ed, 1989.
41. Organic spectroscopy, William Kemp, ELBS, 3rd ed., 1987.
42. Organic structures from spectra, [L. D. Field](#), [S. Sternhell](#), [John R. Kalman](#), Wiley, 4<sup>th</sup> ed., .2011
43. Introduction to spectroscopy, [Donald L. Pavia](#), [Gary M. Lampman](#), [George S. Kriz](#), James R. Vyvyan, 4<sup>th</sup> ed., 2009.
44. Organic spectroscopic structure determination: a problem-based learning approach [Douglass F. Taber](#), Oxford University Press, 17-Sep-2007.
45. Organic Spectroscopy: Principles And Applications, [Jag Mohan](#), Alpha Science International Ltd., 30-Mar-2004
46. Alkaloids, V.K. Ahluwalia, Ane Books Pvt.Ltd.
47. Biotransformations in Organic Chemistry, 5<sup>th</sup> Edition, Kurt Faber, Springer
48. Structure Determination of Organic Compounds, EPretsch, P. Buhlmann, C.Affolter, Springer

**Course Code: PSCHOEC-I 304**  
**Paper-IV**  
**Medicinal , Biogenesis and green chemistry**

- Unit 1: Drug discovery, design and development** [15L]
- 1.1 Introduction, important terms used in medicinal chemistry: receptor, therapeutic index, bioavailability, drug assay and drug potency. General idea of factors affecting bioactivity: Resonance, inductive effect, bioisosterism, spatial considerations. Basic pharmacokinetics: drug absorption, distribution, metabolism (biotransformation) and elimination. Physical and chemical parameters like solubility, lipophilicity, ionization, pH, redox potential, H-bonding, partition coefficient and isomerism in drug distribution and drug-receptor binding. [7]
- 1.2 Procedures in drug design: Drug discovery without a lead: Penicillin, Librium. Lead discovery: random screening, non-random (or targeted) screening. Lead modification: Identification of the pharmacophore, Functional group modification. Structure-activity relationship, Structure modification to increase potency and therapeutic index: Homologation, chain branching, ring-chain transformation, bioisosterism, combinatorial synthesis (basic idea). [8L]
- Unit 2: Drug design, development and synthesis** [15L]
- 2.1 Introduction to quantitative structure activity relationship studies. QSAR parameters: - steric effects: The Taft and other equations; Methods used to correlate regression parameters with biological activity: Hansch analysis- A linear multiple regression analysis. [5L]
- 2.2 Introduction to modern methods of drug design and synthesis- computer-aided molecular graphics based drug design, drug design via enzyme inhibition (reversible and irreversible), bioinformatics and drug design. [3L]
- 2.3 Concept of prodrugs and soft drugs. (a) Prodrugs: Prodrug design, types of prodrugs, functional groups in prodrugs, advantages of prodrug use. (b) Soft drugs: concept and properties. [3L]
- 2.4 Synthesis and application of the following drugs: Fluoxetine, cetirizine, esomeprazole, fluconazole, zidovudine, methotrexate, diclofenac, labetalol, fenofibrate. [4L]
- Unit 3: Biogenesis and biosynthesis of natural products** [15L]
- 3.1 Primary and secondary metabolites and the building blocks, general pathway of amino acid biosynthesis. [3L]

3.2	Acetate pathway: Biosynthesis of malonylCoA, saturated fatty acids, prostaglandins from arachidonic acid, aromatic polyketides.	[4L]
3.3	Shikimic Acid pathway: Biosynthesis of shikimic acid, aromatic amino acids, cinnamic acid and its derivatives, lignin and lignans, benzoic acid and its derivatives, flavonoids and isoflavonoids.	[4L]
3.4	Mevalonate pathway: Biosynthesis of mevalonic acid, monoterpenes – geranyl cation and its derivatives, sesquiterpenes – farnesyl cation and its derivatives and diterpenes.	[4L]
<b>Unit 4:</b>	<b>Green chemistry</b>	<b>[15L]</b>
4.1	Introduction, basic principles of green chemistry. Designing a green synthesis: Green starting materials, green reagents, green solvents and reaction conditions, green catalysts.	[1L]
4.2	Use of the following in green synthesis with suitable examples:  a) Green reagents: dimethylcarbonate, polymer supported reagents.  b) Green catalysts: Acid catalysts, oxidation catalysts, basic catalysts, phase transfer catalysts [Aliquat 336, benzyltrimethyl ammonium chloride (TMBA), Tetra-n-butyl ammonium chloride, crown ethers], biocatalysts.  c) Green solvents: water, ionic liquids, deep eutectic solvents, supercritical carbon dioxide.  d) Solid state reactions: solid phase synthesis, solid supported synthesis  e) Microwave assisted synthesis: reactions in water, reactions in organic solvents, solvent free reactions.  f) Ultrasound assisted reactions.	[9L]
4.3	Comparison of traditional processes versus green processes in the syntheses of ibuprofen, adipic acid, 4-aminodiphenylamine, p-bromotoluene and benzimidazole.	[3L]
4.4	Green Catalysts : Nanocatalyst, Types of nanocatalysts, Advantages and Disadvantages of Nanocatalysts, Idea of Magnetically separable nanocatalysts.	[2L]

### **REFERENCES:**

1. Nelson, D. L, and Cox, M. M, (2008) Lehninger principles of Biochemistry 5<sup>th</sup> Edition, W. H. Freeman and Company, NY., USA.
2. Stryer, Lubert; Biochemistry; W. H. Freeman publishers.
3. Voet, D. and J. G. Voet (2004) Biochemistry, 3<sup>rd</sup> Edition, John Wiley & sons, Inc. USA.



4. Zubay, Goffrey L; Biochemistry; Wm C. Brown publishers.
5. V. Polshettiwar, R. Luque, A. Fihri, H. Zhu, M. Bouhrara and J-M Basset, Chem. Rev. 2011, 111, 3036-3075;
6. R. B. Nasir Baig and R. S. Varma, Chem. Comm., 2013, 49, 752-770;
7. M. B. Gawande, A. K. Rathi, P. S. Varma, Appl. Sci., 2013, 3, 656-674;
8. J. Govan and Y. K. Gun'ko, Nanomaterials, 2014, 4, 222-214.
9. K. Philippot and P. Serp, Nanomaterials in catalysis, First Edition. Edited by P. Serp and K. Philippot; 2013 Wiley –VCH Verlag GmbH & Co. KGaA
10. D. Astruc, Nanomaterials and Catalysis, Wiley-VCH Verlag GmbH & Co. KGaA, 2008, 1-48;
11. C. N. R. Roa, A. Muller and A. K. Cheetham, The chemistry of Nanomaterials, Wiley-VCH Verlag GmbH & Co. KGaA, 2005, 1-11;
12. The organic chemistry of drug design and drug action, Richard B. Silverman, 2nd edition, Academic Press
13. Medicinal chemistry, D. Sriram and P. Yogeeswari, 2nd edition, Pearson
14. An introduction to drug design-S. S. Pandeya and J. R. Dimmock (New age international)
15. Burger's medicinal chemistry and drug discovery. by Manfred E. Wolf
16. Introduction to Medicinal chemistry. by Graham Patrick
17. Medicinal chemistry-William O. Foye
18. Textbook of Organic medicinal and pharmaceutical chemistry-Wilson and Gisvold's (Ed. Robert F. Dorje)
19. An introduction to medicinal chemistry-Graham L. Patrick, OUP Oxford, 2009.
20. Principles of medicinal chemistry (Vol. I and II)-S. S. Kadam, K. R. Mahadik and K.G. Bothara, Nirali prakashan.
21. Medicinal chemistry (Vol. I and II)-Burger
22. Strategies for organic drug synthesis and design - D. Lednicher Wiley
23. Pharmacological basis of therapeutics-Goodman and Gilman's (McGraw Hill)
24. Enzyme catalysis in organic synthesis, 3rd edition. Edited by Karlheinz Drauz, Harold Groger, and Oliver May, Wiley-VCH Verlag GmbH & Co KGaA, 2012.
25. Biochemistry, Dr U Satyanarayan and Dr U Chakrapani, Books and Allied (P) Ltd.
26. Bioorganic, Bioinorganic and Supramolecular chemistry, P.S. Kalsi and J.P. Kalsi. New Age International Publishers
27. The Organic Chemistry of Enzyme-Catalysed Reactions, Academic Press, By Richard B. Silverman
28. Enzymes: Practical Introduction to structure, mechanism and data analysis, By Robert A. Copeland, Wiley-VCH, Inc.
29. The Organic Chemistry of Biological Pathways By John McMurry, Tadhg Begley by Robert and company publishers
30. Bioorganic Chemistry- A practical approach to Enzyme action, H. Dugas and C. Penny. Springer Verlag, 1931
31. Biochemistry: The chemical reactions in living cells, by E. Metzler. Academic Press.
32. Concepts in biotechnology by D. Balasubramanian & others
33. Principles of biochemistry by Horton & others.

34. Bioorganic chemistry - A chemical approach to enzyme action by Herman Dugas and Christopher Penney.
35. Medicinal Natural Products: A Biosynthetic Approach by Paul M. Dewick. 3<sup>rd</sup> Edition, Wiley.
36. Natural product chemistry, A mechanistic, biosynthetic and ecological approach, Kurt B. G. Torssell, Apotekarsocieteten – Swedish pharmaceutical press.
37. Natural products Chemistry and applications, Sujata V Bhat, B.A. Nagasampagi and S. Meenakshi, Narosa Publishing House.
38. Natural Products Volume- 2, By O. P. Agarwal.
39. Chemistry of Natural Products, F. F. Bentley and F. R. Dollish, 1974.
40. Natural Product Chemistry Vol.1 and 2, K. Nakanishi J. Goto. S.Ito Majori and S. Nozoo, Academic Press, 1974.
41. Chemistry of natural products, V.K. Ahluwalia, Vishal Publishing Co.
42. Green Chemistry: An Introductory Text, 2nd Edition, Published by Royal Society of Chemistry, Authored by Mike Lancater.
43. Organic synthesis in water. By Paul A. Grieco, Blackie.
44. Green chemistry, Theory and Practical, Paul T. Anastas and John C. Warner.
45. New trends in green chemistry By V. K. Ahulwalia and M. Kidwai, 2nd edition, Anamaya Publishers, New Delhi.
46. An introduction to green chemistry, V. Kumar, Vishal Publishing Co.
47. Organic synthesis: Special techniques. V.K.Ahulwalia and Renu Aggarwal.

**Course Code: PSCHOEC-II 304**

**Paper-IV**

**Bioorganic chemistry**

<b>Unit 1:</b>	<b>Biomolecules-I</b>	<b>[15L]</b>
1.1	Amino acids, peptides and proteins: Chemical and enzymatic hydrolysis of proteins to peptides, amino acid sequencing. Secondary structure of proteins, forces responsible for holding of secondary structures, $\alpha$ - helix, $\beta$ -sheets, super secondary structure. Tertiary structure of protein: folding and domain structure. Quaternary structure.	[2L]
1.2	Nucleic acids: Structure and function of physiologically important nucleotides (c-AMP, ADP, ATP) and nucleic acids (DNA and RNA), replication, genetic code, protein biosynthesis, mutation.	[3L]
1.3	Structure: Purine & pyrimidine bases, ribose, deoxyribose, nucleosides and nucleotides (ATP, CTP, GTP, TTP, UTP) formation of polynucleotides strand with its shorthand representation.	[3L]
1.4	RNAs (various types in prokaryotes and eukaryotes) m- RNA and r- RNA – general account , t- RNA-clover leaf model, Ribozymes.	[2L]
1.5	DNA: Physical properties – Effect of heat on physical properties of DNA (Viscosity, buoyant density and UV absorption), Hypochromism, Hyperchromism and Denaturation of DNA. Reactions of nucleic acids (with DPA and Orcinol).	[2L]
1.6	Chemical synthesis of oligonucleotides: Phosphodiester, Phosphotriester,	[3L]

Phosphoramidite and H- phosphonate methods including solid phase approach.

<b>Unit 2:</b>	<b>Biomolecules-II</b>	<b>[15L]</b>
2.1	Chemistry of enzymes: Introduction, nomenclature, classes and general types of reactions catalyzed by enzymes. Properties of enzymes: a) enzyme efficiency/ catalytic power b) enzyme specificity; Fischer's 'lock and key' and Koshland 'induced fit' hypothesis. Concept and identification of active site.	[6L]
2.2	Factors affecting enzyme kinetics: Substrate concentration, enzyme concentration, temperature, pH, product concentration etc. Reversible and irreversible inhibition.	[4L]
2.3	Mechanism of enzyme action: transition-state theory, orientation and steric effect, acid-base catalysis, covalent catalysis, strain or distortion. Mechanism of chymotrypsin catalyzed hydrolysis of a peptide bond.	[5L]
<b>Unit 3:</b>	<b>Biomolecules - III</b>	<b>[15L]</b>
3.1	Chemistry of coenzymes. Structure, mechanism of action and bio-modeling studies of the following coenzymes: nicotinamide adenine dinucleotide, flavin adenine dinucleotide, thiamine pyrophosphate, pyridoxal phosphate, Vitamin B12, biotin, lipoic acid, Coenzyme A.	[12L]
3.2	Oxidative phosphorylation, chemiosmosis, rotary model for ATP synthesis and role of cytochrome in oxygen activation.	[3L]
<b>Unit 4:</b>	<b>Biomolecules – IV</b>	<b>[15L]</b>
4.1	Role of main enzymes involved in the synthesis and breakdown of glycogen.	[2L]
4.2	Enzyme catalyzed organic reactions: Hydrolysis, hydroxylation, oxidation and reduction.	[6L]
4.3	Enzymes in organic synthesis. Fermentation: Production of drugs/drug intermediates by fermentation. Production of chiral hydroxy acids, vitamins, amino acids, $\beta$ -lactam antibiotics. Synthesis of chemicals via microbial transformation, synthesis of L-ephedrine. Chemical processes with isolated enzymes in free form (hydrocyanation of m-phenoxybenzaldehyde) and immobilized form (production of 6-aminopenicillanic acid).	[7L]

#### **REFERENCES:**

1. Nelson, D. L, and Cox, M. M, (2008) Lehninger principles of Biochemistry 5<sup>th</sup> Edition, W. H. Freeman and Company, NY., USA.
2. Stryer, Lubert; Biochemistry; W. H. Freeman publishers.
3. Voet, D. and J. G. Voet (2004) Biochemistry, 3<sup>rd</sup> Edition, John Wiley & sons, Inc. USA.

4. Zubay, Goffrey L; Biochemistry; Wm C. Brown publishers.
5. V. Polshettiwar, R. Luque, A. Fihri, H. Zhu, M. Bouhrara and J-M Basset, Chem. Rev. 2011, 111, 3036-3075;
6. R. B. Nasir Baig and R. S. Varma, Chem. Comm., 2013, 49, 752-770;
7. M. B. Gawande, A. K. Rathi, P. S. Varma, Appl. Sci., 2013, 3, 656-674;
8. J. Govan and Y. K. Gun'ko, Nanomaterials, 2014, 4, 222-214.
9. K. Philippot and P. Serp, Nanomaterials in catalysis, First Edition. Edited by P. Serp and K. Philippot; 2013 Wiley –VCH Verlag GmbH & Co. KGaA
10. D. Astruc, Nanomaterials and Catalysis, Wiley-VCH Verlag GmbH & Co. KGaA, 2008, 1-48;
11. C. N. R. Roa, A. Muller and A. K. Cheetham, The chemistry of Nanomaterials, Wiley-VCH Verlag GmbH & Co. KGaA, 2005, 1-11;
12. The organic chemistry of drug design and drug action, Richard B. Silverman, 2nd edition, Academic Press
13. Medicinal chemistry, D. Sriram and P. Yogeeswari, 2nd edition, Pearson
14. An introduction to drug design-S. S. Pandeya and J. R. Dimmock (New age international)
15. Burger's medicinal chemistry and drug discovery. by Manfred E. Wolf
16. Introduction to Medicinal chemistry. by Graham Patrick
17. Medicinal chemistry-William O. Foye
18. T. B. of Organic medicinal and pharmaceutical chemistry-Wilson and Gisvold's (Ed. Robert F. Dorge)
19. An introduction to medicinal chemistry-Graham L. Patrick, OUP Oxford, 2009.
20. Principles of medicinal chemistry (Vol. I and II)-S. S. Kadam, K. R. Mahadik and K.G. Bothara, Nirali prakashan.
21. Medicinal chemistry (Vol. I and II)-Burger
22. Strategies for organic drug synthesis and design - D. Lednicher Wiley
23. Pharmacological basis of therapeutics-Goodman and Gilman's (McGraw Hill)
24. Enzyme catalysis in organic synthesis, 3rd edition. Edited by Karlheinz Drauz, Harold Groger, and Oliver May, Wiley-VCH Verlag GmbH & Co KGaA, 2012.
25. Biochemistry, Dr U Satyanarayan and Dr U Chakrapani, Books and Allied (P) Ltd.
26. Bioorganic, Bioinorganic and Supramolecular chemistry, P.S. Kalsi and J.P. Kalsi. New Age International Publishers
27. The Organic Chemistry of Enzyme-Catalysed Reactions, Academic Press, By Richard B. Silverman
28. Enzymes: Practical Introduction to structure, mechanism and data analysis, By Robert A. Copeland, Wiley-VCH, Inc.
29. The Organic Chemistry of Biological Pathways By John McMurry, Tadhg Begley by Robert and company publishers
30. Bioorganic Chemistry- A practical approach to Enzyme action, H. Dugas and C. Penny. Springer Verlag, 1931
31. Biochemistry: The chemical reactions in living cells, by E. Metzler. Academic Press.
32. Concepts in biotechnology by D. Balasubramanian & others
33. Principles of biochemistry by Horton & others.

34. Bioorganic chemistry - A chemical approach to enzyme action by Herman Dugas and Christopher Penney.
35. Medicinal Natural Products: A Biosynthetic Approach by Paul M. Dewick. 3<sup>rd</sup> Edition, Wiley.
36. Natural product chemistry, A mechanistic, biosynthetic and ecological approach, Kurt B. G. Torssell, Apotekarsocieteten – Swedish pharmaceutical press.
37. Natural products Chemistry and applications, Sujata V Bhat, B.A. Nagasampagi and S. Meenakshi, Narosa Publishing House.
38. Natural Products Volume- 2, By O. P. Agarwal.
39. Chemistry of Natural Products, F. F. Bentley and F. R. Dollish, 1974.
40. Natural Product Chemistry Vol.1 and 2, K. Nakanishi J. Goto. S.Ito Majori and S. Nozoo, Academic Press, 1974.
41. Chemistry of natural products, V.K. Ahluwalia, Vishal Publishing Co.
42. Green Chemistry: An Introductory Text, 2nd Edition, Published by Royal Society of Chemistry, Authored by Mike Lancater.
43. Organic synthesis in water. By Paul A. Grieco, Blackie.
44. Green chemistry, Theory and Practical, Paul T. Anastas and John C. Warner.
45. New trends in green chemistry By V. K. Ahulwalia and M. Kidwai, 2nd edition, Anamaya Publishers, New Delhi.
46. An introduction to green chemistry, V. Kumar, Vishal Publishing Co.
47. Organic synthesis: Special techniques. V.K.Ahulwalia and Renu Aggarwal.

### **Semester III: Practicals**

**Course code: PSCHO3P1**

#### **Separation of a ternary mixture of organic compounds and identification including derivative preparations using micro-scale technique**

1. Separation of a ternary mixture (S-S-S, S-S-L, S-L-L and L-L-L) (for solid mixture: water insoluble/ soluble including carbohydrates) based upon differences in the physical and the chemical properties of the components.
2. Identification of the two components (indicated by the examiner) using micro-scale technique.
3. Preparation of derivatives (any one of separated compound).

**(Minimum 8 experiments)**

**Course code: PSCHO3P2**

#### **Single step organic preparation(1.0 g scale) involving purification by Steam distillation / Vacuum distillation or Column chromatography.**

1. Preparation of acetanilide from aniline and acetic acid using Zn dust. (Purification by column chromatography)
2. Preparation of 1-nitronaphthalene from naphthalene. (Purification by steam distillation)
3. .Preparation of acetyl ferrocene from ferrocene. (Purification by column chromatography)

4. Preparation of 3-nitroaniline from 1,3-dinitrobenzene. (Purification by column chromatography)
5. Preparation of benzyl alcohol from benzaldehyde. (Purification by vacuum distillation).
6. Preparation of methyl salicylate from salicylic acid. (Purification by vacuum distillation).
7. Preparation of 4-methylacetophenone from toluene. (Purification by vacuum distillation).
8. Preparation of phenyl acetate from phenol. (Purification by vacuum distillation)
9. Preparation of 2-chlorotoluene from *o*-toluidine. (Purification by steam distillation)
10. Preparation of 4-nitrophenol from phenol. (Purification by steam distillation/ column chromatography)
11. Preparation of fluorenone from fluorene. (Purification by column chromatography)
12. Preparation of dimethylphthalate from phthalic anhydride. (Purification by vacuum distillation)

**(Minimum 8 experiments)**

**Note:**

1. Students are expected to know (i) the planning of synthesis, effect of reaction parameters including stoichiometry, and **safety aspects including MSDS** (ii) the possible mechanism, expected spectral data (IR and NMR) of the starting material and final product.
2. Students are expected to purify the product by Steam distillation / Vacuum distillation or Column chromatography, measure its mass or volume, check the purity by TLC, determine physical constant and calculate percentage yield.

**References for Practicals**

1. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis- V.K. Ahluwalia and Renu Aggarwal, Universities Press India Ltd., 2000
2. Advanced Practical Organic Chemistry – N. K. Vishnoi, Third Addition, Vikas Publishing House PVT Ltd
3. Systematic Laboratory Experiments in Organic Synthesis- A. Sethi, New Age International Publications
4. Systematic Identification of Organic compounds, 6th edition, R. L. Shriner, R. C. Fuson and D.Y. Curtin Wiley, New York.
5. Vogel's Textbook of Quantitative Analysis, revised, J. Bassett, R. C. Denney, G. H. Jeffery and J. Mendham, ELBS
6. Experiments and Techniques in Organic Chemistry, D. Pasto, C. Johnson and M. Miller, Prentice Hall
7. Macro-scale and Micro-scale Organic Experiments, K. L. Williamson, D. C. Heath.
8. Systematic Qualitative Organic Analysis, H. Middleton, Adward Arnold.
9. Handbook of Organic Analysis- Qualitative and Quantitative, H. Clark, Adward Arnold.
10. Vogel's Textbook of Practical Organic Chemistry, Fifth edition, 2008,



B.S.Furniss, A. J.Hannaford, P. W. G. Smith, A. R. Tatchell, Pearson Education.

11. Laboratory Manual of Organic Chemistry, Fifth edition, R K Bansal, New Age Publishers.

12. Organic structures from spectra, L. D. Field, S. Sternhell, John R. Kalman, Wiley, 4<sup>th</sup> ed., 2011.

1. The candidate is expected to submit a journal and project certified by the Head of the Department /institution at the time of the practical examination.
2. A candidate will not be allowed to appear for the practical examination unless he/she produces a certified journal or a certificate from the Head of the institution/department stating that the journal is lost and the candidate has performed the required number of experiments satisfactorily. The list of the experiments performed by the candidate should be attached with such certificate.
3. Use of non-programmable calculator is allowed both at the theory and the practical examination.

#### Semester – IV

Course Code: PSCHO401

#### Paper - I (Theoretical organic chemistry-II)

<b>Unit 1:</b>	<b>Physical organic chemistry</b>	<b>[15L]</b>
<b>1.1</b>	Structural effects and reactivity: Linear free energy relationship (LFER) in determination of organic reaction mechanism, The Hammett equation, substituent constants, theories of substituent effects, interpretation of $\sigma$ -values, reaction constants $\rho$ , Yukawa-Tsuno equation.	<b>[7L]</b>
<b>1.2</b>	Uses of Hammett equation, deviations from Hammett equation. Dual parameter correlations, Inductive substituent constants. The Taft model, $\sigma_I$ and $\sigma_R$ scales, steric parameters $E_s$ and $\beta$ . Solvent effects, Okamoto-Brown equation, Swain-Scott equation, Edward and Ritchie correlations, Grunwald-Winstein equation, Dimroth's $E_T$ parameter, Solvatochromism Z-scale, Spectroscopic Correlations, Thermodynamic Implications.	<b>[8L]</b>
<b>Unit 2</b>	<b>Supramolecular chemistry</b>	<b>[15L]</b>
<b>2.1</b>	Principles of molecular associations and organizations as exemplified in biological macromolecules like nucleic acids, proteins and enzymes.	<b>[3L]</b>
<b>2.2</b>	Synthetic molecular receptors: receptors with molecular cleft, molecular tweezers, receptors with multiple hydrogen sites.	<b>[3L]</b>
<b>2.3</b>	Structures and properties of crown ethers, cryptands, cyclophanes, calixarenes, rotaxanes and cyclodextrins. Synthesis of crown ethers, cryptands and calixarenes.	<b>[5L]</b>
<b>2.4</b>	Molecular recognition and catalysis, molecular self-assembly. Supramolecular Polymers, Gels and Fibres.	<b>[4L]</b>
<b>Unit 3</b>	<b>Stereochemistry- II</b>	<b>[15L]</b>

- 3.1** Racemisation and resolution of racemates including conglomerates: Mechanism of racemisation, methods of resolution: mechanical, chemical, kinetic and equilibrium asymmetric transformation and through inclusion compounds. [3L]
- 3.2** Determination of enantiomer and diastereomer composition: enzymatic method, chromatographic methods. Methods based on NMR spectroscopy: use of chiral derivatising agents (CDA), chiral solvating agents (CSA) and Lanthanide shift reagents (LSR). [3L]
- 3.3** Correlative method for configurational assignment: chemical, optical rotation, and NMR spectroscopy. [4L]
- 3.4** Molecular dissymmetry and chiroptical properties: Linearly and circularly polarized light. Circular birefringence and circular dichroism. ORD and CD curves. Cotton effect and its applications. The octant rule and the axial  $\alpha$ -haloketone rule with applications. [5L]
- Unit 4: Asymmetric synthesis** [15L]
- 4.1** Principles of asymmetric synthesis: Introduction, the chiral pool in Nature, methods of asymmetric induction – substrate, reagent and catalyst controlled reactions. [3L]
- 4.2** Synthesis of L-DOPA [Knowles's Monsanto process]. Asymmetric reactions with mechanism: Aldol and related reactions, Cram's rule, Felkin-Anh model, Sharpless enantioselective epoxidation, hydroxylation, aminohydroxylation, Diels-Alder reaction, reduction of prochiral carbonyl compounds and olefins. [9L]
- 4.3** Use of chiral auxiliaries in diastereoselective reductions, asymmetric amplification. Use of chiral BINOLs, BINAPs and chiral oxazolines asymmetric transformations. [3L]

## **REFERENCES:**

- 1 March's Advanced Organic Chemistry, Jerry March, sixth edition, 2007, John Wiley and sons.
- 2 A guide to mechanism in Organic Chemistry, 6<sup>th</sup> edition, 2009, Peter Sykes, Pearson education, New Delhi.
- 3 Advanced Organic Chemistry: Reaction Mechanisms, R. Bruckner, Academic Press (2002).
- 4 Mechanism and theory in Organic Chemistry, T. H. Lowry and K. C. Richardson, Harper and Row.
- 5 Organic Reaction Mechanism, 4<sup>th</sup> edition, V. K. Ahluvalia, R. K. Parashar, Narosa Publication.
- 6 Reaction Mechanism in Organic Chemistry, S.M. Mukherji, S.P. Singh, Macmillan Publishers, India.
- 7 Organic Chemistry, Part A and B, Fifth edition, 2007, Francis A. Carey and Richard J. Sundberg, Springer.
- 8 Carbenes, Nitrenes and Arynes. Von T. L. Gilchrist, C. W. Rees. Th. Nelson and Sons Ltd., London 1969.
- 9 Organic reactive intermediates, Samuel P. MacManus, Academic Press.

- 10 Organic Chemistry, J. Clayden, S. Warren, N. Greeves, P. Wothers, 1st Edition, Oxford University Press ( 2001).
- 11 Organic Chemistry, Seventh Edition, R.T. Morrison, R. N. Boyd & S. K. Bhattacharjee, Pearson. Advanced Organic Chemistry: Reactions & Mechanisms, second edition, B. Miller and R. Prasad, Pearson.
- 12 Organic reactions & their mechanisms, third revised edition, P.S. Kalsi, New Age International Publishers.
- 13 Organic Chemistry: Structure and Function, P. Volhardt and N. Schore, 5th Edition, 2012
- 14 Organic Chemistry, W. G. Solomons, C. B. Fryhle, , 9th Edition, Wiley India Pvt. Ltd., 2009.
- 15 Pericyclic Reactions, S. Sankararaman, Wiley VCH, 2005.
- 16 Advanced organic chemistry, Jagdamba Singh L. D. S. Yadav, Pragati Prakashan, 2011
- 17 Pericyclic reactions, Ian Fleming, Oxford university press, 1999.
- 18 Pericyclic reactions-A mechanistic approach, S. M. Mukherji, Macmillan Co. of India 1979.
- 19 Organic chemistry, 8<sup>th</sup> edition, John McMurry
- 20 Modern methods of Organic Synthesis, 4<sup>th</sup> Edition W. Carruthers and Iain Coldham, Cambridge University Press 2004
- 21 Modern physical chemistry, Eric V Anslyn, Dennis A. Dougherty, University science books, 2006
- 22 Physical Organic Chemistry, N. S. Isaacs, ELBS/Longman
- 23 Stereochemistry of Carbon Compounds: Principles and Applications, D, Nasipuri, 3<sup>rd</sup> edition, New Age International Ltd.
- 24 Stereochemistry of Organic Compounds, Ernest L. Eliel and Samuel H. Wilen, Wiley-India edit
- 25 Stereochemistry, P. S. Kalsi, 4<sup>th</sup> edition, New Age International Ltd
- 26 Organic Stereochemistry, M. J. T. Robinson, Oxford University Press, New Delhi, India edition, 2005
- 27 Bioorganic, Bioinorganic and Supramolecular chemistry, P.S. Kalsi and J.P. Kalsi. New Age International Publishers
- 28 Supramolecular Chemistry; Concepts and Perspectives, J. M. Lehn, VCH.
- 29 Crown ethers and analogous compounds, M. Hiraoka, Elsevier, 1992.
- 30 Large ring compounds, J.A. Semlyen, Wiley-VCH, 1997.
- 31 Fundamentals of Photochemistry, K. K. Rohtagi-Mukherji, Wiley-Eastern
- 32 Essentials of Molecular Photochemistry, A. Gilbert and J. Baggott, Blackwell Scientific Publication.
- 33 Molecular Photochemistry, N. J. Turro, W. A. Benjamin.
- 34 Introductory Photochemistry, A. Cox and T. Camp, McGraw-Hill
- 35 Photochemistry, R. P. Kundall and A. Gilbert, Thomson Nelson.
- 36 Organic Photochemistry, J. Coxon and B. Halton, Cambridge University Press.

**Course Code: PSCHO402**  
**Paper - II (Synthetic organic chemistry-II)**

<b>Unit 1:</b>	<b>Designing Organic Synthesis-I</b>	<b>[15L]</b>
1.1	<b>Protecting groups in Organic Synthesis:</b> Protection and deprotection of the hydroxyl, carbonyl, amino and carboxyl functional groups and its applications.	[3L]
1.2	<b>Concept of umpolung (Reversal of polarity):</b> Generation of acyl anion equivalent using 1,3-dithianes, methyl thiomethyl sulfoxides, cyanide ions, cyanohydrin ethers, nitro compounds and vinylated ethers.	[3L]
1.3	<b>Introduction to Retrosynthetic analysis and synthetic planning:</b> Linear and convergent synthesis; Disconnection approach: An introduction to synthons, synthetic equivalents, disconnection approach, functional group interconversions (FGI), functional group addition (FGA), functional group removal (FGR) importance of order of events in organic synthesis, one and two group C-X disconnections (1,1; 1,2; 1,3 difunctionalized compounds), selective organic transformations: chemoselectivity, regioselectivity, stereoselectivity, enantioselectivity.	[9L]
<b>Unit 2:</b>	<b>Designing Organic Synthesis-II</b>	<b>[15L]</b>
2.1	<b>General strategy:</b> choosing a disconnection-simplification, symmetry, high yielding steps, and recognisable starting material.	[3L]
2.2	<b>One group C-C Disconnections:</b> Alcohols (including stereoselectivity), carbonyls (including regioselectivity), Alkene synthesis, use of acetylenes and aliphatic nitro compounds in organic synthesis.	[6L]
2.3	<b>Two group C-C Disconnections:</b> 1,2- 1,3- 1,4- 1,5- and 1,6- difunctionalized compounds, Diels-Alder reactions, $\alpha$ , $\beta$ -unsaturated compounds, control in carbonyl condensations, Michael addition and Robinson annelation.	[6L]
<b>Unit 3:</b>	<b>Electro-organic chemistry and Selected methods of Organic synthesis</b>	<b>[15L]</b>
3.1	<b>Electro-organic chemistry:</b>	[7L]
3.1.1	Introduction: Electrode potential, cell parameters, electrolyte, working electrode, choice of solvents, supporting electrolytes.	
3.1.2	Cathodic reduction: Reduction of alkyl halides, aldehydes, ketones, nitro compounds, olefins, arenes, electro-dimerization.	
3.1.3	Anodic oxidation: Oxidation of alkylbenzene, Kolbe reaction, Non-Kolbe oxidation, Shono oxidation.	
3.2	<b>Selected Methods of Organic synthesis</b>	[8L]
	Applications of the following in organic synthesis:	
3.2.1	Crown ethers, cryptands, micelles, cyclodextrins, catenanes.	
3.2.2	Organocatalysts: Proline, Imidazolidinone.	
3.2.3	Pd catalysed cycloaddition reactions: Stille reaction, Saegusa-Ito oxidation	

	to enones, Negishi coupling.	
3.2.4	Use of Sc(OTf) <sub>3</sub> and Yb(OTf) <sub>3</sub> as water tolerant Lewis acid catalyst in aldol condensation, Michael reaction, Diels-Alder reaction, Friedel – Crafts reaction.	
<b>Unit 4:</b>	<b>Transition and rare earth metals in organic synthesis</b>	<b>[15L]</b>
4.1	<b>Introduction to basic concepts:</b> 18 electron rule, bonding in transition metal complexes, C-H activation, oxidative addition, reductive elimination, migratory insertion.	[3L]
4.2	<b>Palladium in organic synthesis:</b> $\pi$ -bonding of Pd with olefins, applications in C-C bond formation, carbonylation, alkene isomerisation, cross-coupling of organometallics and halides. Representative examples: Heck reaction, Suzuki-Miyaura coupling, Sonogashira reaction and Wacker oxidation. Heteroatom coupling for bond formation between aryl/vinyl groups and N, S, or P atoms.	[5L]
4.3	<b>Olefin metathesis</b> using Grubb's catalyst.	[1L]
4.4	<b>Application of Ni, Co, Fe, Rh, and Cr carbonyls</b> in organic synthesis.	[4L]
4.5	<b>Application of samarium iodide</b> including reduction of organic halides, aldehydes and ketones, $\alpha$ -functionalised carbonyl and nitro compounds.	[1L]
4.6	<b>Application of Ce(IV)</b> in synthesis of heterocyclic quinoxaline derivatives and its role as a de-protecting agent.	[1L]

#### REFERENCES:

- **Advanced Organic Chemistry**, Part A and Part B: Reaction and Synthesis, Francis A. Carey, Richard J. Sundberg, 5<sup>th</sup> Edition, Springer Verlag
- **Modern Methods of Organic Synthesis**, 4<sup>th</sup> Edition, W. Carruthers and Iain Coldham, Cambridge University Press, 2004.
- **Chem.Rev. 2002, 102, 2227-2302, Rare Earth Metal Triflates in Organic Synthesis**, S. Kobayashi, M. Sugiura, H. Kitagawa, and W.W.L. Lam.
- **Organic Chemistry**, Clayden Greeves Warren and Wothers, Oxford Press (2001).
- **Moder Organic Synthesis: An Introduction**, G.S. Zweifel and M.H. Nantz, W.H. Freeman and Company, (2007).
- **Advanced Organic Chemistry: Reaction Mechanism**, R. Bruckner, Academic Press (2002).
- **Principles of Organic Synthesis**, R.O.C. Norman & J. M. Coxon, 3<sup>rd</sup> Edn., Nelson Thornes
- **Organic Chemistry**, 7<sup>th</sup> Edn, R. T .Morrison, R. N. Boyd, & S. K. Bhattacharjee, Pearson
- **Strategic Applications of Name Reactions in Organic Synthesis**, L. Kurti & B. Czako (2005), Elsevier Academic Press

- **Advanced Organic Chemistry: Reactions & Mechanisms**, 2<sup>nd</sup> Edn., B. Miller & R. Prasad, Pearson
- **Organic reactions and their mechanisms**, 3<sup>rd</sup> revised edition, P.S. Kalsi, New Age International Publishers
- **Organic Synthesis: The Disconnection Approach**, Stuart Warren, John Wiley & Sons, 2004
- **Name Reactions and Reagents in Organic Synthesis**, 2<sup>nd</sup> Edn., Bradford P. Mundy, Michael G. Ellard, and Frank Favoloro, Jr., Wiley-Interscience
- **Name Reactions**, Jie Jack Lie, 3<sup>rd</sup> Edn., Springer
- **Organic Electrochemistry**, H. Lund, and M. Baizer, 3<sup>rd</sup> Edn., Marcel Dekker.

### Course Code: PSCHO403

#### Paper - III (Natural products and heterocyclic chemistry)

<b>Unit 1:</b>	<b>Natural products-III</b>	<b>[15L]</b>
1.1	<b>Steroids:</b> General structure, classification. Occurrence, biological role, important structural and stereochemical features of the following: corticosteroids, steroidal hormones, steroidal alkaloids, sterols and bile acids.	[5L]
1.2	Synthesis of 16-DPA from cholesterol and plant sapogenin.	[2L]
1.3	Synthesis of the following from 16-DPA: androsterone, testosterone, oestrone, oestriol, oestradiol and progesterone.	[5L]
1.4	Synthesis of cinerolone, jasmolone, allethrolone, exaltone and muscone.	[3L]
<b>Unit 2:</b>	<b>Natural products-IV</b>	<b>[15L]</b>
2.1	<b>Vitamins:</b> Classification, sources and biological importance of vitamin B <sub>1</sub> , B <sub>2</sub> , B <sub>6</sub> , folic acid, B <sub>12</sub> , C, D <sub>1</sub> , E ( $\alpha$ -tocopherol), K <sub>1</sub> , K <sub>2</sub> , H ( $\beta$ - biotin). Synthesis of the following: Vitamin A from $\beta$ -ionone and bromoester moiety. Vitamin B <sub>1</sub> including synthesis of pyrimidine and thiazole moieties Vitamin B <sub>2</sub> from 3, 4-dimethylaniline and D(-)-ribose Vitamin B <sub>6</sub> from: 1) ethoxyacetylacetone and cyanoacetamide, 2) ethyl ester of N-formyl-DL-alanine (Harris synthesis) Vitamin E ( $\alpha$ -tocopherol) from trimethylquinol and phytol bromide Vitamin K <sub>1</sub> from 2-methyl-1, 4-naphthaquinone and phytol.	[5L]
2.2	<b>Antibiotics:</b> Classification on the basis of activity. Structure elucidation, spectral data of penicillin-G, cephalosporin-C and chloramphenicol. Synthesis of chloramphenicol (from benzaldehyde and $\beta$ -nitroethanol) penicillin-G and phenoxymethylpenicillin from D-penicillamine and t-butyl phthalimide malonaldehyde (synthesis of D-penicillamine and t-butyl phthalimide malonaldehyde expected).	[6L]
2.3	<b>Naturally occurring insecticides:</b> Sources, structure and biological properties of pyrethrums (pyrethrin I), rotenoids (rotenone). Synthesis of pyrethrin I.	[2L]
2.4	<b>3.4 Terpenoids:</b> Occurrence, classification, structure elucidation,	[2L]



stereochemistry, spectral data and synthesis of zingiberene .

**Unit 3: Heterocyclic compounds-I [15L]**

Heterocyclic compounds: Introduction, classification, Nomenclature of heterocyclic compounds of monocyclic (3-6 membered) (Common, systematic (Hantzsch-Widman) and replacement nomenclature)

Structure, reactivity, synthesis and reactions of pyrazole, imidazole, oxazole, isoxazole, thiazole, isothiazole, pyridazines, pyrimidine, pyrazines and oxazines.

**Unit 4: Heterocyclic compounds-II [15L]**

Nomenclature of heterocyclic compounds of bicyclic/tricyclic (5-6 Membered) fused heterocycles (up to three hetero atoms). (Common, systematic (Hantzsch-Widman) and replacement nomenclature)

Nucleophilic ring opening reactions of oxiranes, aziridines, oxetanes and azetidines.

Structure, reactivity, synthesis and reactions of coumarins, quinoxalines, cinnolines, indole, benzimidazoles, benzoxazoles, benzothiazoles, Purines and acridines.

**REFERENCES:**

1. Natural product chemistry, A mechanistic, biosynthetic and ecological approach, Kurt B.G. Torssell, Apotekarsocieteten – Swedish Pharmaceutical Press.
2. Natural products chemistry and applications, Sujata V. Bhat, B.A. Nagasampagi and S. Meenakshi, Narosa Publishing House, 2011.
3. Organic Chemistry Natural Products Volume-II, O. P. Agarwal, Krishna Prakashan, 2011.
4. Chemistry of natural products, F. F. Bentley and F. R. Dollish, 1974
5. Natural Product Chemistry Vol.1 and 2, K. Nakanishi J. Goto. S.Ito Majori and S. Nozoo, Academic Press, 1974.
6. Chemistry of natural products, V.K. Ahluwalia, Vishal Publishing Co. 2008.
7. Heterocyclic chemistry, 3<sup>rd</sup> edition, Thomas L. Gilchrist, Pearson Education, 2007.
8. Heterocyclic Chemistry, Synthesis, Reactions and Mechanisms, R. K. Bansal, Wiley Eastern Ltd., 1990.
9. Heterocyclic Chemistry, J. A. Joule and G. F. Smith, ELBS, 2<sup>nd</sup> edition, 1982.
10. The Conformational Analysis of Heterocyclic Compounds, F.G. Riddell, Academic Press, 1980.
11. Principles of Modern Heterocyclic Chemistry, L.A. Paquette, W.B. Benjamin, Inc., 1978.
12. An Introduction to the Chemistry of Heterocyclic Compounds, 2<sup>nd</sup> edition, B.M. Acheson, 1975.

13. Natural Products: Chemistry and Biological Significance Interscience, J. Mann, R.S.Davidson, J.B.Hobbs, D.V. Banthrophe and J. B. Harborne, Longman,Essex, 1994.
14. Organic Chemistry, Vol 2, I.L. Finar, ELBS, 6<sup>th</sup> edition, Pearson.
15. Stereoselective Synthesis: A Practical Approach, M. Nogradi, Wiley-VCH, 1995.
16. Rodd's Chemistry of Carbon Compounds, Ed. S. Coffey, Elsevier.
17. Chemistry, Biological and Pharmacological Properties of Medicinal Plants from the Americas, Ed. Kurt Hostettmann, M.P. Gupta and A. Marston, Harwood Academic Publishers.
18. Introduction to Flavonoids, B.A. Bohm, Harwood Academic Publishers, 1998.
19. New Trends in Natural Product Chemistry, Atta-ur-Rahman and M.I. Choudhary, Harwood Academic Publishers, 1998.
20. Insecticides of Natural Origin, Sukh Dev, Harwood Academic Publishers.
21. Total. Synthesis of Longifolene, J. Am. Chem. Soc., E. J. Corey, M. Ohno, R. B. Mitra, and P. A. Vatakencherry. 1964, 86, 478.
22. Total. Synthesis of Longifolene, J. Am. Chem. Soc. 1961, 83, 1251.
- 23. The structure and total synthesis of 5-Vetivone, J. A. Marshall and P. C. Johnson, J. Org. Chem., 35, 192 (1970).**
- 24. Total synthesis of spirovetivanes, J. Am. Chem. Soc. 1967, 89, 2750.**
25. The Total Synthesis of Reserpine, Woodward, R. B.; Bader, F. E.; Bickel, H., Frey, A. J.; Kierstead, R. W. Tetrahedron 1958, 2, 1-57.
- 26. Total synthesis of Griseofulvin, Stork, G.; Tomasz, M. J. Am. Chem. Soc. 1962, 84, 310.**
- 27. Synthesis of (±)-4-demethoxydaunomycinone, A. V. Rama Rao , G. Venkatswamy , S. M. Javeed M. , V. H. Deshpande, B. Ramamohan Rao, J. Org. Chem., 1983, 48 (9), 1552.**
28. The Alkaloids, The fundamental Chemistry A biogenetic approach, Marcel Dekker Inc. New York, 1979.
29. Comprehensive Organic Chemistry by Barton and Ollis, Pergamon Press, Oxford, 1979.
30. Medicinal Natural Products, a Biosynthetic Approach, Derick Paul, John Wiley and Sons, 2002.
31. Biosynthesis of Natural Products, Mannitto Paolo, Ellis Horwood Limited, 1981.
32. Selected Organic synthesis, Ian Fleming, John Wiley and Sons, 1973.
- 33. Total synthesis of Natural Products, J. Apsimon, John Wiley and Sons.**
34. The Logic of Chemical Synthesis, E. J. Corey and Xue-Min Cheng,

Wiley Interscience.

35. Classics in Total Synthesis , K. C. Nicolaou and E. J. Sorensen, Weinheim: VCH, 1996.
36. Spectroscopy of Organic compounds, P.S. Kalsi, New Age International Pub. Ltd. And Wiley Eastern Ltd., Second edition, 1995.
37. Applications of Absorption Spectroscopy of Organic compounds, J. R. Dyer, Prentice Hall of India, 1987.
38. Spectrometric Identification of Organic compounds, R.M. Silverstein and others, John Wiley and Sons Inc., 5th ed., 1991
39. Absorption spectroscopy of organic Molecules, V.M. Parikh, 1974.
40. Spectroscopic methods in organic chemistry, Williams and Fleming, Tata McGraw Hill, 4th ed, 1989.
41. Organic spectroscopy, William Kemp, ELBS, 3rd ed., 1987.
42. Organic structures from spectra, [L. D. Field](#), [S. Sternhell](#), [John R. Kalman](#), Wiley, 4<sup>th</sup> ed., .2011
43. Introduction to spectroscopy, [Donald L. Pavia](#), [Gary M. Lampman](#), [George S. Kriz](#), James R. Vyvyan, 4<sup>th</sup> ed., 2009.
44. Organic spectroscopic structure determination: a problem-based learning approach [Douglass F. Taber](#), Oxford University Press, 17-Sep-2007.
45. Organic Spectroscopy: Principles And Applications, [Jag Mohan](#), Alpha Science International Ltd., 30-Mar-2004
46. Alkaloids, V.K. Ahluwalia, Ane Books Pvt.Ltd.
47. Biotransformations in Organic Chemistry, 5<sup>th</sup> Edition, Kurt Faber, Springer
48. Structure Determination of Organic Compounds, EPretsch, P. Buhlmann, C.Affolter, Springer

### **Course Code: PSCHOOC-I 404**

### **Paper – IV (INTELLECTUAL PROPERTY RIGHTS & CHEMINFORMATICS)**

**Unit 1:** [15L]

**Introduction to Intellectual Property:** [2L]

Historical Perspective, Different types of IP, Importance of protecting IP.

**Patents:** [5L]

Historical Perspective, Basic and associated right, WIPO, PCT system, Traditional Knowledge, Patents and Health care-balancing promoting innovation with public health, Software patents and their importance for India.

**Industrial Designs:** [2L]

Definition, How to obtain, features, International design registration.

**Copyrights:** [2L]

Introduction, How to obtain, Differences from Patents.

**Trade Marks:** [2L]

Introduction, How to obtain, Different types of marks – Collective marks, certification marks, service marks, trade names etc.

**Geographical Indications:** [2L]

Definition, rules for registration, prevention of illegal exploitation, importance to India.

**Unit 2:** [15L]

**Trade Secrets:** [2L]

Introduction and Historical Perspectives, Scope of Protection, Risks involved and legal aspects of Trade Secret Protection.

**IP Infringement issue and enforcement:** [2L]

Role of Judiciary, Role of law enforcement agencies – Police, Customs etc.

**Economic Value of Intellectual Property:** [2L]

Intangible assests and their valuation, Intellectual Property in the Indian context – Various Laws in India Licensing and Technology transfer.

**Different International agreements:**

**(a) World Trade Organization (WTO):** [5L]

- (i) General Agreement on Tariffs and Trade (GATT), Trade Related Intellectual Property Rights (TRIPS) agreement
- (ii) General Agreement on Trade Related Services (GATS) Madrid Protocol.
- (iii) Berne Convention
- (iv) Budapest Treaty

**(b) Paris Convention** [6L]

**WIPO and TRIPS, IPR and Plant Breeders Rights, IPR and Biodiversity.**

**Unit III:** [15L]

**Introduction to Cheminformatics:** [5L]

History and evolution of cheminformatics, Use of Cheminformatics, Prospects of cheminformatics, Molecular modeling and structure elucidation.

**Representation of molecules and chemical reactions:** [5L]

Nomenclature, Different types of notations, SMILES coding, Matrix representations, Structure of Molfiles and Sdfiles, Libraries and toolkits, Different electronic effects, Reaction classification.

**Searching Chemical Structures:** [5L]

Full structure search, sub-structure search, basic ideas, similarity search, three dimensional search methods, basics of computation of physical and chemical data and structure descriptors, data visualization.

**Unit IV:** [15L]

**Applications:**

Prediction of Properties of Compound, Linear Free Energy Relations, Quantitative Structure – Property Relations, Descriptor Analysis, Model Building, Modeling Toxicity, Structure – Spectra correlations, Prediction NMR, IR and Mass spectra, Computer Assisted Structure elucidations, Computer assisted Synthesis Design, Introduction to drug design, Target Identification and Validation, Lead Finding and Optimization, analysis of HTS data, Virtual Screening, Design of Combinatorial Libraries, Ligand-based and Structure based Drug design, Application of Cheminformatics in Drug Design.

**REFERENCES:**

1. Andrew R. Leach & Valerie J. Gillet (2007) *An Introduction to Cheminformatics*. Springer: The Netherlands.
2. Gasteiger, J. & Engel, T. (2003) *Cheminformatics: A textbook*. Wiley–VCH
3. Gupta, S. P. *QSAR and Molecular Modeling*. Springer-Anamaya Pub.: New Delhi.

**Course Code: PSCHOOC-II 404**  
**PAPER – IV: RESEARCH METHODOLOGY**

**Unit 1:** [15L]

**Print:** [5L]

Primary, Secondary and Tertiary sources.

**Journals:**

Journal abbreviations, abstracts, current titles, reviews, monographs, dictionaries, text-books, current contents, Introduction to Chemical Abstracts and Beilstein, Subject Index, Substance Index, Author Index, Formula Index, and other Indices with examples.

**Digital:** [5L]

Web sources, E-journals, Journal access, TOC alerts, Hot articles, Citation Index, Impact factor, H-index, E-consortium, UGC infonet, E-books, Internet discussion groups and communities, Blogs, preprint servers, Search engines, Scirus, Google Scholar, ChemIndustry, Wiki-databases, ChemSpider, Science Direct, SciFinder, Scopus.

**Information Technology and Library Resources:** [5L]

The Internet and World wide web, Internet resources for Chemistry, finding and citing published information.

**Unit II: DATA ANALYSIS** [15L]

**The Investigative Approach:**

Making and recording Measurements, SI units and their use, Scientific methods and design of experiments.

**Analysis and Presentation of Data:**

Descriptive statistics, choosing and using statistical tests, Chemometrics, Analysis of Variance (ANOVA), Correlation and regression, curve fitting, fitting of linear equations, simple linear cases, weighted linear case, analysis of residuals, general polynomial fitting, linearizing transformations, exponential function fit,  $r$  and its abuse, basic aspects of multiple linear regression analysis.

**Unit III: METHODS OF SCIENTIFIC RESEARCH AND WRITING** [15L]

## **SCIENTIFIC PAPERS**

Reporting practical and project work, Writing literature surveys and reviews, organizing a poster display, giving an oral presentation.

### **Writing Scientific Papers:**

Justification for scientific contributions, bibliography, description of methods, conclusions, the need for illustration, style, publications of scientific work, writing ethics, avoiding plagiarism.

## **Unit IV: CHEMICAL SAFETY & ETHICAL HANDLING OF CHEMICALS**

[15L]

Safe working procedure and protective environment, protective apparel, emergency procedure, first aid, laboratory ventilation, safe storage and use of hazardous chemicals, procedure for working with substances that pose hazards, flammable or explosive hazards, procedures for working with gases at pressures above or below atmospheric pressure, safe storage and disposal of waste chemicals, recovery, recycling and reuse of laboratory chemicals, procedure for laboratory disposal of explosives, identification, verification and segregation of laboratory waste, disposal of chemicals in the sanitary sewer system, incineration and transportation of hazardous chemicals.

### **REFERENCES:**

1. Dean, J. R., Jones, A. M., Holmes, D., Reed, R., Weyers, J., & Jones, A., (2011), *Practical skills in Chemistry*, 2<sup>nd</sup> Ed., Prentice Hall, Harlow.
2. Hibbert, D. B. & Gooding, J. J. (2006) *Data Analysis for Chemistry* Oxford University Press.
3. Topping, J., (1984) *Errors of Observation and their Treatment* 4<sup>th</sup> Ed., Chapman Hill, London.
4. Harris, D. C. (2007) *Quantative Chemical Analysis* 6<sup>th</sup> Ed., Freeman Chapters 3-5
5. Levie, R. De. (2001) *How to use Excel in Analytical Chemistry and in general scientific data analysis* Cambridge University Press.
6. Chemical Safety matters – IUPAC-IPCS, (1992) Cambridge University Press.
7. OSU Safety manual 1.01

## **Semester IV: Practicals Course code: PSCHO4P1**

### **Two steps preparations**

1. Acetophenone → Acetophenone phenyl hydrazine → 2-phenyl

indole.

2. 2-naphthol → 1-phenyl azo-2-naphthol → 1-amino-2-naphthol.
3. Cyclohexanone → cyclohexanone oxime → Caprolactum.
4. Hydroquinone → hydroquinone diacetate → 2,5-dihydroxyacetophenone.
5. 4-nitrotoluene → 4-nitrobenzoic acid → 4-aminobenzoic acid.
6. *o*-nitroaniline → *o*-phenylene diamine → Benzimidazole.
7. Benzophenone → benzophenone oxime → benzanilide.
8. *o*-chlorobenzoic acid → N-phenyl anthranilic acid → acridone.
9. Benzoin → benzil → benzoic acid.
10. Phthalic acid → phthalimide → anthranilic acid.
11. Resorcinol → 4-methyl-7-hydroxy coumarin → 4-methyl-7-acetoxy coumarin.
12. Anthracene → anthraquinone → anthrone.

**(Minimum 8 experiments)**

**Note:**

1. Students are expected to know (i) the planning of synthesis, effect of reaction parameters including stoichiometry, and **safety aspects including MSDS** (ii) the possible mechanism, expected spectral data (IR and NMR) of the starting material and final product.
2. Students are expected to purify the product by recrystallization, measure its mass or volume, check the purity by TLC, determine physical constant and calculate percentage yield.

**Course code: PSCHO4P2**

**Session-I: Combined spectral identification: Interpretation of spectral data of organic compounds (UV, IR, PMR, CMR and Mass spectra).**

A student will be given UV, IR, PMR, CMR, and Mass spectra of a compound from which preliminary information should be reported within first half an hour of the examination without referring to any book/reference material. The complete structure of the compound may then be elucidated by referring to any standard text-book/reference material etc

**(Minimum 8 spectral analysis).**

**Session-II: Project evaluation**

**References for Practicals**

1. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis- V. K. Ahluwalia and Renu Aggarwal, Universities Press India Ltd., 2000
2. Advanced Practical Organic Chemistry – N. K. Vishnoi, Third Addition, Vikas Publishing House PVT Ltd
3. Systematic Laboratory Experiments in Organic Synthesis- A. Sethi, New Age International Publications
4. Systematic Identification of Organic compounds, 6th edition, R. L. Shriner, R. C. Fuson and D.Y. Curtin Wiley, New York.
5. Vogel's Textbook of Quantitative Analysis, revised, J. Bassett, R. C. Denney, G. H. Jeffery and J. Mendham, ELBS
6. Experiments and Techniques in Organic Chemistry, D. Pasto, C. Johnson and M. Miller, Prentice Hall



7. Macro-scale and Micro-scale Organic Experiments, K. L. Williamson, D. C. Heath.
8. Systematic Qualitative Organic Analysis, H. Middleton, Edward Arnold.
9. Handbook of Organic Analysis- Qualitative and Quantitative, H. Clark, Edward Arnold.
10. Vogel's Textbook of Practical Organic Chemistry, Fifth edition, 2008, B.S. Furniss, A. J. Hannaford, P. W. G. Smith, A. R. Tatchell, Pearson Education.
11. Laboratory Manual of Organic Chemistry, Fifth edition, R K Bansal, New Age Publishers.
12. Organic structures from spectra, L. D. Field, S. Sternhell, John R. Kalman, Wiley, 4<sup>th</sup> ed., 2011.

1. The candidate is expected to submit a journal and project certified by the Head of the Department /institution at the time of the practical examination.
2. A candidate will not be allowed to appear for the practical examination unless he/she produces a certified journal or a certificate from the Head of the institution/department stating that the journal is lost and the candidate has performed the required number of experiments satisfactorily. The list of the experiments performed by the candidate should be attached with such certificate.
3. Use of non-programmable calculator is allowed both at the theory and the practical examination.

सत्र : ३

अभ्यासपत्रिका क्रमांक १ : १ – साहित्यप्रकाराचा अभ्यास

(Study of Form of Literature : Poetry)

विशिष्ट साहित्यप्रकार : कविता

उद्दिष्टे : कोणत्याही साहित्यप्रकाराला एक तात्त्विक अंग असते, तसेच त्याला एक ऐतिहासिक अंग असते. या दोन अंगांच्या देवघेवीमधून प्रत्येक साहित्यप्रकाराची जडणघडण होत असते. या दृष्टीने साहित्यप्रकाराच्या अभ्यासासाठी काही मार्गदर्शक तत्त्वे सांगता येतील.

(क) साहित्यप्रकाराची संकल्पना : सैद्धान्तिक विचार, संकेतव्यूह.

(ख) या सैद्धान्तिक विचाराच्या प्रकाशात नेमलेल्या साहित्यकृतींचा अभ्यास करणे.

या तीन प्रमुख मार्गदर्शक तत्त्वांनुसार साहित्यप्रकाराच्या अभ्यासक्रमाची योजना पुढीलप्रमाणे आहे :

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) साहित्यप्रकाराची संकल्पना : सैद्धान्तिक विचार

(साहित्यप्रकाराच्या वर्गीकरणामागील तत्त्वे)

प्रमुख साहित्यप्रकार-कविता, कथा, नाटक, कादंबरी परिचय.

कवितेची व्याख्या.

ब) कविता या साहित्यप्रकाराचा संकेतव्यूह.

पद्यबंध-शब्द, ओळी, कडवी, ध्रुवपद, समांतरता, वृत्तछंद.

कवितेचे नादरूप-यमक, प्रास, अनुप्रास इत्यादी. ताल, लय, वृत्त, छंद इ०

कवितेचे दृश्यरूप-(लिखित रूप) ओळी, कडवी इत्यादी.

आशयबंध-कवितेतील आशय, आशयसूत्र, अनुभव, अनुभवविश्व-भावना, भावविश्व, कवितेचे भाषिक

विशेष-अनेकार्थता-प्रतिमा, प्रतीक, रूपक, मिथ, आदिबंध, वक्रता, नियमोल्लंघन.

सर्व काव्यघटकांची कविता या साहित्यप्रकाराच्या गुणविशेषांनुसार संघटना कशी होते हे स्पष्ट करणे.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) कवितेची संकल्पना-अभिजाततावादी, रोमँटिक, प्रतीकवादी.

अन्य साहित्यप्रकारांशी कवितेचे साम्यभेदात्मक नाते.

ब) काव्यप्रकार-गीत, कथाकाव्य, खंडकाव्य, नाट्यकाव्य आणि भावकाव्य (अभंग, ओवी, लावणी, पोवाडा, सुनीत, गझल, दशपदी, विडंबन) काव्यप्रकारांची परंपरा.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

१) 'प्रेमाचे लव्हाळे', आणखी काही कविता, मौज प्रकाशन, १९९४.

२) 'त्रिधा राधा', सुहृद्गाथा, पु० शि० रेगे, (संपा०) गंगाधर पाटील.

३) 'वामांगी', चिरीमिरी, अरुण कोलटकर.

४) 'राहीबाई', या सत्तेत..., नामदेव ढसाळ (०५ कविता)

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी - प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ-ग्रंथसूची :

१. कुलकर्णी, वा० ल०; मराठी कविता-जुनी आणि नवी, पॉप्युलर प्रकाशन आणि मौज प्रकाशन गृह, मुंबई, १९८७..
२. गणोरकर, प्रभा (संपा०); संक्षिप्त मराठी वाङ्मयकोश, (१९२० पासून २००३ पर्यंतचा कालखंड), जी० आर० भटकळ फाउंडेशन, मुंबई, २००४.
३. भागवत, श्री० पु० व इतर (संपा०); साहित्य-अध्यापन आणि प्रकार, पॉप्युलर प्रकाशन गृह, मुंबई.
४. पाटणकर, वसंत; कविता : संकल्पना, निर्मिती आणि समीक्षा, मराठी विभाग, मुंबई विद्यापीठ व अनुभव प्रकाशन, मुंबई, १९९५.
५. पाटणकर, वसंत; शोध कवितेचा, मौज प्रकाशन गृह, मुंबई, २०११.
६. डहाके, वसंत आबाजी; कवितेविषयी, स्वरूप प्रकाशन, औरंगाबाद, १९९९.
७. बेडेकर, दि० के०; आधुनिक मराठी काव्य उद्गम आणि भवितव्य, नागपूर विद्यापीठ, नागपूर, १९६९.
८. रसाळ, सुधीर; काही मराठी कवी जाणवा आणि शैली, जनशक्ती वाचक चळवळ, औरंगाबाद, आवृत्ती ३री, २०११.
९. करोगल, सुषमा (संपा०); स्वातंत्र्योत्तर मराठी कविता, प्रतिमा प्रकाशन, पुणे, १९९९.

सत्र : ३

अभ्यासपत्रिका क्रमांक १ : २ – प्राचीन कालखंडाचा अभ्यास : यादवकाल  
(Study of Specific Period : Yadavkal)

उद्दिष्टे : या अभ्यासपत्रिकेमध्ये यादवकालाचा अभ्यास करावयाचा आहे. सदर अभ्यासपत्रिकेत नेमलेल्या साहित्याच्या आधारे विशिष्ट कालखंडाचा आणि कालखंडाच्या पार्श्वभूमीवर नेमलेल्या साहित्यकृतींचा असा दुहेरी स्तरावर अभ्यास अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२  
सामाजिक-सांस्कृतिक पार्श्वभूमी.

घटक २) व्याख्याने-२०, श्रेयांकन-०२  
सांप्रदायिक प्रेरणा.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२  
अ) दृष्टान्तपाठ : केसोबास.

ब) यादवकालीन संतांचे निवडक अभंग :

(सकलसंतगाथा, भाग १, संपा० डॉ० र० रा० गोसावी, सारथी प्रकाशन, पुणे, २०००)

निवृत्तीनाथ : निराकार वस्तु (६), गोपाळ सवंगडे (२२),  
ज्ञानेश्वर : आम्ही कापडी रे (७२८), कानोबा तुझी घोंगडी (९०३).  
मुक्ताबाई : देउळीचा देवो (२२), मुंगी उडाली आकाशी (४२).  
नामदेव : तू अवकाश (१५२९), कांचनीक भक्ति (१८३९),  
जनाबाई : स्त्रीजन्म म्हणवुनी (१७६), दळितां कांडिता (२०४).  
गोरा कुंभार : निर्गुणाचा संग (३), निर्गुणाचे भेटी (७),  
सावतामाळी : कांदा मुळा (३), आमुचि माळियाची (४),  
चोखामेळा : चंदनाच्या संगे (६७), ऊस डोंगा (१२५).  
सोयराबाई : हीन दीन (३५), किती हे मरती (४९).  
कर्ममेळा : आमुची केली (३), आपण वाढवावे (२३),

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण
२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. संत वाङ्मयाची सामाजिक फलश्रुती, गं० बा० सरदार.
२. यादवकालीन महाराष्ट्र, मु० गो० पानसे.
३. यादवकालीन मराठी भाषा, शं० गो० तुळपुळे.
४. पाच संतकवी, डॉ० शं० गो० तुळपुळे.
५. मराठी कविता : प्राचीन कालखंड, वा० रा० ढवळे.
६. ज्ञानेश्वरी (अध्याय १२), (संपा०) अरविंद मंगरूळकर, वि० मो० केळकर / (संपा०) ल० वि० कर्वे, गो० पु०

रिसबुड / (संपा०) श्री० ना० बनहट्टी / (संपा०) म० ना० अदवंत, भालचंद्र खांडेकर / (संपा०) शं० वा० दांडेकर  
/ (संपा०) द० सी० पंगु / (संपा०) स० रा० गाडगीळ / (संपा०) श्री० मा० कुलकर्णी.

७. वि० का० राजवाडेकृत 'ज्ञानेश्वरी'ची प्रस्तावना आणि 'ज्ञानेश्वरी'तील मराठी भाषेचे व्याकरण, साहित्य संस्कृती  
मंडळ.

८. महानुभाव गद्य, शं० गो० तुळपुळे.

९. महानुभाव साहित्यदर्शन, उषा मा० देशमुख.

१०. साहित्य, समाज आणि संस्कृती, दिगंबर पाध्ये.

सत्र : ३

अभ्यासपत्रिका क्रमांक ९ : ३ – सौंदर्यशास्त्र – १ (Aesthetics : 1)

उद्दिष्टे : सौंदर्याचे व कलेचे तत्त्वज्ञान म्हणजे सौंदर्यशास्त्र. यामध्ये सौंदर्याविषयी व कलेविषयी सिद्धान्तन केले जाते. कला व सौंदर्य यांचे स्वरूप काय, त्यांच्या आवश्यक अटी कोणत्या, त्यांचे काही नियम असतात का, विविध कलांमधील परस्परसंबंध कोणत्या प्रकारचे असतात आणि त्यातून वर्गीकरणाची व्यवस्था लावता येते का, यांसारख्या प्रश्नांचे भान विद्यार्थ्यांना आणून देणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) सौंदर्यशास्त्राचे स्वरूप व प्रयोजन.

आ) सौंदर्यनिकषाविषयीचा इमॅन्युएल कांटचा सिद्धांत.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) साहित्यकृतीच्या सौंदर्याची संकल्पना. रूपबंधाविषयीचे सिद्धांत, सेंद्रिय रूपबंध.

आ) भरतमुनीचा रससिद्धांत.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) कलानिर्मिती/सौंदर्यनिर्मितीमधील महत्त्वाचा घटक म्हणून प्रतिभेविषयीचे सिद्धांत.

आ) सौंदर्यमूल्य – स्वायत्त की परायत्त, सौंदर्येतर मूल्ये.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

१. पाटणकर, रा० भा०; सौंदर्यमीमांसा.

२. पाध्ये, प्रभाकर; सौंदर्यनुभव.

३. मर्ढेकर, बा० सी०; कला आणि मानव.

४. पाटणकर, रा० भा०; मुक्तिबोधांची कविता.

५. आचवल, माधव; रसास्वाद.

६. संपा०; रङ्गनायक.

७. लागू, श्रीराम; रूपवेध

८. नाईक, राजीव; नाटकातील चिन्ह.

९. पाटील, गंगाधर; समीक्षामीमांसा.

१०. पाटील, गंगाधर; समीक्षेची नवी रूपे.

११. पद्माकर, दादेगावकर; रसचर्चा.

१२. देशपांडे, ग० त्र्यं०; भारतीय साहित्यशास्त्र.

१३. कंगले, र० पं०; प्राचीन काव्यशास्त्र.

१४. देशपांडे, ग० त्र्यं०; साहित्यशास्त्रातील सौंदर्यविचार.

१५. कंगले, र० पं०; रसभावविचार.

१६. के० नारायण काळे; प्रतिमा, रूप आणि गंध.

१७. संत, दु० का०; ललितकला आणि वाङ्मय.

*Cinema : The Movement - Image* by Gilles Deleuze

( The Athlone Press, London, 1986 )

1. *Film Theory & Criticism* edited by Gerald Mast & Marshall Cohen ( OUP, Oxford, 1985)

2. *Realism & the Cinema* edited by Christopher Williams ( Routledge & Kegan Paul, London, 1980 )

3. *The Moving Image* by Kishore Valicha ( Orient Longman, India, 1988 )

सत्र : ३

अभ्यासपत्रिका क्रमांक ९ : ४ – स्त्रीवाद आणि साहित्य (Feminism and Literature)

उद्दिष्टे : जगातील बहुतेक संस्कृती या पुरुषप्रधान असून त्यांच्या समाजरचनेत पुरुषांच्या हितसंबंधांची जपणूक केलेली आहे. यातून पुरुषप्रधान व्यवस्था जन्माला येऊन स्त्रीचे शोषण होत असते. आपल्यावरील अन्यायाची, दुय्यमत्वाची जाणीव झालेली स्त्री कृतीतून व लेखणीतून त्याविषयावर व्यक्त होऊ लागली आणि यातून स्त्रियांच्या वेगळ्या साहित्याचा जन्म झाला. स्त्रीवाद, स्त्रीवादी साहित्य आणि स्त्रीवादी समीक्षा यांची उभारणी पाश्चात्य व मराठी साहित्यविश्वात कशी झाली याचा स्थूल परिचय करून देणे हा या अभ्यासपत्रिकेचा हेतू आहे. त्याचबरोबर 'स्त्रीवादी वाचन' हा स्त्रीवादी समीक्षेचा महत्वाचा प्रकार विद्यार्थ्यांना परिचित करून देऊन पुरुषलेखकांच्या साहित्याचेही स्त्रीवादी वाचन करता येते हे दर्शवणे येथे अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

- अ) स्त्रीवाद-प्रेरणा, संकल्पना व स्वरूप (स्त्रीवाद ही एकच संकल्पना नसून ती बहुजिनसी आहे याची मांडणी).
- ब) स्त्रीप्रधान, स्त्रीकेंद्री आणि स्त्रीवादी साहित्य – तात्त्विक चर्चा.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

- अ) मराठी साहित्यातील स्त्रीवादी जाणिवांचा आरंभ व परिवर्तन (कादंबरी व नाटक या साहित्यप्रकारांतील ठळक उदाहरणांच्या साहाय्याने स्त्रीवादी जाणिवांचा मागोवा घेणे).
- ब) स्त्रीवादी वाचन (एलन शॉअल्टरप्रणीत स्त्रीवादी समीक्षेचा प्रकार स्पष्ट करणे).

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

- अ) उत्खनन – गौरी देशपांडे.
- ब) ठष्ट – संजय पवार.

अंतर्गत परीक्षा-एकूण गुण ४०

- १. लेखी परीक्षा २० गुण
- २. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

- १. ऑमव्हेट, गेल; जोतिबा फुले आणि स्त्रीमुक्तीचा विचार.
- २. आठलेकर, मंगला; तिची कथा, राजहंस प्रकाशन, पुणे.
- ३. कर्वे, स्वाती; स्त्री विकासाच्या पाऊलखुणा, प्रतिमा प्रकाशन, पुणे.
- ४. कर्वे, स्वाती; स्त्री विकासाची नवी क्षितिजे, प्रतिमा प्रकाशन, पुणे.
- ५. खांडगे, मंदा (संपा०); स्त्री साहित्याचा मागोवा, खंड १ व २, साहित्यप्रेमी भगिनी मंडळ, पुणे, २००२.
- ६. गोखले, करुणा; बाईमाणूस, राजहंस प्रकाशन, पुणे.
- ७. गोखले, करुणा (अनु०); सेकंडसेक्स, मूळ लेखिका सिमॉन-द-बोव्हा.
- ८. जाधव, मनोहर; समीक्षेतील नव्या संकल्पना, स्वरूप प्रकाशन, औरंगाबाद.
- ९. जाधव, रा० ग०; आधुनिक मराठी कवयित्रींची कविता, प्रतिमा प्रकाशन, पुणे.
- १०. धोंगडे, अश्विनी; संदर्भ स्त्री पुरुष, दिलिपराज प्रकाशन, पुणे, २००३.
- ११. धोंगडे, अश्विनी; स्त्रीवादी समीक्षा-स्वरूप आणि उपयोजन, दिलिपराज प्रकाशन, पुणे, २००३.
- १२. नानिवडेकर, मेधा; महाराष्ट्रातील स्त्री चळवळीचा मागोवा, प्रतिमा प्रकाशन, पुणे.



१३. निरगुडकर, भारती; *समीक्षासंहिता*, शब्दालय प्रकाशन, श्रीरामपूर, २०१२.
१४. फडके, भालचंद्र; *मराठी लेखिका चिंता आणि चिंतन*, श्रीविद्या प्रकाशन, पुणे.
१५. भागवत, विद्युत; *स्त्री प्रश्नांची वाटचाल*, प्रतिमा प्रकाशन, पुणे, २००४.
१६. भागवत, विद्युत; *स्त्रीवादी सामाजिक विचार*, डायमंड पब्लिकेशन, पुणे, २००८.
१७. भोसले, नारायण; *महाराष्ट्रातील स्त्रीविषयक सुधारणावाद्यांचे सत्ताकारण*, द ताईची प्रकाशन, पुणे.
१८. भोसले, नारायण; *अब्राह्मणी स्त्रीवाद*, अथर्व प्रकाशन, जळगाव.
१९. महाजन, वंदना; *मराठी कादंबरीतील स्त्रीवाद*, स्नेहवर्धन प्रकाशन, पुणे, २०१०.
२०. महाजन, वंदना; *सांस्कृतिक प्रवाहांची स्त्रीवादी समीक्षा*, स्नेहवर्धन प्रकाशन, पुणे.
२१. रानडे, प्रतिभा, *स्त्रीप्रश्नांची चर्चा एकोणिसावे शतक*, पद्मगंधा प्रकाशन, पुणे.
२२. वरखेडे, मंगला, *स्त्रीवाद संकल्पना व उपयोजन*, का० स० वाणी प्रगत अध्ययन संस्था, धुळे.
२३. साळुंखे, आ० ह०, *हिंदु संस्कृती आणि स्त्री*, लोकवाङ्मय गृह, मुंबई.

सत्र : ३

अभ्यासपत्रिका क्रमांक ९ : ५ – दलित साहित्य (Dalit Sahitya)

उद्दिष्टे : मराठी साहित्य-संस्कृतिक्षेत्रात १९६० नंतरच्या दशकात दलित साहित्याची एक वाङ्मयीन व सामाजिक-सांस्कृतिक स्वरूपाची चळवळ सुरू झाली. या चळवळीतून निर्माण झालेल्या दलित साहित्याने मराठी साहित्यात मोलाची भर घातलेली आहे. अशा महत्वाच्या साहित्यप्रवाहाचा अभ्यास विद्यापीठीय स्तरावर होणे आवश्यक ठरते. या दृष्टीने दलित साहित्याची वाङ्मयीन व सामाजिक/सांस्कृतिक पार्श्वभूमी, दलित साहित्याची संकल्पना व स्वरूप, त्यातील विद्रोहाची जाणीव व तिचा साहित्यिक आविष्कार, या साहित्यप्रवाहातील विविध साहित्यप्रकार, तसेच या साहित्याचे व साहित्यिक चळवळीचे वाङ्मयीन व सामाजिक कार्य इत्यादी गोष्टींचा सुव्यवस्थित अभ्यास करणे, हे या अभ्यासविषयपत्रिकेचे उद्दिष्ट आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

दलित साहित्याचे स्वरूप व वैशिष्ट्य

अ) दलित, दलित जाणीव, दलित साहित्य संकल्पनेविषयीच्या विविध भूमिका.

ब) दलित साहित्याची प्रेरणा, व्याख्या.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

दलित साहित्याच्या चळवळीची पार्श्वभूमी

अ) सामाजिक, राजकीय, सांस्कृतिक, धार्मिक परिस्थिती : वास्तव.

ब) आंबेडकरपूर्व, आंबेडकरी व आंबेडकरोत्तर चळवळी.

क) दलित साहित्य चळवळीचा सामाजिक, सांस्कृतिक, राजकीय चळवळींशी असलेला अनुबंध.

ड) दलित साहित्याची पूर्वपरंपरा.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

१. सुरुंग, त्र्यंबक सपकाळे.

२. सूर्यस्तूप, आत्माराम गोडबोले.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. आंबेडकर, डॉ० बाबासाहेब; *अस्पृश्य मूळचे कोण?*, (The Untouchables), (अनु०) कांबळे, बी० सी०;

२. आंबेडकर, डॉ० बाबासाहेब; *जातिभेद निर्मूलन*, (अनु०) गांजरे, मा० फ०; प्रज्ञा प्रकाशन मंडळ, नागपूर, १९७०.

३. आंबेडकर, डॉ० बाबासाहेब; *शूद्र मूळचे कोण होते?*, (अनु०) खैरमोडे, चां० भ०; ठक्कर आणि कं० लि०, मुंबई, १९४६.

४. कऱ्हाडे, सदा; *दलित साहित्य चिकित्सा*, स्वरूप प्रकाशन, औरंगाबाद, २००१.

५. कुलकर्णी, गो० म० (संपा०); *दलित साहित्य : प्रवाह व प्रतिक्रिया*, प्रतिमा प्रकाशन, पुणे, १९८६.

६. खरात, शंकरराव; *दलित वाङ्मय प्रेरणा आणि प्रवृत्ती*, इनामदार बंधू प्रकाशन, पुणे, १९७८.

७. जाधव, रा० ग०; *निळी पहाट*, प्राज्ञपाठशाळा मंडळ, वाई, १९७८.

८. डांगळे, अर्जुन (संपा०); *दलित साहित्य : एक चिंतन*, महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळ, मुंबई, १९७८.
९. निंबाळकर, वामन (संपा०); *सामाजिक क्रांतीची दिशा*, (प्राचार्य म० भि० चिटणीस समग्र वाङ्मय), प्रबोधन प्रकाशन, नागपूर, २००७.
१०. पाटील, म० सु०; *दलित कविता*, लोकवाङ्मय गृह, मुंबई, १९८१.
११. पानतावणे, गंगाधर; *दलित साहित्य : चर्चा आणि चिंतन*, साकेत प्रकाशन, औरंगाबाद, १९९३.
१२. फडके, भालचंद्र; *दलित साहित्य : वेदना आणि विद्रोह*, श्रीविद्या प्रकाशन, पुणे, १९७७ (प्र० आ०), १९८९ (दु० आ०).
१३. बागूल, बाबूराव; *दलित साहित्य : आजचे क्रांतिविज्ञान*, बुद्धिस्त पब्लि० हाऊस, नागपूर, १९८१.
१४. भगत, दत्ता; *निळी वाटचाल*, प्रतिमा प्रकाशन, पुणे, २००१.
१५. मनोहर, यशवंत; *दलित साहित्य : सिद्धांत आणि स्वरूप*, प्रबोधन प्रकाशन, नागपूर, १९७८.
१६. माटे, श्री० म०; *अस्मृष्टांचा प्रश्न*, दाते, श्री० र०, पुणे, १९३३.
१७. मेश्राम, केशव (संपा०); *विद्रोही कविता*, कॉन्टिनेन्टल प्रकाशन, पुणे, १९७८ (प्र० आ०), १९९४ (तृ० आ०).
१८. मेश्राम, केशव व इतर (संपा०); *दलित साहित्याची स्थितिगती*, मराठी विभाग, मुंबई विद्यापीठ आणि अनुभव पब्लिकेशन्स, मुंबई, १९९७.
१९. मेश्राम, योगेन्द्र; *दलित साहित्य – उद्गम आणि विकास*, मंगेश प्रकाशन, नागपूर, १९९८.
२०. रेगे, शां० शं०; *भीमपर्व*, सुगावा प्रकाशन, पुणे, १९९१.
२१. लिंबाळे, शरणकुमार (संपा०); *शतकातील दलितविचार*, दिलीपराज प्रकाशन, पुणे, २००१.
२२. लिंबाळे, शरणकुमार (संपा०); *प्रज्ञासूर्य*, प्रचार प्रकाशन, कोल्हापूर, १९९१.
२३. वानखेडे, म० ना०; *दलितांचे विद्रोही वाङ्मय*, प्रबोधन प्रकाशन, नागपूर, १९८१.
२४. डोळस, अविनाश; *आंबेडकरी विचार आणि साहित्य*, साकेत प्रकाशन,
२५. नीळकंठ, शिरे; *डॉ० बाबासाहेब आंबेडकर आणि दलित वैचारिक वाङ्मय*, सुविद्या प्रकाशन, पुणे, २००५.
२६. Ambedkar, Babasaheb; *Annihilation of Caste*, New Book Company, Bombay, 1936.

सत्र : ३

**अभ्यासपत्रिका क्रमांक १ : ६ – बालसाहित्य (Balsahitya)**

उद्दिष्टे : 'बालसाहित्य' हे ललित साहित्याच्या कक्षेत येते. मात्र प्रौढ साहित्यापेक्षा त्याचे स्वरूप कसे वेगळे ठरते, बालसाहित्यातील अनुभवविश्व आणि भाषा यांच्या संदर्भात त्यांची स्वरूपवैशिष्ट्ये कोणती यांचा अभ्यास करणे प्रस्तुत अभ्यासपत्रिकेत अपेक्षित आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) बालसाहित्याचे स्वरूप, वैशिष्ट्ये, प्रेरणा

आ) मराठी बालसाहित्याचा इतिहास.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) बालमानसशास्त्र व बालसाहित्य

आ) बालसाहित्याचे प्रकार – बालकविता, कथा, कादंबरी, एकांकिका, नाटक

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) 'नाच रे मोरा', ग० दि० माडगूळकर

आ) 'हरवलेल्या खेळण्यांचे राज्य', सई परांजपे

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. दांडेकर, मालतीबाई; *बालसाहित्याची रूपरेखा*.
२. भागवत, लीलावती; *मराठी बालसाहित्य प्रवाह आणि स्वरूप*.
३. शहा, सुलभा; *मराठी बालवाङ्मय : स्वरूप आणि अपेक्षा*.
४. कुसुमाग्रज; 'स्वागत' (प्रस्तावना) *गवतफुला-इंदिरा संत*.
५. वसेकर, विश्वास; *बालसाहित्याचे अंतरंग*.
६. जाधव, रा० ग० (संपा०); *मराठी वाङ्मयाचा इतिहास*, खंड ७, भाग २.
७. दीक्षित, लीला; *मराठी बालसाहित्य : विचार आणि दर्शन*.
८. बोरसे-सुर्वे, विद्या; *बालसाहित्य – आकलन आणि समीक्षा*.
९. बागूल, देविदास; *बालवाङ्मय*.
१०. मासिक ऋग्वेद, बालकुमार साहित्य संमेलन, देवडेंडे विशेषांक, मार्च २०१६.

सत्र : ३

अभ्यासपत्रिका क्रमांक १० : १ – साहित्यप्रकाराचा अभ्यास

(Study of Form of Literature : Novel)

विशिष्ट साहित्यप्रकार : कादंबरी

उद्दिष्ट : कोणत्याही साहित्यप्रकाराला एक तात्त्विक अंग असते, तसेच त्याला एक ऐतिहासिक अंग असते. या दोन अंगांच्या देवघेवीमधून प्रत्येक साहित्यप्रकाराची जडणघडण होत असते. या दृष्टीने साहित्यप्रकाराच्या अभ्यासासाठी काही मार्गदर्शक तत्त्वे सांगता येतील.

(क) साहित्यप्रकाराची संकल्पना : सैद्धान्तिक विचार, संकेतव्यूह.

(ख) या सैद्धान्तिक विचाराच्या प्रकाशात नेमलेल्या साहित्यकृतींचा अभ्यास करणे.

घटक १ :

अ) 'कादंबरी' या साहित्यप्रकाराची संकल्पना : सैद्धान्तिक विचार

साहित्य आणि साहित्यप्रकार.

साहित्यप्रकाराची संकल्पना, साहित्यकृतींची वर्गवारी करणारी वर्गीकरण-तत्त्वे, काव्य, कथात्म साहित्य व नाटक आदी प्रमुख साहित्यप्रकार इत्यादी गोष्टींचा परिचय करून देणे.

ब) कादंबरी आणि संबंधित इतर साहित्यप्रकार यांच्यामधील साम्यभेदाचे नाते. कथा-कादंबरी या साहित्यप्रकारांतील घटकांपेक्षा चरित्र-आत्मचरित्र, प्रवासवर्णन, व्यक्तिचित्रे, ललितनिबंध, रिपोर्टाज् इत्यादी साहित्यप्रकारांतील घटकांच्या साम्यभेदांची चर्चा.

घटक २ :

अ) कथनपर साहित्याचे घटक – आशयसूत्र, निवेदक-पात्र, अनुभवविश्व, निवेदन, निवेदनाचे ४ प्रकार (कथन, वर्णन, संवाद, भाष्य) वातावरण, भाषा इत्यादी.

ब) कादंबरीचे प्रकार-उपप्रकार

ऐतिहासिक, पौराणिक, राजकीय, सामाजिक, पत्रात्मक, चरित्रात्मक, आत्मचरित्रपर, काव्यात्म इत्यादी.

घटक ३ :

नेमलेल्या कादंबरीचा अभ्यास

१) 'वज्राघात', ह० ना० आपटे,

२) 'रीटा वेलिंगकर', शांता गोखले.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. 'मराठी कादंबरी', कुसुमावती देशपांडे.

२. 'मराठी कादंबरी तंत्र आणि विकास', बापट, गोडबोले.

३. 'धार आणि काठ', नरहर कुरुंदकर.

४. 'कादंबरी', ल० ग० जोग.

- ॡ. 'सलललतुतु : अलुलुतुतु आणल तुरकलर', संतुतु शुरीतु तुतु तुलगतु.
- ॢ. *The Rhetoric of Fiction*, Booth, W. C.
- ॣ. *Aspects of the Novel*, Forster, E. M.
- ।. *The Theory of the Novel*, ed. Halparin John.
- ॥. *The Craft of Fiction*, Lubbock Percy.
०. *The Novel and the Reader*, Katherine Lerer.

सत्र : ३

अभ्यासपत्रिका क्रमांक १० : २ – प्राचीन कालखंडाचा अभ्यास : बहामनीकाल  
(Study of Specific Period : Bahamanikal)

उद्दिष्ट : या अभ्यासपत्रिकेमध्ये बहामनीकालाचा अभ्यास करावयाचा आहे. हा अभ्यास समकालीन सामाजिक, राजकीय, धार्मिक, सांस्कृतिक पार्श्वभूमी व वाङ्मयीन प्रेरणा यांच्या संदर्भात करणे अपेक्षित आहे. या अभ्यासात दत्त, नाथ, वारकरी, महानुभाव संप्रदायांतर्गत लेखन करणाऱ्या कवींच्या काव्याचा स्थूल स्वरूपात परिचय करून घेणे अपेक्षित आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

सामाजिक, राजकीय, धार्मिक व सांस्कृतिक पार्श्वभूमी.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

वाङ्मयीन प्रेरणा.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

संत एकनाथ – रुक्मिणीस्वयंवर.

संत मुक्तेश्वर – स्फुट काव्य 'मूर्खाची लक्षणे'.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. आचार्य, मा० ना०; ज्ञानमयूरांची कविता, पुष्पा प्रकाशन, पुणे,

२. केतकर, श्री० व्यं०; महाराष्ट्रियांचे काव्यपरीक्षण, व्हीनस प्रकाशन, पुणे, १९६४ (दु० आ०).

४. जोग, रा० श्री०; मराठी वाङ्मयाभिरुचीचे विहंगमावलोकन, पुणे विद्यापीठ, पुणे, १९५९.

५. जोग, रा० श्री०; मराठी वाङ्मयाचा इतिहास, खंड ३, (१६८१ ते १८००) महाराष्ट्र साहित्य परिषद, पुणे, १९७३.

६. तुळपुळे, शं० गो०; पाच संतकवी, सुविचार प्रकाशन मंडळ, पुणे, १९८४ (तृ० आ०).

७. तुळपुळे, शं० गो०; मराठी वाङ्मयाचा इतिहास, खंड १, (आरंभ ते १३५०) महाराष्ट्र साहित्य परिषद, पुणे, १९८४.

८. देशमुख, उषा मा०; कालखंडाचा अभ्यास, मुंबई विद्यापीठ, मराठी विभाग आणि स्नेहवर्धन प्रकाशन, पुणे,

९. नसिराबादकर, ल० रा०; प्राचीन मराठी वाङ्मयाचा इतिहास, फडके प्रकाशन, कोल्हापूर, २००५.

१०. पाध्ये, दिगंबर; साहित्य, समाज आणि संस्कृती, मराठी विभाग, मुंबई विद्यापीठ आणि लोकवाङ्मय गृह, मुंबई, १९९८.

११. फाटक, न० र०; एकनाथ : यक्ती आणि वाङ्मय, मौज प्रकाशन, मुंबई, १९६३.

१२. बडवे, नानासाहेब; एकनाथांची भारूडे, भाग १, श्रीएकनाथ संशोधन मंदिर, औरंगाबाद, १९६८.

१३. बडवे, नानासाहेब; एकनाथांची भारूडे, भाग २, श्रीएकनाथ संशोधन मंदिर, औरंगाबाद, १९७८.

१४. भावे, वि० ल०; महाराष्ट्र सारस्वत, खंड १, पॉप्युलर प्रकाशन, मुंबई, १९८३ (स०आ०).

१५. भावे, वि० ल०; महाराष्ट्र सारस्वत, खंड २, पॉप्युलर प्रकाशन, मुंबई, १९८३ (स०आ०).

१६. भिंगारे, ल० म०; मुक्तमयूरांची महाभारते, मराठवाडा साहित्य परिषद, हैद्राबाद, १९५६.

१७. मालशे, स० गं०; मराठी वाङ्मयाचा इतिहास, खंड २, भाग १, (१३५० ते १६८०) महाराष्ट्र साहित्य परिषद, पुणे, १९८२.
१८. मालशे, स० गं०; मराठी वाङ्मयाचा इतिहास, खंड २, भाग २, (१३५० ते १६८०) महाराष्ट्र साहित्य परिषद, पुणे, १९८२.
१९. शेणोलीकर, ह० श्री०; प्राचीन मराठी वाङ्मयाचा इतिहास, मोघे प्रकाशन, कोल्हापूर, १९७१.
२०. सरदार, गं० बा०; संत साहित्याची सामाजिक फलश्रुती, महाराष्ट्र साहित्य परिषद, पुणे, १९७० (ति० आ०).
२०. साखरे, नानामहाराज, सकलसंतगाथा, खंड १ ते ३, वरदा प्रकाशन, पुणे, १९६७.



सत्र : ३

अभ्यासपत्रिका क्रमांक १० : ३ – सौंदर्यशास्त्र – २ (Aesthetics : 2)

उद्दिष्ट : सौंदर्याचे व कलेचे तत्त्वज्ञान म्हणजे सौंदर्यशास्त्र. यामध्ये सौंदर्याविषयी व कलेविषयी सिद्धान्तन केले जाते. कला व सौंदर्य यांचे स्वरूप काय, त्यांच्या आवश्यक अटी कोणत्या, त्यांचे काही नियम असतात का, विविध कलांमधील परस्परसंबंध कोणत्या प्रकारचे असतात आणि त्यातून वर्गीकरणाची व्यवस्था लावता येते का, यांसारख्या प्रश्नांचे भान विद्यार्थ्यांना आणून देणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) कांटचे सौंदर्यवाचक विधान.

आ) रससिद्धांतावरील महत्त्वाची व्याख्याने – भट्टलोल्लूट, श्रीशंकुक, भट्टतौत, अभिनवगुप्त.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) साहित्यातील सौंदर्यकल्पना (कालानुसारी) नाद, छंद, ताल, कथनाचा काल.

आ) नाटक व चित्रपट – संवाद व नाद, सादरीकरणातील कथनाचा काल, चित्रपटाचा काल, दृश्यात्मकता.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) चित्रपटातील कालाच्या प्रतिमा (फ्रेम, शॉट, कटिंग, मोबिलिटी)

आ) मोंताज.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

१. पाटणकर, रा० भा०; सौंदर्यमीमांसा.

२. पाध्ये, प्रभाकर; सौंदर्यानुभव.

३. मर्ढेकर, बा० सी०; कला आणि मानव.

४. पाटणकर, रा० भा०; मुक्तिबोधांची कविता.

५. आचवल, माधव; रसास्वाद.

६. संपा०; रङ्गनायक.

७. लागू, श्रीराम; रूपवेध

८. नाईक, राजीव; नाटकातील चिन्ह.

९. पाटील, गंगाधर; समीक्षामीमांसा.

१०. पाटील, गंगाधर; समीक्षेची नवी रूपे.

११. पद्माकर, दादेगावकर; रसचर्चा.

१२. देशपांडे, ग० त्र्यं०; भारतीय साहित्यशास्त्र.

१३. कंगले, र० पं०; प्राचीन काव्यशास्त्र.

१४. देशपांडे, ग० त्र्यं०; साहित्यशास्त्रातील सौंदर्यविचार.

१५. कंगले, र० पं०; रसभावविचार.

१६. के० नारायण काळे; प्रतिमा, रूप आणि गंध.

१७. संत, दु० का०; ललितकला आणि वाङ्मय.

*Cinema : The Movement - Image* by Gilles Deleuze

( The Athlone Press, London, 1986 )

1. *Film Theory & Criticism* edited by Gerald Mast & Marshall Cohen ( OUP, Oxford, 1985)

2. *Realism & the Cinema* edited by Christopher Williams ( Routledge & Kegan Paul, London, 1980 )

3. *The Moving Image* by Kishore Valicha ( Orient Longman, India, 1988 )

सत्र : ३

अभ्यासपत्रिका क्रमांक १० : ४ – ग्रामीण मराठी साहित्य (Gramin Marathi Sahitya)

उद्दिष्ट : ग्रामीण साहित्य हा आधुनिक मराठी साहित्यातील एक महत्वाचा प्रवाह आहे. या प्रवाहाला ग्रामीण चळवळींची पार्श्वभूमी आहे. बदलत्या भारतीय समाजजीवनाला सातत्याने समकक्ष राहणाऱ्या मराठी ग्रामीण साहित्याचा अभ्यास करताना आपल्याला विविध टप्पे दिसतात. या टप्प्यांचा अभ्यास करणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

१. ग्रामीण साहित्याची संकल्पना आणि स्वरूप.
२. ग्रामीण साहित्य-निर्मितीच्या प्रेरणा.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

१. स्वातंत्र्यपूर्व काळातील ग्रामीण साहित्याचे स्वरूप.
२. स्वातंत्र्योत्तर काळातील ग्रामीण साहित्याचे बदलते स्वरूप.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

१. निवडक शंकर पाटील, संपा० नागनाथ कोत्तापल्ले.
२. बारोमास, सदानंद देशमुख.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण
२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. यादव, आनंद; ग्रामीण साहित्य स्वरूप आणि वास्तवता.
२. यादव, आनंद; मराठी साहित्य समाज आणि संस्कृती.
३. भोळे, भा० ल०; महात्मा फुले विचार आणि वारसा.
४. भोसले, द० ता०; ग्रामीण साहित्य एक चिंतन.
५. वाघमारे, जनार्दन; साहित्यचिंतन.
६. कोत्तापल्ले, नागनाथ; ग्रामीण साहित्य स्वरूप आणि शोध.
७. मुलाटे, वासुदेव; ग्रामीण कथा स्वरूप आणि विकास.
८. पवार, गो० मा० व हातकणंगलेकर, म० द०; मराठी साहित्य प्रेरणा व स्वरूप.

सत्र : ३

अभ्यासपत्रिका क्रमांक १० : ५ – विशिष्ट लेखकाभ्यास १ – गो० वि० करंदीकर

(Study of Special Author : G. V. Karandikar)

उद्दिष्ट : कोणताही लेखक हा त्याच्या काळाच्या व ऐतिहासिकतेच्या पार्श्वभूमीवर लिहित असतो. तो अनेकवेळा विविध साहित्यप्रकार हाताळत असतो व त्यामध्ये आपले भरीव योगदानही देत असतो. त्याच्या लेखनाचा प्रभाव नंतरच्या लेखकांवरही पडत असतात. अशा लेखकाची पार्श्वभूमी, त्याची जडणघडण त्याने हाताळलेल्या वाङ्मयप्रकारांची विविधता त्याची जीवनदृष्टी, कलादृष्टी व प्रतिभाधर्म याचे स्वरूप लक्षात घेणे तसेच त्यांचे ऐतिहासिक स्थान यासंबंधीचे भान विद्यार्थ्यांना आणून देणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

लेखकाभ्यास : तात्त्विक मांडणी

अ) लेखकाभ्यासाची संकल्पना.

आ) लेखकाभ्यासाच्या विविध पद्धती.

लेखकाचा कालखंड, पूर्वसूरी, प्रेरणा (सामाजिक, सांस्कृतिक, साहित्यिक) युगधर्म.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

संहिता, संपा० मंगेश पाडगांवकर.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

‘ऑरिस्टॉटलचे काव्यशास्त्र’, ‘राजा लिअर’, ‘अनुभवामृताचे अर्वाचीनीकरण’ या तीनही पुस्तकांच्या प्रस्तावना.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

१. निरगुडकर, भारती; *समीक्षासंहिता*, शब्दालय प्रकाशन, श्रीरामपूर, २०१२.

२. राजाध्यक्ष, विजया; *बहुपेडी विंदा-खंड १ व २*, मौज प्रकाशन, मुंबई.

सत्र : ३

अभ्यासपत्रिका क्रमांक १० : ६ – वैचारिक गद्य – १ (Vaicharik Gadhy : 1)

उद्दिष्ट : वैचारिक गद्यापासूनच आधुनिक मराठी साहित्याचा प्रारंभ झाला. कालांतराने विकसित झालेल्या कथा, कविता, कादंबरी, नाटक, ललित निबंध, प्रवासवर्णने इत्यादी साहित्यप्रकारांपेक्षा वैचारिक गद्य या प्रकाराचे स्वरूप कसे वेगळे आहे. मराठी गद्याची समृद्ध परंपरा समजून घेणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) वैचारिक गद्याचे ललित साहित्यापासूनचे वेगळेपण : आशय, अभिव्यक्तीच्या अंगाने.

आ) स्वातंत्र्यपूर्व काळातील वैचारिक गद्यामागील प्रेरणा : राजकीय, सामाजिक प्रेरणा, प्रबोधन चळवळी इत्यादी.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) १८७४-१९२० या कालखंडातील वैचारिक गद्याची परंपरा.

आ) निवडक आगरकर, (संपा०) ग० प्र० प्रधान.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) १९२०-१९४७ या कालखंडातील वैचारिक गद्याची परंपरा.

आ) जातिसंस्थेचे उच्चाटन, डॉ० बाबासाहेब आंबेडकर.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. फडके, य० दि०; विसाव्या शतकातील महाराष्ट्र.

२. मालशे, स० गं०; गतशतक शोधताना.

३. वाळिंबे, श० रा०; महाराष्ट्रातील सामाजिक पुनर्घटना.

४. जोग, रा० श्री०, मराठी वाङ्मयाचा इतिहास, खंड ४.

५. वैद्य, सरोजिनी; संक्रमण.

६. क्षीरसागर, श्री० के०; समाजविकास.

७. भोळे, भा० ल०; साहित्यप्रत्येय.

८. बेडकिहाळ, किशोर व भोळे, भा० ल० (संपा०); बदलता महाराष्ट्र.

९. कोतापल्ले, नागनाथ; ज्योतीपर्व.

१०. कुलकर्णी, गो० म०; आधुनिक मराठी साहित्याची सांस्कृतिक पार्श्वभूमी.

११. सरदार, गं० बा०; प्रबोधनाच्या पाऊलखुणा.

सत्र : ३

अभ्यासपत्रिका क्रमांक ११ : १ – साहित्यप्रकाराचा अभ्यास

(Study of Form of Literature : Drama)

विशिष्ट साहित्यप्रकार : नाटक

उद्दिष्ट : कोणत्याही साहित्यप्रकाराला एक तात्त्विक अंग असते, तसेच त्याला एक ऐतिहासिक अंग असते. या दोन अंगांच्या देवघेवीमधून प्रत्येक साहित्यप्रकाराची जडणघडण होत असते. या दृष्टीने साहित्यप्रकाराच्या अभ्यासासाठी काही मार्गदर्शक तत्त्वे सांगता येतील.

(क) साहित्यप्रकाराची संकल्पना : सैद्धान्तिक विचार, संकेतव्यूह.

(ख) या सैद्धान्तिक विचाराच्या प्रकाशात नेमलेल्या साहित्यकृतींचा अभ्यास करणे.

घटक १ : व्याख्याने-२०, श्रेयांकन-०२

अ) 'नाटक' या साहित्यप्रकाराची संकल्पना : सैद्धान्तिक विचार

साहित्य आणि साहित्यप्रकार.

साहित्यप्रकाराची संकल्पना, साहित्यकृतींची वर्गवारी करणारी वर्गीकरण-तत्त्वे, काव्य, कथात्म साहित्य व नाटक आदी प्रमुख साहित्यप्रकार इत्यादी गोष्टींचा परिचय करून देणे.

ब) नाटक हा एक दृश्य, श्राव्य स्वरूपाचा संमिश्र व प्रयोगनिष्ठ कलाप्रकार आहे, या गोष्टीचे भान ठेवून नाटकाची व्याख्या करणे, नाटकाचे व्यवच्छेदक लक्षण, त्याची उपलक्षणे, नाटकाचा संकेतव्यूह यासंबंधी विवेचन करणे या संदर्भात भरताची नाटकाची अभिनयाधिष्ठित व्याख्या, ऑरिस्टॉटलची नाट्यसंकल्पना आदींचा वापर करणे.

घटक २ : व्याख्याने-२०, श्रेयांकन-०२

अ) नाटकाचे घटक – नाट्यबीज, नाट्यप्रसंग, कथानक, पात्र, संवाद, भाषा यांचे स्वरूप व कार्य यांचे विवेचन. या सर्व नाट्यांगांतून संघटित होणाऱ्या नाटकांचे एकात्म रूप लक्षात घेणे.

ब) नाटकाचे प्रकार – नाटक, एकांकिका, संगीत, गद्य नाटक, शोकात्मिका, सुखात्मिका इत्यादी.

घटक ३ : व्याख्याने-२०, श्रेयांकन-०२

नेमलेल्या नाटकांचा अभ्यास

१. 'एकच प्याला', रा० ग० गडकरी.

२. घाशीराम कोतवाल, विजय तेंडुलकर, पॉप्युलर प्रकाशन, मुंबई, २००५.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. कंगले, र० पं०; रस-भाव-विचार, महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळ, मुंबई, १९७३.

२. करंदीकर, गो० वि०; ऑरिस्टॉटलचे काव्यशास्त्र, मौज प्रकाशन, मुंबई, १९५७.

३. कानेटकर, वसंत; नाटक एक चिंतन, नीळकंठ प्रकाशन, पुणे, १९७४.

४. काळे, के० नारायण; नाट्यविमर्श, पॉप्युलर बुक डेपो, मुंबई, १९६१.

५. काळे, के० नारायण व इतर (संपा०); मराठी रंगभूमी : मराठी नाटक घटना आणि परंपरा, मुंबई मराठी साहित्यसंघ,

मुंबई, १९७१.

६. केतकर, गोदावरी; *भरतमुनीचे नाट्यशास्त्र*, पॉप्युलर बुक डेपो, मुंबई, १९६३.
७. जोग, रा० श्री०; *अभिनव काव्यप्रकाश*, व्हीनस प्रकाशन, पुणे, १९९७ (द० आ०).
८. देशपांडे, ग० त्र्यं०; *भारतीय साहित्यशास्त्र*, पॉप्युलर प्रकाशन, मुंबई, १९८० (तृ० आ०).
९. नाईक, राजीव; *नाटकातील चिन्हं*, संदर्भ प्रकाशन, ठाणे, १९९४.
१०. नाईक, राजीव व इतर (संपा०); *रङ्गनायक*, आविष्कार प्रकाशन, मुंबई, १९८८.
११. पाटणकर, रा० भा०; *कांटची सौंदर्यमीमांसा*, मौज प्रकाशन, मुंबई, १९७७.
१२. पाटील, गंगाधर; *समीक्षेची नवी रूपे*, मॅजेस्टिक बुक स्टॉल, मुंबई, १९८१.
१३. ब्रह्मे, मो० द० (संपा०); *मराठी नाट्यतंत्र : नाटक-स्वरूप आणि तंत्रविचार*, सुविचार प्रकाशन मंडळ, पुणे, १९६४.
१४. राजापुरे-तापस, पुष्पलता; *खानोलकरांची नाट्यसृष्टी*, मराठी विभाग मुंबई विद्यापीठ आणि प्रतिमा प्रकाशन, पुणे, २००३.
१५. वाळिंबे, रा० शं० (संपा०); *मराठी नाट्यसमीक्षा*, पुणे विद्यापीठ, पुणे, १९६८.
१६. Bentley, Eric; *Life of the Drama*, Methuen, New York, 1964.
१७. Esslin, Martin; *An Anatomy of Drama*, George & Harrap & co., London, 1962.
१८. Esslin, Martin; *Field of Drama*, Methuen, London, 1988.
१९. Fergusson, Francis; *The Idea of a Theatre*,
२०. Langer, Susanne; *Feeling and Form*, Routledge & Kegan Paul, London, 1953.
२१. Nicoll, Allardyce ; *Theatre and the Dramatic Theory*,
२२. Potts, L. J.; *Comedy*, Hutchinson Univ. Lib., London, 1963.
२३. Styron, J. L.; *The Elements of Drama, Drama, Stage & Audience*, Cambridge University Press, London, 1975.

नियतकालिकांतील संदर्भ :

१. केळकर, अशोक; 'नाटक एक होणे', *अनुष्टुभ*, मे-जून १९८७.
२. दावतर, वसंत; 'नाटक म्हणजे काय?', *अनुष्टुभ*, मे-जून १९८७.

सत्र : ३

**अभ्यासपत्रिका क्रमांक ११ : २ – लोकसाहित्य (Folk Literature)**

उद्दिष्ट : भाषा, साहित्य आणि संस्कृती यांच्या घडणीत लोकसाहित्याचा फार मोठा सहभाग असतो. ललित साहित्य आणि लोकसाहित्य यांच्या निर्मितीप्रेरणा, संकल्पना, संकेतव्यवस्था आणि आविष्काररूप यांमध्ये अर्थातच भेद आहेत. असे असले तरी ललित साहित्यात लोकसाहित्याचे काही गुणविशेष, संकेत आढळून येतात, तसेच लोकसाहित्यातही ललित साहित्याचे काही गुणविशेष, लक्षणे व संकेत दिसून येतात. या दोहोंचे घनिष्ट संबंध असून त्यांच्यामध्ये सतत देवघेव होत असते.

या पार्श्वभूमीवर भाषा-साहित्याच्या विद्यार्थ्यांनी विद्यापीठीय स्तरावर लोकसाहित्याचा अभ्यास करणे प्रस्तुत ठरते. या दृष्टीने (१) लोकसाहित्याची संकल्पना, स्वरूप व निर्मितीप्रेरणा, (२) लोकसाहित्याची संकेतव्यवस्था, (३) लोकसाहित्याची व्याप्ती व विविध प्रकार, (४) लोकसाहित्य आणि ललित साहित्य यांचे परस्परसंबंध आदी गोष्टींचे परिचयपर ज्ञान विद्यार्थ्यांना करून देणे, तसेच लोकसाहित्याचे वाचन / आस्वाद व अभ्यास करण्याची त्यांना यथोचित साहित्यदृष्टी देणे हे प्रस्तुत अभ्यासविषयपत्रिकेचे उद्दिष्ट आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

लोकसाहित्य : स्वरूपविचार

- १) 'लोक' आणि 'लोकमानस'
- २) 'लोकधर्म' आणि 'लोकदैवत'
- ३) 'लोकतत्त्व' आणि 'लोकसंस्कृती'
- ४) 'लोकवाङ्मय' आणि 'लोकसंस्कृती'

या संकल्पनांचे स्पष्टीकरण आणि स्वरूपदिग्दर्शन, लोकसाहित्याच्या विविध व्याख्या व लक्षणे, लोकसाहित्याची संकेतव्यवस्था, लोकसाहित्यामागील निर्मितीप्रेरणा.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

लोकसाहित्याच्या अभ्यासपद्धती

- १) समाजजीवनाच्या संदर्भात लोकसाहित्य कोणते कार्य करते हे पाहण्याच्या उद्देशातून कार्यान्वयी पद्धती (functional method)
- २) लोकसाहित्यातील विचारप्रणाली व लोकसाहित्याचे कार्य तपासण्याच्या उद्देशातून विचारप्रणालीपर पद्धती (ideological method)
- ३) क्षेत्रीय अभ्यास करून लोकसाहित्याचा विशिष्ट समाजाशी, संस्कृतीशी असलेला संबंध तपासणे, विधी-प्रयोग-संहिता यांचा अभ्यास करणे या उद्देशातून 'संदर्भान्वयापद्धती' (contextual method)
- ४) शब्द (verbal) लोकसाहित्याच्या संरचनेचे विश्लेषण करणे या उद्देशातून संरचनापद्धती (structural method)
- ५) मौखिक आविष्काराच्या स्वरूपविशेषाचे विश्लेषण करण्याच्या दृष्टीतून मौखिक आविष्कारसूत्रपद्धती (oral formatic method)

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

लोककथा

- १) लोककथा : परंपरा व स्वरूपविचार
- २) लोककथांतील आशयसूत्रे व अनुभवविश्व
- ३) लोककथांतील कल्पनाबंध
- ४) लोककथा : संरचना कथाबीज – कथानक – पात्र – वातावरण – निवेदक – निवेदनपद्धती –



भाषा इत्यादी.

५) लोककथेचे कथात्म ललित साहित्याला योगदान

६) लोककथाकथन-सादरीकरणाच्या अंगाने विचार

७) समाजाशी अंतर्लक्ष्यी व बहिर्लक्ष्यी संबंध.

८) लोकशैलीतील एका साहित्यकृतीचा प्रकारलक्ष्यी अभ्यास (लोककथा, 'मराठवाड्यातील लोककथा', यु० म० पठाण)

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी - प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. फडके, य० दि०; विसाव्या शतकातील महाराष्ट्र.

२. मालशे, स० गं०; गतशतक शोधताना.

३. वाळिंबे, श० रा०; महाराष्ट्रातील सामाजिक पुनर्घटना.

४. जोग, रा० श्री०, मराठी वाङ्मयाचा इतिहास, खंड ४.

५. वैद्य, सरोजिनी; संक्रमण.

६. क्षीरसागर, श्री० के०; समाजविकास.

७. भोळे, भा० ल०; साहित्यप्रत्येय.

८. बेडकिहाळ, किशोर व भोळे, भा० ल० (संपा०); बदलता महाराष्ट्र.

९. कोतापल्ले, नागनाथ; ज्योतीपर्व.

१०. कुलकर्णी, गो० म०; आधुनिक मराठी साहित्याची सांस्कृतिक पार्श्वभूमी.

११. दि० य० देशपांडे, युक्तिवादाची उपकरणे.

१२. सदानंद मोरे,

सत्र : ३

**अभ्यासपत्रिका क्रमांक ११ : ३ – समाज भाषाविज्ञान (Socio Linguistics)**

उद्दिष्ट : भाषाव्यवहार आणि सामाजिक संरचना यांत परस्परावलंबित्वाचे नाते आहे. लौकिक जीवनात भाषेचा उपयोग व्याकरणिक नियमांनी होत नसून सामाजिक संकेतांनी होत असतो. त्यामुळे भाषेचा अभ्यास हा एका अर्थाने समाजाचाच अभ्यास असतो. समाजभाषाविज्ञानाची ही नवी दिशा भाषेच्या पारंपरिक अभ्यासाला छेद देणारी आहे. समाजभाषा-विज्ञानात समाजातील सर्व स्तरातील भाषाव्यवहारजाळे, त्यामागील भाषासंप्रेक्षण यांचा अभ्यास विद्यार्थ्यांनी करणे अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) समाज भाषाविज्ञान : संकल्पना, स्वरूप व व्याप्ती.

आ) भाषिक बदल व त्याची कारणे (सामाजिक फरक व त्यांचे परिणाम, भाषिक सापेक्षता सिद्धान्त (सपीर-व्होर्फ) व त्याचा प्रतिवाद.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) व्यवहाराची भाषा, संपर्क भाषा, उपभाषा. (व्यक्तिभाषा, स्त्री-पुरुषांची भाषा, जातव्यवस्था आणि आर्थिक वर्ग यांच्या भाषा) यांचे स्वरूप, कार्य आणि व्याप्ती.

आ) भाषांतर्गत भेद, भाषाद्वित्व, द्वैभाषिकत्व, बहुभाषिकत्व त्यांचे प्रकार व परिणाम, बोली भूगोल.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) भाषेचे प्रमाणीकरण-कारणे, निकष (भाषाबाह्य निकष, भाषिक धोरणांची आवश्यकता).

आ) भाषेच्या नियोजनाचे परिणाम, भाषेचे खच्चीकरण किंवा पदोन्नती, मराठी भाषकांचे अनुभव.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ

कालेलकर, ना० गो०; भाषा : इतिहास आणि भूगोल, मौज, मुंबई.

कालेलकर, ना० गो०; भाषा आणि संस्कृती, मौज, मुंबई.

कुलकर्णी, श्री० रं०; तेलंगणातील अरे मराठा समाज : भाषा आणि संस्कृती, म०रा० साहित्य संस्कृती मंडळ.

केळकर, अशोक रा०; मराठी भाषेचा आर्थिक संसार, मराठवाडा सा० प०, औरंगाबाद.

केळकर, अशोक रा०; वैखरी (भाषा आणि भाषाव्यवहार), मॅजेस्टिक, मुंबई.

केळकर, अशोक रा०; 'भाषिक स्वाधीनता', भाषा आणि जीवन, वर्ष ३, अंक ४, १९८५.

खोकले, वसंत; 'भाषाविकास व मराठी भाषा : समाजव्यवहार', नवभारत, जून, १९९०.

गोखले, द० न०; 'डॉ० केतकरांच्या भाषाविषयक विचारांबद्दल आणखी थोडेसे', भाषा आणि जीवन, वर्ष ३, अंक १, १९८५.

जोशी, श्री० बा०; 'रसनाविलास', महाराष्ट्र टाइम्स, २६ फेब्रुवारी १९९५.

दातार, छाया; 'जातिवाचक संबोधने – स्त्रियांमधली फूटपाडणी', भाषा आणि जीवन, वर्ष २, अंक ३, १९८४.

देव, विजया; 'ग्रामीण स्त्री : जीवन आणि भाषा', भाषा आणि जीवन, वर्ष १०, अंक २, १९९२.

प्रधान, ग० प्र०; 'राजकारणातील भाषा', *भाषा आणि जीवन*, वर्ष ३, अंक २, १९८५.

भवाळकर, तारा; 'मायबोलीतील धक्के आणि हिस्के', *भाषा आणि जीवन*, वर्ष ३, अंक २, १९८५.

मांडे, प्रभाकर; *सांकेतिक आणि गुप्त भाषा : परंपरा आणि स्वरूप*, सविता प्रकाशन, औरंगाबाद.

मालशे, मिलिंद; 'सामाजिक भाषाविज्ञान : एक नवे अभ्यासक्षेत्र', *मराठी संशोधन पत्रिका*, जाफेमा, वर्ष २५, अंक २, १९७८.

मुंडले, आशा; 'भाषेचे प्रदूषण-स्त्रीला भोवणारे', *भाषा आणि जीवन*, वर्ष २, अंक ३, १९८४.

साने, राजीव; 'सर्वनामांचे समाजशास्त्र', *भाषा आणि जीवन*, वर्ष २, अंक २, १९८४.

Aitchison, Jean; *Language Change, Progress or Decay*, London : Fontana.

Beteille A.; *Cast, Class & Power*,

Downes W.; *Language and Society*, London : Fontana.

Hudson, R. A.; *Sociolinguistics*, Cambridge University Press.

Trudgill Peter; *Sociolinguistics : An Introduction to Language & Society*, London : Penguin.

सत्र : ३

**अभ्यासपत्रिका क्रमांक ११ : ४ – विज्ञानसाहित्य (Vidnyan Sahitya)**

उद्दिष्ट : विज्ञान व साहित्य या एकमेकांपासून भिन्न अशा संकल्पना असल्या तरी विज्ञानावर आधारित ललित साहित्य हा एक वेगळा साहित्यप्रकार अनुवादाच्या माध्यमातून मराठी साहित्यात प्रविष्ट झाला. आंतरराष्ट्रीय ख्यातीच्या वैज्ञानिकांनी मराठी भाषेमध्ये हा विज्ञानसाहित्यप्रकार रुजवला. यातून मराठी साहित्यातील विज्ञान साहित्याची लक्षणीय परंपरा निर्माण झाली. या विज्ञान साहित्याच्या मूलतत्त्वांचे आणि परंपरेचे भान विद्यार्थ्याला आणून देणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) विज्ञानसाहित्य – स्वरूप व संकल्पना.

आ) विज्ञानसाहित्याच्या प्रेरणा व प्रयोजने.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) विज्ञानसाहित्याची परंपरा (पाश्चात्य आणि मराठी)

आ) विज्ञानसाहित्याच्या मूल्यमापनाचे निकष.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) वामन परत न आला, जयंत नारळीकर.

आ) संगणकाची सावली, सुबोध जावडेकर.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

१. बागूल, मराठी विज्ञान साहित्यसमीक्षा.

२. घाटे, निरंजन, विज्ञान साहित्य आणि संकल्पना.

३. जावडेकर, सुबोध, (संपा०) म० सु० पगारे, मराठी विज्ञान साहित्य.

४. कुलकर्णी, व० दि०, विज्ञान साहित्य आणि संकल्पना.

५. विज्ञानकथा विशेषांक, महाराष्ट्र साहित्य पत्रिका.

सत्र : ३

अभ्यासपत्रिका क्रमांक ११ : ५ – विशिष्ट लेखकाभ्यास २ – गो० वि० करंदीकर

(Study of Special Author : G. V. Karandikar)

उद्दिष्ट : कोणताही लेखक हा त्याच्या काळाच्या व ऐतिहासिकतेच्या पार्श्वभूमीवर लिहित असतो. तो अनेकवेळा विविध साहित्यप्रकार हाताळत असतो व त्यामध्ये आपले भरीव योगदानही देत असतो. त्याच्या लेखनाचा प्रभाव नंतरच्या लेखकांवरही पडत असतात. अशा लेखकाची पार्श्वभूमी, त्याची जडणघडण त्याने हाताळलेल्या वाङ्मयप्रकारांची विविधता त्याची जीवनदृष्टी, कलादृष्टी व प्रतिभाधर्म याचे स्वरूप लक्षात घेणे तसेच त्यांचे ऐतिहासिक स्थान यासंबंधीचे भान विद्यार्थ्यांना आणून देणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

लेखकाभ्यास : तात्त्विक मांडणी

अ) लेखकाचा प्रतिभाधर्म, जीवनदृष्टी, साहित्यदृष्टी.

आ) लेखकाचे वाङ्मयीन कार्य आणि ऐतिहासिक स्थान.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

परंपरा आणि नवता.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

स्पर्शाची पालवी.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

१. निरगुडकर, भारती; *समीक्षासंहिता*, शब्दालय प्रकाशन, श्रीरामपूर, २०१२.

२. राजाध्यक्ष, विजया; *बहुपेडी विंदा-खंड १ व २*, मौज प्रकाशन, मुंबई.

सत्र : ३

अभ्यासपत्रिका क्रमांक ११ : ६ – वैचारिक गद्य – २ (Vaicharik Gadhy : 2)

उद्दिष्ट : वैचारिक गद्यापासूनच आधुनिक मराठी साहित्याचा प्रारंभ झाला. कालांतराने विकसित झालेल्या कथा, कविता, कादंबरी, नाटक, ललित निबंध, प्रवासवर्णने इत्यादी साहित्यप्रकारांपेक्षा वैचारिक गद्य या प्रकाराचे स्वरूप कसे वेगळे आहे. मराठी गद्याची समृद्ध परंपरा समजून घेणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) वैचारिक गद्याची विविधता.

आ) स्वातंत्र्योत्तर काळातील वैचारिक गद्यामागील प्रेरणा : राजकीय, सामाजिक प्रेरणा, प्रबोधन चळवळी इत्यादी.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) १९४७-१९७७ या कालखंडातील वैचारिक गद्याची परंपरा.

आ) प्रबोधनातील पाऊलखुणा, (संपा०) गं० बा० सरदार.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) १९७७-२०१५ या कालखंडातील वैचारिक गद्याची परंपरा.

आ) ऐसे कैसे झाले भोंदू, डॉ० नरेंद्र दाभोळकर.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. फडके, य० दि०; विसाव्या शतकातील महाराष्ट्र.

२. मालशे, स० गं०; गतशतक शोधताना.

३. वाळिंबे, श० रा०; महाराष्ट्रातील सामाजिक पुनर्घटना.

४. जोग, रा० श्री०, मराठी वाङ्मयाचा इतिहास, खंड ४.

५. वैद्य, सरोजिनी; संक्रमण.

६. क्षीरसागर, श्री० के०; समाजविकास.

७. भोळे, भा० ल०; साहित्यप्रत्येय.

८. बेडकिहाळ, किशोर व भोळे, भा० ल० (संपा०); बदलता महाराष्ट्र.

९. कोतापल्ले, नागनाथ; ज्योतीपर्व.

१०. कुलकर्णी, गो० म०; आधुनिक मराठी साहित्याची सांस्कृतिक पार्श्वभूमी.

११. दि० य० देशपांडे, युक्तिवादाची उपकरणे.

१२. सदानंद मोरे,

सत्र : ३

**अभ्यासपत्रिका क्रमांक १२ : १ – आदिवासी मराठी साहित्य (Adivasi Sahitya)**

उद्दिष्ट : स्वातंत्र्योत्तर काळापासून आदिवासी जीवनाची नोंद मराठी लेखकांनी विशेषतः कादंबरीकारांनी घेतली असून त्यानंतर साठोत्तरी मराठी प्रवाहात आदिवासी साहित्य दाखल झाले. आजतागायत मोठ्या प्रमाणात कविता, आदिवासी जीवनाचे चित्रण करणाऱ्या कादंबऱ्या, नाटके व विपुल वैचारिक ग्रंथसंपदा आदिवासी साहित्य प्रवाहात नोंदविली गेली असून आदिवासी साहित्य आविष्काराने मराठी साहित्यात मोलाची भर घातली आहे. विद्यार्थ्यांना या साहित्य अभिव्यक्तीचा अभ्यास घडावा म्हणून ही अभ्यासपत्रिका महत्वाची ठरते. या साहित्यप्रवाहातून विद्यार्थ्यांना आदिवासी साहित्याचा परिचय होणे, त्यांच्या मौखिक व लिखित परंपरा संबंधी जाणीव विकसित करणे, आदिवासी साहित्याच्या संदर्भात सामाजिक चळवळींचा परिचय करून घेणे, आदिवासी बोली, संस्कृतीचा विद्यार्थ्यांना परिचय करून देणे अपेक्षित आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) आदिवासी साहित्य स्वरूप व संकल्पना.

आ) आदिवासी साहित्य चळवळ.

इ) आदिवासी साहित्याचे प्रेरणास्रोत, आदिवासी साहित्यसमीक्षा विचार.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) आदिवासी कवितेची वाटचाल, आदिवासी कवितेचे स्वरूप व विशेष.

आ) आदिवासी मराठी कविता (पाच आदिवासी कवींच्या प्रत्येकी चार निवडक मराठी कवितांचा अभ्यास)

भुजंग मेश्राम, कुसुम आलाम, चामुलाल राठवा, उषाकिरण आत्राम, संजय लोहकरे.

भुजंग मेश्राम : 'अरण्यबेट', 'चर्चा', 'या शहरांवर', 'ग्रँडफादर'

कुसुम आलाम : 'स्वातंत्र्यास', 'गढामंडल्याची वीरांगणा', 'इतिहास', 'पद्मश्री'

चामुलाल राठवा : 'ते आमची सेवा करतात', 'आदिवासी', 'माझी सनद कुठे आहे?', 'स्वातंत्र्य'

उषाकिरण आत्राम : 'जगापासून दूर दूर', 'पयसाची लाल आग व्हय', 'रानकेवड्यांनो आतातरी शहाणे व्हा', 'प्रित'.

संजय लोहकरे : 'इथली माणसं फक्त माणसांसाठीच जगतात', 'बाप', 'शाळा', 'आदिवासींच्या लिलावाचा प्रजासत्ताक देश'.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) आदिवासी आणि आदिवासीऐतर मराठी कादंबरी लेखनाची परंपरा, स्वरूप व विशेष.

आ) कलाकृतींचा अभ्यास ('भिवा फरारी' नजुबाई गावित).

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

१. आदिवासी साहित्यविचार, माहेश्वरी गावित.

२. मराठी आदिवासी साहित्य, अमर कांबळे.

३. आदिवासी साहित्य : स्वरूप आणि समीक्षा, विनायक तुमराम.

४. महाराष्ट्रातील आदिवासी मराठी साहित्य : एक शोध, माहेश्वरी गावित.
५. आदिवासी साहित्य आणि अस्मितावेध, (संपा०) प्रफुल्ल शिलेदार.
६. आदिवासी साहित्य संमेलने अध्यक्षीय भाषणे, (संपा०) गोविंद गारे.
७. गोंडी संस्कृतीचे संदर्भ, व्यंकटेश आत्राम.
८. उलगुलानव्रती डॉ० विनायक तुमराम, (संपा०) सुनिल कुमरे.
९. आदिवासी साहित्य विविधांगी आयाम, माहेश्वरी गावित.



सत्र : ३

अभ्यासपत्रिका क्रमांक १२ : २ – प्राचीन कालखंडाचा अभ्यास : शिवकाल  
(Study of Specific Period : Shivkal)

उद्दिष्ट : या अभ्यासपत्रिकेमध्ये शिवकाळातील वाङ्मयाचा अभ्यास करावयाचा आहे. हा अभ्यास समकालीन सामाजिक, राजकीय, धार्मिक, सांस्कृतिक पार्श्वभूमी व वाङ्मयीन प्रेरणा यांच्या संदर्भात करणे अपेक्षित आहे. या कालखंडातील वारकरी, समर्थ संप्रदायांतर्गत लेखन करणाऱ्या कवींच्या काव्याचा स्थूल स्वरूपात परिचय करून घेणे अपेक्षित आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

सामाजिक, राजकीय, धार्मिक व सांस्कृतिक पार्श्वभूमी.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

वाङ्मयीन प्रेरणा.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

संत तुकाराम – निवडक १० अभंग.

- १) \_\_\_\_\_
- २) \_\_\_\_\_
- ३) \_\_\_\_\_
- ४) \_\_\_\_\_
- ५) \_\_\_\_\_
- ६) \_\_\_\_\_
- ७) \_\_\_\_\_
- ८) \_\_\_\_\_
- ९) \_\_\_\_\_
- १०) \_\_\_\_\_

बहिणाबाई – निवडक ५

- १) \_\_\_\_\_
- २) \_\_\_\_\_
- ३) \_\_\_\_\_
- ४) \_\_\_\_\_
- ५) \_\_\_\_\_

संत रामदास – स्फुट रचना 'मनाचे श्लोक', 'आनंदवनभुवनी'.

वेणाबाई – निवडक ५

- १) \_\_\_\_\_
- २) \_\_\_\_\_
- ३) \_\_\_\_\_
- ४) \_\_\_\_\_
- ५) \_\_\_\_\_

अंतर्गत परीक्षा—एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा—एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

१. जोग, रा० श्री० व इतर; मराठी वाङ्मयाचा इतिहास, खंड ३, (१६८१ ते १८००) महाराष्ट्र साहित्य परिषद, पुणे, १९७३.
२. तुळपुळे, शं० गो०; पाच संतकवी, सुविचार प्रकाशन मंडळ, पुणे, १९८४.
३. तुळपुळे, शं० गो० व इतर; मराठी वाङ्मयाचा इतिहास, खंड १, (आरंभ ते १३५०) महाराष्ट्र साहित्य परिषद, पुणे, १९८४.
४. पाटील, म० सु०; तुकाराम—अंतर्बाह्य संघर्षाची अनुभवरूपे, शाद्वल प्रकाशन, मुंबई, २००४.
५. मालशे, स० गं०; मराठी वाङ्मयाचा इतिहास, खंड २, भाग १, (१३५० ते १६८०) महाराष्ट्र साहित्य परिषद, पुणे, १९८२.
६. मालशे, स० गं०; मराठी वाङ्मयाचा इतिहास, खंड २, भाग २, (१३५० ते १६८०) महाराष्ट्र साहित्य परिषद, पुणे, १९८२.
७. भावे, वि० ल०; महाराष्ट्र सारस्वत, खंड १, पॉप्युलर प्रकाशन, मुंबई, १९८३ (स०आ०).
८. भावे, वि० ल०; महाराष्ट्र सारस्वत, खंड २, पॉप्युलर प्रकाशन, मुंबई, १९८३ (स०आ०).
९. शेणोलीकर, ह० श्री०; प्राचीन मराठी वाङ्मयाचा इतिहास, मोघे प्रकाशन, कोल्हापूर, १९७१.
१०. सहस्रबुद्धे, म० ना०; मराठी शाहिरी वाङ्मय, ठोकळ, पुणे, १९६१.
११. सरदार, गं० बा०; संत साहित्याची सामाजिक फलश्रुती, महाराष्ट्र साहित्य परिषद, पुणे, १९७० (ति० आ०).
१२. सरदार, गं० बा०; तुकारामदर्शन, अर्थात् अभंगवाणी प्रसिद्ध तुकयाची (संपा०), मॉडर्न बुक डेपो प्रकाशन, प०आ०, १९६८.
- १३) वाटवे, के० ना० व कुलकर्णी, कुसुम; (संपा०) पंडिती काव्य, कॉन्टिनेन्टल प्रकाशन, पुणे, प०आ०, १९६८.

सत्र : ३

अभ्यासपत्रिका क्रमांक १२ : ३ – संशोधनशास्त्र व शोधनिबंध-१ (Research Methodology : 1)

उद्दिष्ट : विद्यार्थ्यांना स्वतंत्रपणे एखादा अभ्यासविषय घेऊन साहित्याचा शास्त्रीय पद्धतीने अभ्यास करण्याची संधी मिळावी या हेतूने या अभ्यासपत्रिकेची आखणी केली आहे. त्यासाठी प्रारंभी अभ्यास करण्याच्या विविध शास्त्रीय पद्धतींची व अभ्यास- घटकांची ओळख करून दिलेली असून उत्तर भागात त्यांनी त्या पद्धतींचे उपयोजन करून एक दीर्घ निबंध लिहावा अशी अपेक्षा ठेवलेली आहे. येथपर्यंत विद्यार्थ्यांना वाङ्मयाच्या इतिहासाचा, समीक्षेच्या तात्त्विक आणि उपयोजित अंगांचा आणि प्रत्यक्ष साहित्यकृतीच्या समीक्षेचा परिचय झालेला असतो. तेव्हा त्या पार्श्वभूमीवर संशोधनशास्त्र समजून घेऊन त्यांनी स्वतंत्रपणे आपल्या आवडीचा एक अभ्यासविषय निवडून अभ्यास करून दाखवावा अशी अपेक्षा आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

- १) संशोधन म्हणजे काय? वैज्ञानिक, सामाजिक व साहित्यिक संशोधन साम्यभेद
- २) साहित्यसंशोधन-स्वरूप, प्रकार व पद्धती

घटक २) व्याख्याने-१०, श्रेयांकन-०२

- १) साहित्यसंशोधन व साहित्यविचार-ग्रंथकार, साहित्यप्रकार, कालखंड, साहित्यकृती
- २) साहित्यसंशोधन व समीक्षा

घटक ३) व्याख्याने-१०, श्रेयांकन-०२

- १) साहित्यसंशोधन-भाषाशास्त्र व बोलींचा अभ्यास
- २) साहित्यसंशोधन व साहित्यकृतींचा, ग्रंथकारांचा तुलनात्मक अभ्यास

अंतर्गत परीक्षा-एकूण गुण ४०

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. कऱ्हाडे, सदा; *संशोधन : सिद्धान्त आणि पद्धती*, लोकवाङ्मय गृह, मुंबई, १९९७.
२. चुनेकर, सु० रा० व इतर (संपा०); *संशोधन : स्वरूप आणि पद्धती*, शिक्षण प्रसारक संस्था, संगमनेर, १९८३.
३. जोशी, वसंत व इतर (संपा०); *भाषा व साहित्य : संशोधन खंड १*, महाराष्ट्र साहित्य परिषद, पुणे, १९८१.
४. जोशी, वसंत व इतर (संपा०); *भाषा व साहित्य : संशोधन खंड २*, महाराष्ट्र साहित्य परिषद, पुणे, १९८५.
५. जोशी, वसंत व इतर (संपा०); *भाषा व साहित्य : संशोधन खंड ३*, महाराष्ट्र साहित्य परिषद, पुणे, १९८९.
६. तुळपुळे, शं० गो०; *प्राचीन मराठी कोरीवलेख*, पुणे विद्यापीठ, पुणे, १९६३.
७. देशमुख, उषा मा०; *मराठी संशोधनविद्या*, स्नेहवर्धन पब्लिशिंग हाऊस, पुणे,
८. बनहट्टी, श्री० ना० (संपा०); *ज्ञानदेवी-अध्याय १२*, सुविचार प्रकाशन मंडळ, पुणे, १९६७.
९. मालशे, स० गं०; *शोधनिबंधाची लेखनपद्धती*, सुविचार प्रकाशन, नागपूर, १९७५.
१०. संत, दु० का०; *शोधविज्ञानकोश*, अनाथ विद्यार्थी गृह प्रकाशन, पुणे, १९८५.
११. संत, दु० का०; *संशोधन पद्धती, प्रक्रिया व अंतरंग*, अनाथ विद्यार्थी गृह प्रकाशन, पुणे, १९६२.
१२. Whitney, F. L.; *Elements of Research*, Prentice-Hall, New York, 1954.

सत्र : ३

**अभ्यासपत्रिका क्रमांक १२ : ४ – चित्रपट पटकथांचा अभ्यास (Study of Movie Script)**

उद्दिष्ट : विसाव्या शतकात चित्रपटकलेने सार्वत्रिक मान्यता मिळवली असून चित्रपटकलेत अनेक कला व अत्याधुनिक तंत्रज्ञानाचा वापर केला जातो. चित्रपटाचा प्राण म्हणजे पटकथा. पटकथेची घडण कशी होत जाते व ती पडद्यावर कशा प्रकारे साकार केली जाते याचा अभ्यास विद्यार्थ्यांनी करणे येथे अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) चित्रपट माध्यम : स्वरूप आणि वैशिष्ट्ये.

ब) चित्रपटाचे विविध घटक : कथाबीज, पटकथा, दृश्यानुसंधान, संवाद, दिग्दर्शन, नेपथ्य, संगीत, पार्श्वसंगीत, वेशभूषा, छायाचित्रण, अभिनय, रंगसंगती, कॅमेरा इत्यादी यांचा थोडक्यात परिचय.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) पटकथा : स्वरूप आणि वैशिष्ट्ये.

ब) पटकथा : लेखनतंत्र संरचना आणि पटकथेचे विविध घटक.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) लोकशाहीर रामजोशी, ग० दि० माडगूळकर.

ब) सामना, विजय तेंडुलकर.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रांत परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. जोशी, रा० भि० (अनु०), मू०ले० बा० सी० मर्ढेकर, कला आणि मानव, मौज प्रकाशन गृह, मुंबई, १९८३.
२. जाधव, रा० ग०; कला, साहित्य व संस्कृती, सुगंधा प्रकाशन, पुणे.
३. अत्रे, प्र० के०, कऱ्हेचे पाणी, परचुरे प्रकाशन मंदिर, मुंबई, १९८६.
४. खोपकर, अरुण; गुरुदत्त-तीन अंकी शोकांतिका, ग्रंथाली वाचक चळवळ, १९८५.
५. अत्रे, प्र० के०; चित्रकथा, परचुरे प्रकाशन मंदिर, मुंबई, १९८५.
६. दीक्षित, विजय; चित्रपट-एक कला, रेणुका प्रकाशन, १९७९.
७. सपकाळ, अनिल; मराठी चित्रपटांची पटकथा, अनुबंध प्रकाशन, पुणे, २००५.
८. काळे, नारायण के.; प्रतिमा, रूप आणि गंध, १९७६.
९. साठे, वसंत; बखर सिनेमाची, व्ही० शांताराम चलच्चित्र शास्त्रीय अनुसंधान व सांस्कृतिक प्रतिष्ठान.
१०. कुलकर्णी, अ० वा०, मराठी नाट्यलेखनतंत्राची वाटचाल, व्हीनस प्रकाशन, पुणे, १९७६.
११. हातकणंगलेकर, म० द व पवार, गो० मा०; मराठी साहित्य-प्रेरणा व स्वरूप, पॉप्युलर प्रकाशन, १९८६.
१२. संत, दु० का०, ललितकला आणि ललित वाडमय, एम० व्ही० फडके, १९८२.
१३. कुलकर्णी, मधु, ललित साहित्यातील आकृतीबंधाची जडणघडण, शुभदा सारस्वत, १९८७.
१४. माडगूळकर, ग० दि०; वाटेवरल्या सावल्या, विश्वमोहिनी प्रकाशन, १९८७.
१५. तेंडुलकर, विजय; सामना, नीलकंठ प्रकाशन, १९७८.
१६. नेमाडे, भालचंद्र; साहित्याची भाषा, साकेत प्रकाशन, १९८७.

१७. शिंदे, मा० कृ०, *सिनेमाशास्त्र आणि तंत्र*, नवमत प्रकाशन संस्था, मुंबई, १९८०.
१८. खोपकर, अरुण; चलचित्र.
१९. खोपकर, अरुण; गुरुदत्त : एक तीन अंकी शोकांतिका,
२०. Ludolf, Anheim, *Film as Arts*, Feber & Feber, London, 1983.
२१. Morris, Beja, *Film & Literature*, Longman, New York, 1979.
२२. Dwight V. Swain & Joye R. Swain, *Film Scripting & Practical Manual*, Focal Press, London, 1987.

सत्र : ३

अभ्यासपत्रिका क्रमांक १२ : ५ – मराठी व्याकरणाच्या समस्या – १

(Problems of Marathi Grammer : 1)

उद्दिष्ट : सदर व्याकरणविषयक अभ्यासपत्रिकेत मराठी वर्णविचारांपासून वाक्यविचारा-पर्यंतच्या सर्व संकल्पनांचा शास्त्रीय दृष्टीने व ऐतिहासिक संदर्भात परामर्श घ्यावयाचा आहे. एम० ए० पूर्वपातळीवर विद्यार्थ्यांस प्रामुख्याने प्रचलित असणाऱ्या व्याकरणविचाराची ओळख झालेली आहे, असे येथे गृहीत धरलेले आहे. तथापि, कोणत्याही जिवंत भाषेच्या संदर्भात त्या प्रचलित विचारांचा अनेक कारणांनी पुनर्विचार करण्याची आवश्यकता वेळोवेळी निर्माण होत असते. शास्त्रीय पद्धतीने हा पुनर्विचार कसा करावा हे या अभ्यासपत्रिकेच्या अभ्यासातून विद्यार्थ्यांनी शिकावयाचे आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

सामान्य विचार :

१) व्याकरणाचे प्रयोजन.

२) व्याकरण हे शास्त्र वर्णनात्मक (descriptive) की आदेशात्मक (prescriptive).

३) व्याकरणाचा विषय : प्रमाणभाषा की बोली? प्रमाणभाषा ही उच्चारित की लिखित-मुद्रित?

४) संस्कृत आणि इंग्रजी व्याकरणांचा मराठी व्याकरणावर प्रभाव आणि त्यातून निर्माण झालेली परिस्थिती.

५) व्याकरण आणि लेखनाचे नियम : अन्योन्यसंबंध.

६) शुद्ध, अशुद्ध या संकल्पना आणि त्यांचे शास्त्रीय मूल्य.

घटक २) व्याख्याने-१०, श्रेयांकन-०२

वर्णविचार : समस्या

१) वर्णविचार हा व्याकरणाचा विषय आहे काय?

२) वर्णभेदाचे निकष कोणते? अंतरयुग्म (minimal pair)

३) स्वरांचे न्हस्व-दीर्घ भेद वेगळे गणावे का?

४) अनुस्वार हा स्वतंत्र वर्ण आहे का?

५) महाप्राण व्यंजने (ख, ध, भ) हे मूल वर्ण की संयोग?

६) व्हे, न्ह, म्ह...हे संयोग की मूल वर्ण?

७) मराठी वर्णांची संख्या.

८) मराठी व्याकरणातला संधिविचार.

९) मराठीचा स्वराघात.

घटक ३) व्याख्याने-१०, श्रेयांकन-०२

शब्दविचार : समस्या

१) शब्दांच्या वर्गीकरणाचे प्रयोजन आणि तत्त्व.

२) मराठी व्याकरणपरंपरेतला वर्गीकरणविचार, त्याची चिकित्सा आणि तत्त्वशुद्ध वर्गीकरण.

३) मराठीतील परंपरागत लिंगविचार आणि त्याच्या पुनर्विचाराची

आवश्यकता.

४) संस्कृत समासव्यवस्थेची मराठीच्या संदर्भात युक्तायुक्तता.

५) व्याकरणाच्या कक्षेत व्युत्पत्तिविचार येतो काय? किती प्रमाणात?

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

१. अर्जुनवाडकर, कृ० श्री०; मराठी व्याकरण : वाद आणि प्रवाद, सुलेखा प्रकाशन, पुणे, १९८७.

२. अर्जुनवाडकर, कृ० श्री०; मराठी व्याकरणाचा इतिहास, मराठी विभाग, मुंबई विद्यापीठ, मुंबई, १९९२.

३. आचार्य, मा० ना०; मराठी व्याकरण विवेक, स्नेहवर्धन प्रकाशन, पुणे, २००१.

४. गुंजीकर, रा० भि०; मराठी व्याकरणावर विचार (रा० भि० गुंजीकर यांचे संकलित लेख, खंड १),

५. चिपळूणकर, कृष्णशास्त्री; मराठी व्याकरणावर निबंध, चित्रशाळा प्रेस, पुणे, १९२३.

६. दामले, मोरो केशव; शास्त्रीय मराठी व्याकरण, (संपा० कृ० श्री० अर्जुनवाडकर), देशमुख आणि कं०, पुणे, १९७०.

७. दीक्षित, प्र० ना०; मराठी व्याकरण : काही समस्या, शुभदा प्रकाशन, फलटण, १९७५.

८. परब, प्रकाश; मराठी व्याकरणाचा अभ्यास, ओरिएंट लाँगमन, मुंबई, २००२.

९. मंगरुळकर, अरविंद; मराठीच्या व्याकरणाचा पुनर्विचार, पुणे विद्यापीठ, पुणे, १९६४.

१०. मोडक, गो० कृ०; मराठीचे अंतरंगदर्शन, (व्याकरण विभाग), मोडक गो० कृ०, १९३२.

११. सबनीस, म० पां०; आधुनिक मराठीचे उच्चतर व्याकरण, म० पां० सबनीस, मुंबई, १९५१.

सत्र : ३

अभ्यासपत्रिका क्रमांक १२ : ६ – मराठी वाङ्मयाची सांस्कृतिक पार्श्वभूमी

(Cultural Background of Marathi Literature)

उद्दिष्ट : इ०स० १८१८ ते १८७४ या कालखंडामध्ये महाराष्ट्रात निर्माण झालेल्या विविध सामाजिक व सांस्कृतिक घटनांच्या पार्श्वभूमीवर गद्य साहित्याची निर्मिती झाली. त्या नवीन जाणिवांचा, सामाजिक घटितांचा परिचय व्हावा आणि त्यांचे साहित्यनिर्मितीतील महत्त्व स्पष्ट व्हावे तसेच साहित्य व समकालीन संस्कृती यांतील अनुबंध स्पष्ट व्हावे हा या अभ्यासपत्रिकेमागील हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) संस्कृती म्हणजे काय? तिचे घटक स्पष्ट करा.

ब) नव्या जाणिवांचा उदय-राजकीय, सामाजिक कला आणि वाङ्मय, धर्मविषयक या जाणिवांचा मराठी साहित्यसंस्कृतीशी परस्परसंबंध.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) भाषांतरयुग आणि मराठी साहित्य.

ब) विविध सामाजिक संस्था आणि साहित्य

१) दक्षिणा प्राइज कमिटी

२) प्रार्थना समाज

३) मानवधर्मसभा

४) विद्यापीठाची स्थापना

५) समाजसुधारकांचे कार्य

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) सुखदायी राज्यप्रकरणी निबंध, विष्णुबुवा ब्रह्मचारी, (संपा०)द० दि० पुंडे.

ब) अखंड, महात्मा फुले.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.



सत्र : ३

**अभ्यासपत्रिका क्रमांक १३ : १ – महानगरीय साहित्य (Mahanagariya Sahitya)**

उद्दिष्ट : दोन महायुद्धांच्या दरम्यानच्या काळात भारतीय समाजजीवनात आमूलाग्र परिवर्तन होत गेले व खेड्यापाड्यांतील समाज शहराकडे औद्योगिकीकरणामुळे स्थलांतरित होत गेला. त्यातून शहरीकरणाची प्रक्रिया सुरू झाली. विविध कारणांमुळे शहरांची महानगरी होत गेली. या शहरीकरणाच्या व महानगरीकरणाच्या प्रक्रियेमुळे मानवी जीवनातील गुंतागुंत अधिकच वाढत गेली. यातून महानगरावर आधारित वैशिष्ट्यपूर्ण साहित्य निर्माण होत गेले. त्याचा अभ्यास या अभ्यासपत्रिकेत करावयाचा आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) शहरीकरण, महानगरीकरण प्रक्रिया (समाजशास्त्रीय परिप्रेक्ष्यातून) महानगरी संस्कृती.

ब) महानगरी जीवन, त्यात कालपरत्वे घडत गेलेले बदल, व्यामिश्रता, महानगरी जाणिवा, संवेदना, परात्मता, भयग्रस्तता, मूल्यभ्रष्टता, व्यक्तिकेंद्रितता इत्यादी.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

महानगरी साहित्यातील विषय. अनुभवविश्व, घटना, पात्र, वातावरण, प्रतिमासृष्टी, भाषा इत्यादी घटकांतील वेगळेपणा (दलित व ग्रामीण साहित्याच्या तुलनेत).

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

१) भाऊ पाध्ये यांच्या श्रेष्ठ कथा – दिलीप पु० चित्रे.

२) काय डेंजर वारा सुटलाय – जयंत पवार.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. पोवार, छाया; मराठी नागर कथा.

२. खोले, विलास (संपा०); गेल्या अर्धशतकातील मराठी कादंबरी.

३. आडारकर, नीरा व मेनन, मीना; कथा मुंबईच्या गिरणगावाची.

४. अन्सल, कुसुम; आधुनिक हिंदी उपन्यासांमधे महानगर.

५. नारंग, सुदर्शन (संपा०); महानगराची कहानियाँ.

सत्र : ३

अभ्यासपत्रिका क्रमांक १३ : २ – प्राचीन कालखंडाचा अभ्यास : पेशवेकाल  
(Study of Specific Period : Peshwekal)

उद्दिष्ट : या अभ्यासपत्रिकेमध्ये पेशवेकाळातील (पूर्व पेशवाई व उत्तर पेशवाई) वाङ्मयाचा अभ्यास करावयाचा आहे. हा अभ्यास समकालीन सामाजिक, राजकीय, धार्मिक, सांस्कृतिक पार्श्वभूमी व वाङ्मयीन प्रेरणा यांच्या संदर्भात करणे अपेक्षित आहे. या कालखंडातील पंडिती, शाहिरी परंपरेतील वाङ्मयाचा व बखर गद्याचा स्थूल स्वरूपात परिचय करून घेणे अपेक्षित आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२  
सामाजिक, राजकीय, धार्मिक व सांस्कृतिक पार्श्वभूमी.

घटक २) व्याख्याने-२०, श्रेयांकन-०२  
वाङ्मयीन प्रेरणा.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२  
मोरोपंत – श्लोक केकावली.  
कृष्णाजी शामराजलिखित भाऊसाहेबांची बखर.  
शाहिरी कविता : पोवाडा आणि लावणी

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ ग्रंथ :

मऱ्हाटी लावणी, म० वा० धोंड.

मराठी शाहिरी वाङ्मय, म० ना० सहस्रबुद्धे.

मराठी कवितेचा उषःकाल, श्री० म० वर्दे.

पैजण, म० ना० अदवंत.

सत्र : ३

अभ्यासपत्रिका क्रमांक १३ : ३ – संशोधनशास्त्र व शोधनिबंध-२ (Research Methodology : 2)

उद्दिष्ट : विद्यार्थ्यांना स्वतंत्रपणे एखादा अभ्यासविषय घेऊन साहित्याचा शास्त्रीय पद्धतीने अभ्यास करण्याची संधी मिळावी या हेतूने या अभ्यासपत्रिकेची आखणी केली आहे. त्यासाठी प्रारंभी अभ्यास करण्याच्या विविध शास्त्रीय पद्धतींची व अभ्यास- घटकांची ओळख करून दिलेली असून उत्तर भागात त्यांनी त्या पद्धतींचे उपयोजन करून एक दीर्घ निबंध लिहावा अशी अपेक्षा ठेवलेली आहे. येथपर्यंत विद्यार्थ्यांना वाङ्मयाच्या इतिहासाचा, समीक्षेच्या तात्त्विक आणि उपयोजित अंगांचा आणि प्रत्यक्ष साहित्यकृतीच्या समीक्षेचा परिचय झालेला असतो. तेव्हा त्या पार्श्वभूमीवर संशोधनशास्त्र समजून घेऊन त्यांनी स्वतंत्रपणे आपल्या आवडीचा एक अभ्यासविषय निवडून अभ्यास करून दाखवावा अशी अपेक्षा आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

साहित्यसंशोधन व पाठचिकित्साशास्त्र-प्राचीन हस्तलिखित विचार, लिपीविचार, कालनिर्णय, ऐतिहासिक कागदपत्रे, शिलालेख, ताम्रपट इत्यादींचा विचार

घटक २) व्याख्याने-१०, श्रेयांकन-०२

ग्रंथालयीन वाचनाचे संयोजन, ग्रंथसूचिशस्त्र व संशोधनसाधने (स्थूल परिचय)

घटक ३) व्याख्याने-१०, श्रेयांकन-०२

विद्यापीठीय प्रबंधलेखन

अंतर्गत परीक्षा-एकूण गुण ४०

सत्रातील अंतर्गत चाचणी परीक्षा म्हणून विद्यार्थ्यांनी एक शोधनिबंध लिहावयाचा आहे. त्याचा तपशील व गुणविभागणी पुढीलप्रमाणे :

शोधनिबंधासाठी पुढील नियम निश्चित करण्यात आलेले आहेत :

१) शोधनिबंध सुमारे ८,००० ते १०,००० शब्दांचा (सुमारे ४० ते ५० फुलस्केप) असावा.

२) शोधनिबंधाच्या लेखनतंत्राचे पालन केलेले असावे.

३) शोधनिबंधाचा अभ्यासविषय मार्गदर्शक प्राध्यापकांच्या सल्ल्याने व संमतीने निश्चित केलेला असावा. ही संमती लेखी स्वरूपात असावी.

४) विद्यार्थ्यांनी तो स्वतः सुवाच्य अक्षरांत लिहिलेला असावा.

५) विद्यार्थ्यांनी शोधनिबंधावर फक्त आपला पटावरील क्रमांक घालावा, नाव घालू नये.

शोधनिबंधाची गुणविभागणी : ३० गुण

तोंडी परीक्षा : १० गुण

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. कऱ्हाडे, सदा; संशोधन : सिद्धान्त आणि पद्धती, लोकवाङ्मय गृह, मुंबई, १९९७.

२. चुनेकर, सु० रा० व इतर (संपा०); संशोधन : स्वरूप आणि पद्धती, शिक्षण प्रसारक संस्था, संगमनेर, १९८३.

३. जोशी, वसंत व इतर (संपा०); भाषा व साहित्य : संशोधन खंड १, महाराष्ट्र साहित्य परिषद, पुणे, १९८१.

४. जोशी, वसंत व इतर (संपा०); भाषा व साहित्य : संशोधन खंड २, महाराष्ट्र साहित्य परिषद, पुणे, १९८५.

५. जोशी, वसंत व इतर (संपा०); *भाषा व साहित्य : संशोधन खंड ३*, महाराष्ट्र साहित्य परिषद, पुणे, १९८९.
६. तुळपुळे, शं० गो०; *प्राचीन मराठी कोरीवलेख*, पुणे विद्यापीठ, पुणे, १९६३.
७. देशमुख, उषा मा०; *मराठी संशोधनविद्या*, स्नेहवर्धन पब्लिशिंग हाऊस, पुणे,
८. बनहट्टी, श्री० ना० (संपा०); *ज्ञानदेवी-अध्याय १२*, सुविचार प्रकाशन मंडळ, पुणे, १९६७.
९. मालशे, स० गं०; *शोधनिबंधाची लेखनपद्धती*, सुविचार प्रकाशन, नागपूर, १९७५.
१०. संत, दु० का०; *शोधविज्ञानकोश*, अनाथ विद्यार्थी गृह प्रकाशन, पुणे, १९८५.
११. संत, दु० का०; *संशोधन पद्धती, प्रक्रिया व अंतरंग*, अनाथ विद्यार्थी गृह प्रकाशन, पुणे, १९६२.
१२. Whitney, F. L.; *Elements of Research*, Prentice-Hall, New York, 1954.

सत्र : ३

**अभ्यासपत्रिका क्रमांक १३ : ४ – लोकप्रिय साहित्य (Popular Literature)**

उद्दिष्ट : काही साहित्यकृती या सर्वसामान्य वाचकांकडून मोठ्या प्रमाणात वाचल्या जातात व त्यांच्या अनेक आवृत्याही प्रकाशित होत असतात. त्यांच्या लोकप्रियतेची कारणे कोणती आहेत, त्याआधारे सर्वसामान्य वाचकाची अभिरुची कशी आहे याचा अभ्यास विद्यार्थ्यांनी करणे अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) लोकप्रिय साहित्य-स्वरूप आणि वैशिष्ट्ये.

आ) लोकप्रिय साहित्य आणि अभिजात साहित्य यांतील फरक.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) मराठीतील लोकप्रिय साहित्याची परंपरा. महत्त्वाचे लेखक व त्यांच्या साहित्यकृतींचा परिचय.

आ) लोकप्रिय साहित्यातील प्रमुख लेखनप्रकार. कथा, कादंबरी, चरित्र, प्रवासवर्णन.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) 'महाश्वेता', सुमती क्षेत्रमाडे.

आ) 'काळा पहाड', बाबुराव अर्नाळकर.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

सत्र : ३

अभ्यासपत्रिका क्रमांक १३ : ५ – मराठी व्याकरणाच्या समस्या – २

(Problems of Marathi Grammer : 2)

उद्दिष्ट : सदर व्याकरणविषयक अभ्यासपत्रिकेत मराठी वर्णविचारांपासून वाक्यविचारा-पर्यंतच्या सर्व संकल्पनांचा शास्त्रीय दृष्टीने व ऐतिहासिक संदर्भात परामर्श घ्यावयाचा आहे. एम० ए० पूर्वपातळीवर विद्यार्थ्यांस प्रामुख्याने प्रचलित असणाऱ्या व्याकरणविचाराची ओळख झालेली आहे, असे येथे गृहीत धरलेले आहे. तथापि, कोणत्याही जिवंत भाषेच्या संदर्भात त्या प्रचलित विचारांचा अनेक कारणांनी पुनर्विचार करण्याची आवश्यकता वेळोवेळी निर्माण होत असते. शास्त्रीय पद्धतीने हा पुनर्विचार कसा करावा हे या अभ्यासपत्रिकेच्या अभ्यासातून विद्यार्थ्यांनी शिकावयाचे आहे

घटक १) व्याख्याने-२०, श्रेयांकन-०२

विभक्तिविचार : समस्या

१) वचनविचार : स्वतंत्र विकरण की विभक्तिविकरणाचे अंग?

२) विभक्तिव्यवस्थेचा आधार : प्रत्यय की अर्थ?

३) विभक्तींची संख्या आणि नावे.

४) षष्ठी विभक्तींचा वाद.

५) विभक्तिप्रत्यय आणि शब्दयोगी अव्यये.

६) शून्य प्रत्यय (zero suffix) आणि स्वायत्त व परायत्त (free and bound morphemes) रूपिम.

७) चरम प्रत्यय-संकल्पना आणि तिच्या मर्यादा

घटक २) व्याख्याने-१०, श्रेयांकन-०२

क्रियापदविचार : समस्या

१) दादोबांचा क्रियापदविचार.

२) संयुक्त क्रियापद.

३) शक्य आणि प्रयोजक याविषयीची मतांतरे.

४) धातुविभक्तींची संख्या आणि नावे.

घटक ३) व्याख्याने-१०, श्रेयांकन-०२

वाक्यविचार : समस्या

१) कर्ता, कर्म, क्रिया आणि पूरक.

२) प्रयोगसंख्या.

३) प्रयोग आणि 'मुख' (Voice)

४) वाक्यपृथक्करण.

५) पदपरिस्फोट (व्याकरण चालवणे)

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. अर्जुनवाडकर, कृ० श्री०; मराठी व्याकरण : वाद आणि प्रवाद, सुलेखा प्रकाशन, पुणे, १९८७.
२. अर्जुनवाडकर, कृ० श्री०; मराठी व्याकरणाचा इतिहास, मराठी विभाग, मुंबई विद्यापीठ, मुंबई, १९९२.
३. आचार्य, मा० ना०; मराठी व्याकरण विवेक, स्नेहवर्धन प्रकाशन, पुणे, २००१.
४. गुंजीकर, रा० भि०; मराठी व्याकरणावर विचार (रा० भि० गुंजीकर यांचे संकलित लेख, खंड १),
५. चिपळूणकर, कृष्णशास्त्री; मराठी व्याकरणावर निबंध, चित्रशाळा प्रेस, पुणे, १९२३.
६. दामले, मोरो केशव; शास्त्रीय मराठी व्याकरण, (संपा० कृ० श्री० अर्जुनवाडकर), देशमुख आणि कं०, पुणे, १९७०.
७. दीक्षित, प्र० ना०; मराठी व्याकरण : काही समस्या, शुभदा प्रकाशन, फलटण, १९७५.
८. परब, प्रकाश; मराठी व्याकरणाचा अभ्यास, ओरिएंट लाँगमन, मुंबई, २००२.
९. मंगरुळकर, अरविंद; मराठीच्या व्याकरणाचा पुनर्विचार, पुणे विद्यापीठ, पुणे, १९६४.
१०. मोडक, गो० कृ०; मराठीचे अंतरंगदर्शन, (व्याकरण विभाग), मोडक गो० कृ०, १९३२.
११. सबनीस, म० पां०; आधुनिक मराठीचे उच्चतर व्याकरण, म० पां० सबनीस, मुंबई, १९५१.

सत्र : ३

अभ्यासपत्रिका क्रमांक १३ : ६ – अल्पसंख्याकांचे साहित्य : मराठी भाषक ख्रिस्ती व मुस्लिम समाजीय साहित्य

उद्दिष्ट : मराठी साहित्य परंपरेमध्ये विविध धर्मातील साहित्यिकांनी प्रारंभापासून मोलाची भर घातली आहे. यापैकी ख्रिस्ती व मुस्लिम धर्मीय लेखकांनी मराठीमध्ये केलेल्या मौलिक लेखनाकडे विद्यार्थ्यांचे लक्ष वेधणे व त्यांचा निवडक साहित्यकृतींच्या आधारे अभ्यास करणे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) मराठी भाषक ख्रिस्ती समाजीय साहित्याची परंपरा. (ख्रिस्तपुराणापासून इ०स० २०१५ पर्यंत).

आ) मराठी भाषक ख्रिस्ती समाजीय साहित्याचे स्वरूप व वैशिष्ट्ये.

घटक २) व्याख्याने-१०, श्रेयांकन-०१

अ) कादंबरी : 'यमुनापर्यटन', बाबा पदमनजी.

आ) कवितासंग्रह : 'रक्तात भिनलेल्या कविता' जॉर्ज लोपीस.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) मराठी भाषक मुस्लिम धर्मियांच्या साहित्याची परंपरा. (शेख महंमद ते इ०स० २०१५ पर्यंत).

आ) मराठी भारतीय मुस्लिम धर्मियांच्या साहित्याचे स्वरूप व वैशिष्ट्ये.

घटक ४) व्याख्याने-१०, श्रेयांकन-०१

अ) आत्मकथन : 'भोगले जे दुःख त्याला' आशा अपराद.

आ) कादंबरी : 'रहबर' रफिक सूरज, शब्दालय प्रकाशन.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

जागतिकीकरण आणि मराठी साहित्य, (संपा०) डॉ० शरद गायकवाड, प्रा० सुनील शिंदे, स्नेहवर्धन प्रकाशन, पुणे.

म० सा० प० मराठी वाङ्मयाचा इतिहास, खंड ८, संपा० रा० ग० जाधव.

मराठी ख्रिस्ती साहित्य, डॉ० गंगाधर मोरजे, लोकवाङ्मय गृह, मुंबई.

मराठी ख्रिस्ती साहित्यातील परिवर्तने, डॉ० गंगाधर मोरजे, लोकवाङ्मय गृह, मुंबई.

धर्म ख्रिस्ताचा विचार साहित्याचा, सुनील आढाव, दिलीपराज प्रकाशन, पुणे.

मुस्लिम मराठी साहित्य प्रेरणा आणि स्वरूप, फ० म० शहाजिंदे व फारूक तांबोळी.

नवे प्रवाह नवे स्वरूप, कादिरा जुल्फी शेख.

भारतीय मुसलमानांची समाजरचना व मानसिकता, फक्रुद्दीन बेनूर.

मुस्लिम मराठी साहित्य : एक आकलन, मेहबूब सय्यद.



सत्र : ४

**अभ्यासपत्रिका क्रमांक १४ : १ – साहित्यकृतीच्या माध्यमांतरांचा अभ्यास**

उद्दिष्ट : साहित्य, चित्रपट, नाटक आदी मौखिक, लिखित व दृक्श्राव्य माध्यमांचा विद्यार्थ्यांना संकल्पनात्मक परिचय व्हावा. विसाव्या व एकविसाव्या शतकात लिखित साहित्याचे दृक्श्राव्य माध्यमांमध्ये मोठ्या प्रमाणात माध्यमांतर झालेले दिसते. ही माध्यमांतराची प्रक्रिया विद्यार्थ्यांनी समजून घेणे येथे अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) माध्यम म्हणजे काय, माध्यमांचे स्वरूप, संकल्पना व वैशिष्ट्ये.

आ) भिन्न माध्यमांच्या संदर्भातील चर्चा – मौखिक माध्यमे, लिखित माध्यमे, दृक्श्राव्य माध्यमे यांतील चर्चा.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) साहित्यप्रकाराची संकल्पना.

आ) कथनात्म, नाट्यात्म, काव्यात्म साहित्याचे सैद्धान्तिक विवेचन.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) कथात्म साहित्यकृतीचे नाट्यरूपांतर.

आ) रत्नाकर मतकरी, 'जौळ' नाटक-माझं काय चुकलं?

घटक ४) व्याख्याने-२०, श्रेयांकन-०२

अ) कथात्म साहित्यकृतीचे चित्रपट माध्यमांतर.

आ) आनंद यादव, 'नटरंग', चित्रपट-नटरंग.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. आचवल, माधव; किमया, मुंबई, १९७९.

२. कानडे, मु० श्री०; प्रयोगक्षम मराठी नाटके, नागपूर, १९६२.

३. कुलकर्णी, अरविंद वामन; मराठी नाट्यलेखनतंत्राची वाटचाल, पुणे, १९७६.

४. कुलकर्णी, भीमराव व मीना जेस्ते (संपा०); साहित्य आणि नाट्य-काही समस्या, पुणे, १९७४.

५. कुळकर्णी, द० भि०; तिसऱ्यांदा रणांगण, नागपूर, १९७६.

६. कुलकर्णी, व० दि०; साहित्यरूप आणि गंध, मुंबई.

७. कुलकर्णी, गो० म०; रसग्रहण कला आणि स्वरूप, पुणे, १९५३-७३.

८. गोडसे, द० ग०; पोट, मुंबई, १९६३.

९. दादेगांवकर, उमा; बॅरिस्टर-तीन रूपे, मुंबई, १९८८.

१०. पवार, गो० मा० व हातकणंगलेकर, म० द० (संपा०); मराठी साहित्य-प्रेरणा आणि स्वरूप, मुंबई, १९८६.

११. पाटणकर, रा० भा०; सौंदर्यमीमांसा, मुंबई, १९७४.

१२. भागवत, श्री० पु० व इतर (संपा०); साहित्य-अध्यापन आणि प्रकार, पॉप्युलर प्रकाशन, मुंबई, १९८७.

१३. सोमण अंजली; साहित्य आणि सामाजिक संदर्भ, पुणे, १९८९.

१४. William Archur; Play-Making, A Manual of Craftsmanship, New York, 1960.

१५. Aristotle; *Aristoles Theory of Poetry And Fine Art*, Introduction, tr. & ed. by S. H. Butcher, Dover Publications, New York, 1966.
१६. Hudson W. H.; *An Introduction to The Study of Literature*, New Delhi, repr. 1983.

सत्र : ४

**अभ्यासपत्रिका क्रमांक १४ : २ – स्त्रीवादी चळवळ आणि सिद्धान्त**

उद्दिष्ट : प्रस्तुत अभ्यासपत्रिकेत स्त्रीवादी चळवळीचा इतिहास आणि त्यासंदर्भात झालेल्या सिद्धान्तनाची सूत्रे लक्षात यावीत, भारतीय स्त्रीवादी चळवळीचा इतिहास आणि वेगवेगळ्या प्रवाहांचा उगम व विकास लक्षात यावा, लिंगभेद आणि समाज, साहित्य, संस्कृती यांच्यातील संघर्षरूपे आणि त्यासंदर्भातील विविध दृष्टिकोणांचा परिचय व्हावा, हे अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) स्त्रीवाद : संकल्पना व स्वरूप

ब) पाश्चात्य स्त्रीवाद – चळवळ आणि सिद्धान्त

क) पाश्चात्य स्त्रीवादी प्रवाह – उदारमतवादी स्त्रीवाद, जहाल स्त्रीवाद, मार्क्सवादी स्त्रीवाद, काळा स्त्रीवाद

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) भारतीय स्त्रीवाद – संकल्पना व स्वरूप

ब) भारतीय स्त्रीवादी प्रवाह – (महाराष्ट्राच्या विशेष संदर्भात) उदारमतवादी स्त्रीवाद, जहाल स्त्रीवाद, दलित स्त्रीवाद पर्यावरणवादी स्त्रीवाद.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) महाराष्ट्रातील स्त्रीवादी चळवळ आणि स्त्रीवादी संघटनांचे कार्य.

ब) स्त्रीवादी मराठी नियतकालिके व त्यांचे कार्य. 'मिळून साऱ्याजणी', 'बायजा'.

घटक ४) व्याख्याने-२०, श्रेयांकन-०२

पुढील साहित्यकृतींचा अभ्यास

क) 'स्त्रीपुरुषतुलना', ताराबाई शिंदे.

ड) 'तिची भाकरी कोणी चोरली?' (लेखसंग्रह), संध्या नरे-पवार.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

बाईमाणूस, करुणा गोखले, राजहंस प्रकाशन, पुणे.

संदर्भसहित स्त्रीवाद, गीताली, वि० मं०, शब्द प्रकाशन, मुंबई.

स्त्रीवादी समीक्षा-स्वरूप आणि उपयोजन, अश्विनी धोंगडे, दिलीपराज प्रकाशन, पुणे.

महाराष्ट्रातील स्त्री चळवळीचा मागोवा, मेधा नानिवडेकर, प्रतिमा प्रकाशन, पुणे.

स्त्रीवादी सामाजिक विचार, विद्युत भागवत, डायमंड पब्लिकेशन्स, पुणे.

स्त्री प्रश्नांची वाटचाल, विद्युत भागवत, प्रतिमा प्रकाशन, पुणे.

महाराष्ट्रातील स्त्रीविषयक सुधारणावादांचे सत्ताकारण, नारायण भोसले, दतिची प्रकाशन, पुणे.

सांस्कृतिक प्रवाहांची स्त्रीवादी समीक्षा, वंदना महाजन, स्नेहवर्धन प्रकाशन, पुणे.

भारतीय स्त्रीवाद : बदलते आयाम, (संपा०) वंदना महाजन, स्त्रीवाणी विशेषांक.

स्त्रीवाद संकल्पना व उपयोजन, मंगला वरखेडे, का० स० वाणी प्रगत अध्ययन संस्था, धुळे.  
हिंदू संस्कृती आणि स्त्री, आ० ह० साळुंखे, लोकवाङ्मय गृह, मुंबई.  
मायवाटेचा मागोवा, तारा भवाळकर.

सत्र : ४

अभ्यासपत्रिका क्रमांक १४ : ३ – फुले-आंबेडकरवादी साहित्य

उद्दिष्ट : १९९० नंतर वर्ण, जात, वर्ग, लिंगभाव अधिष्ठित शोषकव्यवस्थेच्या अंतासाठीचे तत्त्वज्ञान म्हणून फुले-आंबेडकरांच्या विचारप्रवाहाचा उदय झालेला दिसतो. जागतिकीकरणाच्या गुंतागुंतीपूर्ण वास्तवात विशेषतः भारतीय समाज, साहित्य आणि संस्कृती संदर्भात सदर विचारप्रणालीचे महत्त्व अनन्य आहे. त्याचा परिचय व्हावा आणि योगदान स्पष्ट व्हावे हा सदर अभ्यासपत्रिका सुरू करण्यामागील प्रमुख उद्देश आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) फुलेवाद तत्त्व आणि विचारप्रणाली.

आ) आंबेडकरवाद तत्त्व आणि विचारप्रणाली.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

फुले-आंबेडकरवादी साहित्यप्रेरणा आणि स्वरूप.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

कादंबरी-‘विषवृक्षाच्या मुळ्या’, वासुदेव मुलाटे.

दीर्घकविता-‘आरपार लयीत प्राणांतिक’, प्रज्ञा दया पवार.

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

कसबे, रावसाहेब; आंबेडकरवाद : तत्त्व आणि व्यवहार, सुगावा प्रकाशन, पुणे.

पाटील, शरद; मार्क्स-फुले-आंबेडकरवाद, सुगावा प्रकाशन, पुणे.

गायकवाड, सुधाकर; माणूस त्याचा समाज आणि बदल : डॉ० आंबेडकरांचे सिद्धान्त, सृजन प्रकाशन, मुंबई.

शेरे, नीळकंठ; आंबेडकरवाद, सुविद्या प्रकाशन, पुणे.

पानतावणे, गंगाधर; पत्रकार डॉ० बाबासाहेब आंबेडकर, प्रतिमा प्रकाशन, पुणे.

सत्र : ४

**अभ्यासपत्रिका क्रमांक १४ : ४ – आदिवासी संस्कृती, कला आणि साहित्य**

उद्दिष्ट : आदिवासींच्या जीवनाची व्याप्ती आदिम आणि फार व्यापक असून भारतीय समाजव्यवस्थेचे आणि संस्कृतीचे मूळ त्यात आहे. मूलतः भारतीय समाजव्यवस्था ही मातृसत्ताक होती. वर्णसंकरानंतर तिने पुरुषसत्तेचे रूप धारण केले आणि त्यानंतर नव्या शोषणाच्या भारतीय समाजजीवनाचा इतिहास, संस्कृतीचे स्थित्यंतर रचले गेले. आदिवासींचा म्हणता येईल असा धर्मही त्यावेळी पृथ्वीच्या पाठीवर नांदत होता. मूलतः आदिवासी समाजव्यवस्था, संस्कृती ही निसर्गाधारित व मानवताकेंद्री होती आणि त्याचे प्रतिबिंब आदिवासींच्या लोकसाहित्यात आढळते. एकूणच भारतीय मूळ समाजव्यवस्था, संस्कृतीचा अभ्यास आजच्या जागतिकीकरणाच्या पार्श्वभूमीवर विद्यार्थ्यांना व्हावा असा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) आदिवासी संस्कृती-परंपरा (आदिम व वर्तमान).

ब) आदिवासी धर्मकल्पना (निसर्गधर्म व वर्तमान विधिधर्मकल्पना. उदाहरणार्थ, गोंडवानांच्या भारत, आफ्रिका, अंटार्क्टिका, ऑस्ट्रेलिया व दक्षिण अमेरिका या पाच महाखंडांचा धर्म, बिरसाधर्म, सरनाधर्म (कोयतूर किंवा गोंडी धर्म).

घटक २) व्याख्याने-२०, श्रेयांकन-०२

आदिवासी विविध जमातींचे कलाजीवन

अ) संगीत (कल्पना, वाद्ये व विशेष).

ब) वास्तुकला (परंपरा, स्वरूप व विशेष).

क) शिल्पकला (परंपरा, स्वरूप व विशेष).

ड) चित्रकला – वारली व गोंडी (परंपरा, स्वरूप व विशेष).

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

आदिवासी लोकसाहित्य

अ) आदिवासी लोकसाहित्याचे स्वरूप व संकल्पना.

ब) आदिवासी लोकगीते (कल्पनाविश्व, प्रकार व विशेष).

क) आदिवासी लोककथा (कल्पनाविश्व, प्रकार व विशेष).

ड) आदिवासी लोकनाट्य (परंपरा, प्रकार व विशेष).

अंतर्गत परीक्षा-एकूण गुण ४०

१. लेखी परीक्षा २० गुण

२. प्रकल्प लेखन २० गुण (पैकी – प्रकल्प लेखन : १० गुण व प्रकल्पावर आधारित तोंडी परीक्षा : १० गुण)

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर १५-१५ गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

आदिवासी लोकपरंपरा, माहेश्वरी गावित, चिन्मय प्रकाशन, औरंगाबाद.

आदिवासी कला, गोविंद गारे व उत्तमराव सोनवणे, श्रीविद्या प्रकाशन, पुणे.

आदिवासी लोकनृत्य लय, ताल आणि सूर, गोविंद गारे, कॉन्टिनेन्टल प्रकाशन, पुणे.

सह्याद्रीच्या दऱ्याखोऱ्यातील ठाकूर आदिवासी, गोविंद गारे, श्रीविद्या प्रकाशन, पुणे.

मानवी संस्कृतीचा इतिहास, आर० के० परळकर, किताब महल, नागपूर.

आदिवासी साहित्य आणि लोककला, (संपा०) शत्रुघ्न फड.

कोणे एके काळी सिंधु संस्कृती, मधुकर केशव ढवळीकर, राजहंस प्रकाशन, पुणे.

आदिवासींचे सण उत्सव, सरोजिनी बाबर, महाराष्ट्र राज्य लोकसाहित्य माला, पुष्प २४.

गोंड, संजय साळुंखे, संवेदन प्रकाशन, औरंगाबाद.

गोंडवाना, जीव जगत की उत्पत्ती, उत्थान, पतन और पुनरुत्थान, संघर्ष, चंद्रलेखा कंगाली.

गोंडों का मूल निवास स्थल परिचय, मोतीराम कंगाली.

भील जनजीवन और संस्कृती, अशोक पाटील, मध्यप्रदेश हिंदी ग्रंथ अकादमी.

Warli of Thana, A. M. Ghatage, The Maharashtra State Board for Literature and Culture.

Understanding Tribal Religion, Migang Tamo, Sarit Chaudhuri.

The Gonds Genesis History and Culture, Paul Anuradha.

सत्र : ४

अभ्यासपत्रिका क्रमांक १५ : १ – प्रसारमाध्यमे आणि भाषाव्यवहार

(Mass media and Usage of Marathi Language)

उद्दिष्ट : भाषाव्यवहार हा साहित्याव्यतिरिक्त अन्य क्षेत्रांमध्येही महत्वाचा असतो. आधुनिक युगात प्रसारमाध्यमांचे स्वरूप व प्रकार बदलले आहेत. प्रसारमाध्यमांनुसार भाषेच्या उपयोजनाची विविध कौशल्ये विद्यार्थ्यांना ज्ञात व्हावी तसेच ती त्यांनी आत्मसात करून त्याआधारे प्रत्यक्ष उपयोजन करावे हा या अभ्यासपत्रिकेचा हेतू आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) प्रसारमाध्यमे म्हणजे काय – पारंपरिक प्रसारमाध्यमे आणि आधुनिक प्रसारमाध्यमे.

ब) प्रसारमाध्यमांचा समाजावर होणारा परिणाम, प्रसारमाध्यमांचा विकास.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) प्रसारमाध्यमांचे प्रकार – मुद्रितप्रसारमाध्यमे (वृत्तपत्रे आणि नियतकालिके).

ब) दृक् आणि श्राव्य प्रसारमाध्यमे – नभोवाणी, दूरचित्रवाणी, इंटरनेट.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

अ) श्राव्य माध्यमाचे स्वरूप व महत्त्व, कार्यक्रमांचे विविध प्रकार, उद्दिष्ट्ये, कार्यक्रमाची पूर्वतयारी आणि सादरीकरण.

ब) दूरचित्रवाणी माध्यमाचे स्वरूप – विस्तार, कार्यक्रमांचे प्रकार. लेखन, संशोधन आणि प्रसारण इत्यादी.

अंतर्गत परीक्षा : एकूण ४० गुण.

विद्यार्थ्यांनी पुढीलपैकी कोणतेही दोन घटक निवडून त्यावर दोन प्रकल्प सादर करावेत.

१) मुलाखत, २) ग्रंथपरीक्षण, ३) चित्रपटपरीक्षण, ४) नाट्यपरीक्षण, ५) विकिपीडियावर एखाद्या विषयाची निवड करून लेख लिहिणे व त्यावर तो नोंदविणे, ६) दूरचित्रवाणीसाठी बातमीलेखन, ७) आकाशवाणीसाठी बातमीलेखन, ८) एखाद्या विशिष्ट विषयावरील ज्ञानकोश, विश्वकोश, एन्साक्लोपीडिया ब्रिटानिका व तत्सम कोशांमधील नोंदींचा अभ्यास करून त्याआधारे स्वतंत्र संशोधन करून नवीन नोंद तयार करणे, ९) वरील विषयांव्यतिरिक्त अभ्यासक्रमातील घटक न निवडता विषयशिक्षकाने विद्यार्थ्यांकडून दोन प्रकल्प तयार करून घेणे.

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर २०-२० गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

१. देव, सदाशिव; कोशवाङ्मय विचार आणि व्यवहार, सुवर्ण प्रकाशन, २००२.

२. मराठी अभ्यास परिषद पत्रिका, 'भाषा आणि जीवन', त्रैमासिक.

३. नसिराबादकर, ल० रा०, व्यावहारिक मराठी.

४. गर्गे, स० मा०, पत्र आणि पत्रकारिता, मानसन्मान प्रकाशन, १९९९.



सत्र : ४

**अभ्यासपत्रिका क्रमांक १५ : २ – भाषांतरकौशल्ये**

उद्दिष्ट : भाषांतराच्या विविध प्रकारांमध्ये ललित वाङ्मयातील भाषांतर कौशल्य आत्मसात करणे हा हेतू सदर अभ्यासपत्रिकेच्या मुळाशी आहे. एखाद्या साहित्यकृतीचे भाषांतर करताना त्या साहित्यातील भाषारूपाची वैशिष्ट्ये पुननिर्मितीमध्ये किती प्रभावीपणे व्यक्त झालेली आहेत, त्यातील भाषिक, शैलीविषयक अडचणी जाणून घेणे, उत्तम भाषांतराचे महत्त्व जागतिकीकरणामध्ये समजावून घेणे तसेच विद्यार्थ्यांनीही स्वतः भाषांतर करणे याठिकाणी अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) भाषांतराचे स्वरूप व व्याख्या.

ब) भाषांतर व्यवहारातील महत्त्वाचे प्रश्न – भाषांतर-एक दुय्यम कृती, भाषांतरातील सममूल्यता, भाषांतरणीयता, भाषांतराचे स्वरूप-भाषिक की सांस्कृतिक.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) भाषांतरातील भाषिक व शैलीविषयक अडचणी.

ब) भाषांतरातील सांस्कृतिक अडचणी.

क) भाषांतराचे जागतिकीकरणात महत्त्व.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

पुढील भाषांतरांचा घटक १ व २च्या अनुषंगाने प्रत्यक्ष अभ्यास.

१) तुकारामांचे अभंग – ६ (Says Tuka by Dilip Chitre) १९९१.

१. पहिली माझी ओवी (४३५७) (My first verse, p. 24)

२. बरे जाले देवा निघाले दिवाळे (१२३५) (Good for me God I am broke, p. 40)

३. सुंदर ते ध्यान उभे विटेवरी () (In an exquisite trance, p. 61 )

४. स्थिरावली वृत्ति पांगुळला प्राण (४१५९) (The mind is setteled, p. 176)

५. जे का रंजले गांजले (३४७) (He who identifies, p. 150)

६. जेथे जातो तेथे तू माझा सांगाती (२०००) (Whenever I go, p. 157)

२) 'ओल्ड मॅन अँड द सी' याचा पु० ल० देशपांडे यांनी केलेला अनुवाद 'एका कोळियाने'.

३) रावीपार या संग्रहातील 'रावीपार' व 'फाळणी' या कथांचा मराठी अनुवाद. (अनु०) मोहन वेल्हाळ, मेहता पब्लि०, पुणे.

अंतर्गत परीक्षा-एकूण गुण ४०

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर २०-२० गुणांचे चार प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भ :

सत्र : ४

**अभ्यासपत्रिका क्रमांक १५ : ३ – ग्रंथव्यवहार**

उद्दिष्ट : ग्रंथनिर्मितीसह ग्रंथव्यवहार आणि प्रकाशन या संदर्भातील ज्ञान विद्यार्थ्यांना देणे हा सदर अभ्यासपत्रिकेचा हेतू आहे. हा अभ्यास करताना विविध विषयांनुसार उपलब्ध झालेली हस्तलिखित, त्याची अंतिम मुद्रणप्रत तयार करणे, प्रत्यक्ष प्रकाशन व्यवहार तसेच वितरणव्यवहार यांतील ज्ञान व कौशल्ये विद्यार्थ्यांनी आत्मसात करणे अभिप्रेत आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

प्रकाशन व्यवसाय

अ) परिचय आणि स्वरूप

ब) पुस्तकांचे प्रकार

क) पुस्तकांचे विश्व

घटक २) व्याख्याने-२०, श्रेयांकन-०२

संपादन

(प्रकाशन संस्थेचे ध्येयधोरण, कार्यवाही, हस्तलिखितांची निवड, लेखकांना नव्या पुस्तकांचे विषय देऊन लिहून घेणे, संहिता निवड इत्यादी.)

मुद्रण व मांडणी

(मुद्रणप्रत तयार करणे, मजकूर तपासणे, शुद्धलेखन तपासणे, चित्रे-आलेख-नकाशे यांची मांडणी करणे, मुखपृष्ठ व मलपृष्ठ तयार करवून घेणे इत्यादी.)

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

वितरण यंत्रणेचे कार्य

विक्री आणि आर्थिक देवाण-घेवाण

(प्रकाशन करणे, प्रसिद्धी देणे, विक्री विभागाला मार्गदर्शन करणे, वाचक मेळावा, ग्रंथप्रदर्शन सवलत, हिशेब ठेवणे इत्यादी.)

ई-बुक्स : प्रकाशन, व्यवसाय आणि विक्री.

अंतर्गत परीक्षा-एकूण गुण ४०

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर २०-२० गुणांचे तीन प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ

ग्रंथव्यवहार, अ० ह० लिमये, व्हीनस बुक स्टॉल, पुणे.

मराठी प्रकाशनांचे स्वरूप : प्रेरणा व परंपरा, (संपा०) अ० ह० लिमये, प्रसाद प्रकाशन, पुणे.

मराठी ग्रंथनिर्मितीची वाटचाल, शं० गो० तुळपुळे, महाराष्ट्र ग्रंथोत्तेजक संस्था, पुणे.

प्रकाशन व्यवसाय परिचय, शरद गोगटे, अखिल भारतीय मराठी प्रकाशक संघ, पुणे.

पॉप्युलर रीतिपुस्तक, रामदास भटकळ व मृदुला जोशी,

सत्र : ४

**अभ्यासपत्रिका क्रमांक १५ : ४ – मालिका पटकथालेखन**

उद्दिष्ट : माध्यमक्रांतीनंतर मोठ्या प्रमाणात दूरचित्रवाणी मालिका निर्माण होऊ लागल्या व त्यांनी लोकप्रियताही मिळवली. इंटरनेटच्या प्रसारानंतर गेल्या काही वर्षांत वेबमालिकाही लोकप्रियता मिळवू लागल्या. बदलत्या काळानुसार व व्यावसायिक कौशल्ये विद्यार्थ्यांना आत्मसात करता यावीत या दृष्टिकोनातून 'मालिका पटकथालेखन' या अभ्यासपत्रिकेची निर्मिती करण्यात आली आहे. पटकथालेखनाची किमान कौशल्ये विद्यार्थ्यांनी आत्मसात करावीत हा दृष्टिकोन यामागे आहे.

घटक १) व्याख्याने-२०, श्रेयांकन-०२

अ) दूरचित्रवाणी व वेबमालिका : स्वरूप आणि वैशिष्ट्ये.

आ) दूरचित्रवाणी व वेबमालिकांचे विविध घटक.

घटक २) व्याख्याने-२०, श्रेयांकन-०२

अ) दूरचित्रवाणी मालिका व वेबमालिका पटकथा : स्वरूप आणि वैशिष्ट्ये.

आ) वेबमालिकांच्या पटकथा : लेखनतंत्र, संरचना आणि पटकथेचे विविध घटक.

घटक ३) व्याख्याने-२०, श्रेयांकन-०२

प्रत्यक्ष पटकथांचा अभ्यास.

अ) उंच माझा झोका निवडक २५ भाग.

आ) गंगाधर टिपरे मालिकेचे पंचवीस भाग.

अंतर्गत परीक्षा – ४० गुण

विषय शिक्षकाने कथाबीज निवडून त्याआधारे एखाद्या दूरचित्रवाणी मालिकेचे वेबमालिकेचे किमान १५ व कमाल २५ भागांचे लेखन करून घेणे. अभ्यासक्रमास लावलेल्या पटकथांव्यतिरिक्त उपलब्ध असणाऱ्या मालिकांच्या पटकथांचा अभ्यास करून त्यावर प्रकल्प तयार करणे. लेखनप्रकाराचे विषय, संबंधित विषय शिक्षकाने निश्चित करून द्यावेत.

सत्रान्त परीक्षा-एकूण गुण ६०

वरील अभ्यासक्रमावर २०-२० गुणांचे तीन प्रश्न पर्यायांसह विचारण्यात येतील.

संदर्भग्रंथ :

संदर्भग्रंथांची यादी नंतर देण्यात येईल.

सत्र : ४

अभ्यासपत्रिका क्रमांक १६ – प्रकल्प लेखन

प्रकल्प लेखनासाठी विषय :

- १) भाषावैज्ञानिक अभ्यास.
- २) समीक्षेचे उपयोजन.
- ३) संशोधन.
- ४) विशिष्ट प्रदेशाचे साहित्य.
- ५) प्रशासनिक मराठी.
- ६) मराठीच्या बोली.

# University of Mumbai



No. AAMS(UG)/49 of 2021-22

## CIRCULAR:-

Attention of the Principals of the Affiliated Colleges and Directors of the Recognized Institutions in Faculty of Humanities is invited to this office circular No. UG/60 of 2018-19, dated 6<sup>th</sup> July, 2018 relating to the revised syllabus as per the (CBCS) of T.Y.B.A. in Hindi - Sem. V & VI.

They are hereby informed that the recommendations made by the Board of Studies in Hindi at its online meeting held on 12<sup>th</sup> April, 2021 vide Item No. 1 and subsequently passed by the Board of Deans at its meeting held on 11<sup>th</sup> June, 2021 vide item No. 5.1 (R) have been accepted by the Academic Council at its meeting held on 29<sup>th</sup> June, 2021 vide item No. 5.1 (R) and that in accordance therewith, the revised syllabus as per the (CBCS) of T.Y.B.A. (Hindi) – Sem V nad VI has been brought into force with effect from the academic year 2021 -22 accordingly. (The same is available on the University's website [www.mu.ac.in](http://www.mu.ac.in)).

MUMBAI – 400 032  
22<sup>nd</sup> September, 2021

  
(Dr. B.N. Gaikwad)  
I/c REGISTRAR

To

The Principals of the Affiliated Colleges the Head of the University Departments and Directors of the Recognized Institutions in Faculty of Humanities. (Circular No. UG/334 of 2017-18 dated 9<sup>th</sup> January, 2018.)

A.C/5.1( R)/29/06/2021

No. AAMS(UG)/49 -A of 2021-22


\*\*\*\*\*

MUMBAI-400 032

22<sup>nd</sup> September, 2021

Copy forwarded with Compliments for information to:-

- 1) The Dean, Faculty of Humanities,
- 2) The Chairman, Board of Studies in Hindi,
- 3) The Director, Board of Examinations and Evaluation,
- 4) The Director, Board of Students Development,
- 5) The Co-ordinator, University Computerization Centre,

  
(Dr. B.N. Gaikwad)  
I/c REGISTRAR

**Copy to :-**

- 1. The Deputy Registrar, Academic Authorities Meetings and Services (AAMS),**
- 2. The Deputy Registrar, College Affiliations & Development Department (CAD),**
- 3. The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Department (AEM),**
- 4. The Deputy Registrar, Research Administration & Promotion Cell (RAPC),**
- 5. The Deputy Registrar, Executive Authorities Section (EA),**
- 6. The Deputy Registrar, PRO, Fort, (Publication Section),**
- 7. The Deputy Registrar, (Special Cell),**
- 8. The Deputy Registrar, Fort/ Vidyanagari Administration Department (FAD) (VAD), Record Section,**
- 9. The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari,**

**They are requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to in the above circular and that on separate Action Taken Report will be sent in this connection.**

- 1. P.A to Hon'ble Vice-Chancellor,**
- 2. P.A Pro-Vice-Chancellor,**
- 3. P.A to Registrar,**
- 4. All Deans of all Faculties,**
- 5. P.A to Finance & Account Officers, (F.& A.O),**
- 6. P.A to Director, Board of Examinations and Evaluation,**
- 7. P.A to Director, Innovation, Incubation and Linkages,**
- 8. P.A to Director, Board of Lifelong Learning and Extension (BLLE),**
- 9. The Director, Dept. of Information and Communication Technology (DICT) (CCF & UCC), Vidyanagari,**
- 10. The Director of Board of Student Development,**
- 11. The Director, Department of Students Welfare (DSD),**
- 12. All Deputy Registrar, Examination House,**
- 13. The Deputy Registrars, Finance & Accounts Section,**
- 14. The Assistant Registrar, Administrative sub-Campus Thane,**
- 15. The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan,**
- 16. The Assistant Registrar, Ratnagiri sub-centre, Ratnagiri,**
- 17. The Assistant Registrar, Constituent Colleges Unit,**
- 18. BUCTU,**
- 19. The Receptionist,**
- 20. The Telephone Operator,**
- 21. The Secretary MUASA**

**for information.**

# UNIVERSITY OF MUMBAI



## **Revised Syllabus for the T.Y.B.A. (Hindi)**

**Semester: Sem V and VI**

(As per the Choice Based Credit System with effect from the academic year  
2021-22)

# UNIVERSITY OF MUMBAI

**Revised Syllabus and Pattern of Question Paper in the Subject of HINDI  
At the T.Y.B.A. EXAMINATION Choice Based Credit System (C.B.C.S.)  
(Paper - IV, V, VI, VII, VIII, IX)  
(With effect from the Academic Year : 2021-2022)**

## हिन्दी अध्ययन मण्डल

अध्यक्ष : डॉ. अनिल  
सिंह

1. डॉ. करुणाशंकर  
उपाध्याय (सदस्य)
2. डॉ. हूबनाथ पाण्डेय  
(सदस्य)
3. डॉ. विद्या शिंदे  
(सदस्य)

## पाठ्यक्रम समिति

समन्वयक : डॉ. मोहसिन  
खान

1. डॉ. सतीश पाण्डेय  
(सदस्य)
2. डॉ. विद्या शिंदे  
(सदस्य)
3. डॉ. रेखा शर्मा  
(सदस्य)



# मुंबई विश्वविद्यालय,

## पाठ्यक्रम का अभिप्राय, उद्देश्य, परिणाम, अध्यापन प्रणालियाँ

### अभिप्राय एवं उद्देश्य- AIMS AND OBJECTIVES:

1. विद्यार्थियों को हिन्दी साहित्य के प्राचीन, मध्यकालीन और आधुनिक इतिहास का बोध कराते हुए हिन्दी साहित्य के इतिहास संबंधी साहित्य के विकासक्रम, प्रवृत्तियों एवं परिवेश का परिचय कराना।
2. विद्यार्थियों को हिन्दी की आधुनिककालीन गद्य-पद्य विधाओं की प्रसिद्ध, प्रचलित रचनाओं एवं परिवेश की जानकारी प्रदान करते हुए दार्शनिक, सामाजिक, राष्ट्रीय, मानवीय और नवीनतम आधुनिक जीवन-शैली संबंधी मूल्यों का परिचय कराना। आधुनिक साहित्य की प्रवृत्तियों के विकास से अवगत कराते हुए साहित्य के सामाजिक, मानवीय सरोकारों के साथ पर्यावरण-चेतना को समृद्ध करना।
3. विद्यार्थियों को पारंपरिक भारतीय काव्यशास्त्र के मानदंडों से परिचय कराते हुए, साहित्य की विभिन्न विधाओं से अवगत कराना, साहित्य के काव्यशास्त्रीय नियमों की जानकारी प्रदान करना।
4. विद्यार्थियों को भाषा के वैज्ञानिक अध्ययन के महत्व से अवगत कराते हुए भाषा विज्ञान की उपयोगिता तथा भाषा एवं लिपि-विज्ञान के विभिन्न अंगों का व्यावहारिक परिचय कराना।
5. जनसंचार, सूचना प्रौद्योगिकी, सोशल मीडिया के अधुनातन माध्यमों में हिन्दी के प्रयोग, प्रसार से अवगत कराते हुए हिन्दी के माध्यम से रोज़गार की संभावनाओं को विद्यार्थियों के समक्ष लाना।
6. सामाजिक परिवर्तन हेतु वैचारिक प्रसार को अवगत कराते हुए विविध नव्य सामाजिक वैचारिक आंदोलनों की पृष्ठभूमि व विविध विमर्शों को दर्शाना तथा साहित्य पर प्रभावों को अवगत कराना।

### परिणाम- OUTCOMES:

1. विद्यार्थी को हिन्दी साहित्य के इतिहास की व्यापक जानकारी प्राप्त होगी, साहित्य की अविरल धारा का परिचय प्राप्त होगा। हिन्दी साहित्य की विभिन्न विधाओं का व्यापक और क्रमबद्ध ज्ञान प्राप्त होगा।

2. विद्यार्थियों में साहित्य के माध्यम से कलात्मक गुणों की अभिवृद्धि होगी, कला की साहित्यिक विधाओं के प्रति अभिरुचि जागृत होगी तथा रचनात्मक-कौशल को बढ़ावा मिलेगा, साहित्य के समकालीन परिवेश से जुड़ सकेंगे, सामाजिक समस्याओं, पक्षों से अवगत होते हुए समाधान की ओर बढ़ सकेंगे।
3. विद्यार्थी जनसंचार, सूचना प्रौद्योगिकी, सोशल मीडिया के अधुनातन माध्यमों में प्रयुक्त हिन्दी-देवनागरी लिपि के अध्ययन, प्रयोग से मीडिया, कोश निर्माण आदि क्षेत्रों में रोज़गार के अवसर प्राप्त कर सकेंगे।
4. विद्यार्थी भारतीय काव्यशास्त्र की व्यापक जानकारी प्राप्त होने के साथ काव्यशास्त्रीय मानदंडों का ज्ञान प्राप्त होगा जिसके माध्यम से विद्यार्थी स्वयं साहित्य-रचना की प्रवृत्ति की ओर प्रेरित हो सकेगा।
5. विद्यार्थी भाषा के विविध रूप तथा भाषा परिवर्तन के कारणों का ज्ञान प्राप्त कर सकेंगे। भाषा विज्ञान के विभिन्न अंगों से परिचित होते हुए उसकी उपयोगिता का ज्ञान प्राप्त कर सकेंगे। विद्यार्थी हिन्दी-ध्वनियों के उच्चारण संबंधी तथा देवनागरी लिपि का वैज्ञानिक ज्ञान को प्राप्त कर सकेंगे।
6. विद्यार्थियों में मानवीय संवेदनाओं के विकास के साथ नवीन सामाजिक, सांस्कृतिक बोध और जीवन मूल्यों का विकास होगा, जिससे विद्यार्थी अधिक उदार, चेतना-सम्पन्न तथा ज़िम्मेदार नागरिक बनेंगे।
7. विद्यार्थियों में नये वैश्विक-मूल्यों के प्रति सजगता को बढ़ावा मिलेगा एवं पर्यावरणीय चेतना के प्रति दायित्व-बोध उत्पन्न होगा।

### अध्यापन प्रणालियाँ- TEACHING METHOD

1. व्याख्यान तथा विश्लेषण।
2. दृश्य/ श्रव्य माध्यमों और संगणक का प्रयोग।
3. राजभाषा अधिकारियों/ जनसंचार माध्यमों से संलग्न व्यक्तियों के अतिथि व्याख्यान।
4. स्वाध्याय/ परियोजना।
5. शैक्षणिक भ्रमण।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) IV
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	V
PAPER NAME	HISTORY OF HINDI LITERATURE हिंदी साहित्य का इतिहास
PAPER NO.	IV

COURSE CODE	UAHIN-501
LACTURE	60
CREDITS & MARKS	CREDITS - 4 & MARKS-100

## प्राचीन एवं मध्यकालीन हिंदी साहित्य का इतिहास

इकाई- I हिंदी साहित्य का इतिहास-

- हिंदी साहित्य का काल-विभाजन
- हिंदी साहित्य का नामकरण

इकाई- II आदिकाल-

- आदिकालीन हिंदी साहित्य की पृष्ठभूमि
- सिद्ध, नाथ, जैन एवं रासो साहित्य की प्रमुख विशेषताएँ

इकाई- III भक्तिकाल-

- भक्तिकालीन हिंदी साहित्य की पृष्ठभूमि
- संत काव्य, सूफी काव्य, रामभक्ति काव्य, कृष्णभक्ति काव्य की सामान्य विशेषताएँ

इकाई- IV रीतिकाल-

- रीतिकालीन हिंदी साहित्य की पृष्ठभूमि
- रीतिबद्ध, रीतिसिद्ध एवं रीतिमुक्त काव्य की प्रमुख प्रवृत्तियाँ

निर्धारित वस्तुनिष्ठ प्रश्नों की सूची-

1. हिंदी साहित्य के इतिहास का काल-विभाजन सर्वप्रथम किसने किया?

2. हिंदी साहित्य का इतिहास लेखन का सबसे पहला प्रयास किसका था?
3. आ.रामचंद्र शुक्ल के इतिहास ग्रंथ का नाम क्या है?
4. आदिकाल को 'बीजवपन काल' किस विद्वान ने कहा है?
5. हिंदी साहित्य के प्रारम्भिक काल को 'आदिकाल' नाम किसने दिया?
6. रीतिकाल का 'श्रृंगार काल' नामकरण किसने किया है?
7. राहुल सांकृत्यायन हिंदी का पहला कवि किसे मानते हैं?
8. कवि स्वयंभू किस भाषा के कवि है?
9. किस कवि को 'मैथिल कोकिल' कहा गया है?
10. आदिकाल में खड़ीबोली को काव्य भाषा बनाने वाले प्रथम कवि कौन थे?
11. चौरासी सिद्धों में सबसे ऊँचा स्थान किसका है?
12. 'दोहाकोश' के रचयिता कौन हैं?
13. सिद्धों की भाषा को 'संधा-भाषा' किसने कहा है?
14. नाथ संप्रदाय के प्रवर्तक कौन हैं?
15. नाथों की संख्या कितनी है?
16. 'हठयोग' किस संप्रदाय से संबंधित है?
17. 'उलटबासियाँ' किस साहित्य की एक प्रमुख विशेषता है?
18. जैन धर्म के प्रवर्तक कौन हैं?
19. प्रथम जैन कवि कौन है?
20. जैन साहित्य का सबसे अधिक लोकप्रिय रूप कौन से ग्रंथ माने जाते हैं?
21. 'परमाल रासो' के रचयिता कौन हैं?
22. रासो काव्य परंपरा का सर्वश्रेष्ठ एवं प्रतिनिधि ग्रंथ कौन-सा है?
23. 'भरतेश्वर बाहुबली रास' के रचनाकार कौन है?
24. 'खुमान रासो' किसकी रचना है?
25. 'युद्धों का सजीव वर्णन' किस साहित्य की एक प्रमुख विशेषता है?
26. भक्तिकाल की दो काव्यधाराएँ कौन-सी हैं?
27. जाति-पाति के बंधनों का खुलकर विरोध किसने किया?
28. 'राजतरंगिणी' में किसका इतिहास वर्णित है?

29. रत्नसेन किस महाकाव्य का नायक है?
  30. भक्ति की लहर का उद्भव कहाँ से हुआ था?
  31. चैतन्य सम्प्रदाय के प्रवर्तक कौन हैं?
  32. आलवार भक्तों की संख्या कितनी है?
  33. स्वामी हरिदास किस सम्प्रदाय के प्रवर्तक थे?
  34. बहुदेववाद तथा अवतारवाद का विरोध किसने किया?
  35. संतों का रहस्यवाद किससे प्रभावित है?
  36. सुन्दरदास किसके शिष्य थे?
  37. 'मृगावती' के रचयिता कौन हैं?
  38. 'ज्ञानदीप' के रचनाकार का नाम लिखिए?
  39. आईने अकबरी में सूफ़ियों के कितने सम्प्रदाय का उल्लेख है?
  40. पद्मावत काव्य में राघव, चेतन को किस रूप में चित्रित किया गया है?
  41. रामानंद के भक्त सम्प्रदाय का क्या नाम है?
  42. तुलसीदास जी के गुरु का नाम क्या है?
  43. हिन्दी साहित्य के किस काव्य में विराट समन्वय की भावना है?
  44. तानसेन के गुरु का नाम क्या था?
  45. पुष्टिमार्ग के प्रवर्तक कौन हैं?
  46. 'हित चौरासी' रचना के रचयिता कौन हैं?
  47. रीतिकाल को 'रीतिकाल' की संज्ञा किसने दी?
  48. 'हित तरंगिणी' के रचयिता कौन हैं?
  49. 'कविप्रिया' के रचनाकार कौन हैं?
  50. रीतिकाल के अंतिम बड़े आचार्य कौन हैं?
  51. आदिकाल को 'वीरगाथा काल' किस विद्वान ने कहा है?
- |                        |                        |
|------------------------|------------------------|
| i) आ. रामचंद्र शुक्ल   | ii) मिश्रबन्धु         |
| iii) राहुल सांकृत्यायन | iv) डॉ. रामकुमार वर्मा |
52. गार्सा-द-तासी के हिंदी साहित्य के इतिहास की भाषा कौन-सी है?
- |             |           |
|-------------|-----------|
| i) फ्रेंच   | ii) हिंदी |
| iii) फ़ारसी | iv) अरबी  |

53. आदिकाल का प्रमुख रस कौन-सा है?

- i) शृंगार
- ii) वीर
- iii) करुण
- iv) शांत

54. आदिकाल को 'वीर काल' नाम किसने दिया है?

- i) आ. हजारीप्रसाद द्विवेदी
- ii) जॉर्ज ग्रियर्सन
- iii) विश्वनाथप्रसाद मिश्र
- iv) महावीरप्रसाद द्विवेदी

55. गार्सा-द-तासी की इतिहास लेखन परंपरा को आगे बढ़ाने का श्रेय किसे जाता है?

- i) शिवसिंह सेंगर
- ii) जॉर्ज ग्रियर्सन
- iii) आ. रामचंद्र शुक्ल
- iv) मिश्रबन्धु

56. जैन कवि शालीभद्र सूरि को हिन्दी का प्रथम कवि किसने माना है?

- i) राजनाथ शर्मा
- ii) गणपतिचन्द्र गुप्त
- iii) आचार्य शुक्ल
- iv) रामकुमार वर्मा

57. हिंदी साहित्य का आलोचनात्मक इतिहास के लेखक कौन हैं?

- i) डॉ. रामकुमार वर्मा
- ii) डॉ. नगेन्द्र
- iii) डॉ. गणपतिचन्द्र गुप्त
- iv) शिवकुमार शर्मा

58. 'हिंदी साहित्य की भूमिका' पुस्तक के लेखक कौन है?

- i) आ. हजारीप्रसाद द्विवेदी
- ii) बच्चन सिंह
- iii) राहुल सांकृत्यायन
- iv) मिश्रबन्धु

59. 'खालिकबारी' के रचयिता कौन हैं?

- i) अमीर खुसरो
- ii) मुल्ला दाऊद
- iii) चंदबरदाई
- iv) जगनिक

60. सिद्धों की संख्या कितनी मानी जाती है?

- i) 80
- ii) 82
- iii) 84
- iv) 89

61. नाथ पंथ के प्रवर्तक कौन हैं?

- i) गोरखनाथ
- ii) मत्स्येन्द्रनाथ
- iii) नागनाथ
- iv) आदिनाथ

62. कौन-सी शैली जैन रचनाओं की नहीं है?

- i) रास
- ii) फागु
- iii) चर्यापद
- iv) चरित

63. 'बिसलदेव रासो' के रचयिता कौन हैं?
- i) नरपति नाल्ह      ii) दलपति विजय  
iii) हमीर हठ      iv) चंदबरदाई
64. खुसरो की पहेलियों और मुकरियों की विशेषता क्या है?
- i) श्रृंगार      ii) परिहास  
iii) उक्तिवैभिन्य      iv) उक्तिवैचित्र्य
65. भक्ति आंदोलन मुस्लिम साम्राज्य के प्रभाव का परिणाम है।" इस मत को नहीं मानने वाले विद्वान कौन है?
- i) ताराचन्द्र      ii) आ. रामचन्द्र शुक्ल  
iii) रामस्वरूप चतुर्वेदी      iv) वल्लभाचार्य
66. उत्तरी भारत में भक्ति आंदोलन की त्रिमूर्ति कौन थे?
- i) कबीर, नानक, दादू      ii) कबीर, नानक, रैदास  
iii) कबीर, रामानंद, रैदास      iv) कबीर, रामानंद, शंकराचार्य
67. 'बीजक' किसकी प्रसिद्ध रचना है?
- i) सूरदास      ii) कबीर  
iii) जायसी      iv) दयाल
68. "संतन को कहा सीकरी सो काज" किसकी पंक्ति है?
- i) कुंभनदास      ii) नाभादास  
iii) चतुर्भुजदास      iv) तुलसीदास
69. नानक किस काव्यधारा के कवि हैं?
- i) सूफ़ी काव्य      ii) राम काव्य  
iii) संत काव्य      iv) कृष्ण काव्य
70. "मानुष प्रेम भयउ बैकुंठी" किस कवि की पंक्ति है?
- i) दादू दयाल      ii) मुल्ला दाउद  
iii) कुतुबन      iv) जायसी
71. 'भ्रमरगीत' के रचयिता कौन हैं?
- i) तुलसीदास      ii) बिहारी  
iii) सूरदास      iv) कबीरदास
72. सैयद इब्राहिम ने कृष्णभक्ति के प्रभाववश अपना नाम रख लिया?
- i) कृष्णदास      ii) रामदास

73. 'पुष्टिमार्ग का जहाज' किस कवि को कहा गया है?

iii) केशवदास                      iv) सूरदास

i) बीरबल                      ii) रहीम

75. नामदेव द्वारा लिखित सगुण पदों की भाषा क्या थी?

iii) ब्रजभाषा                      iv) संस्कृत

i) रामानंद                      ii) मध्वाचार्य

77. निर्गुण भक्ति साहित्य को ज्ञानाश्रयी और प्रेमाश्रयी भागों में विभाजित करने वाले विद्वान कौन हैं?

iii) नामवर सिंह      iv) आ. रामचंद्र शुक्ल

78. प्रेमाश्रयी शाखा को सूफी काव्य कहने वाले विद्वान निम्नलिखित में से कौन है?

i) डॉ. रामकुमार वर्मा                      ii) आ. हजारीप्रसाद द्विवेदी

iii) आ. रामचंद्र शुक्ल      iv) डॉ. गणपतिचंद्र गुप्त

79. वल्लभाचार्य ने किसकी उपासना पर बल दिया है?

i) श्रीराम                      ii) गणेश

iii) बालकृष्ण

80. वारकरी सम्प्रदाय की स्थापना किसने की?

i) नामदेव                      ii) कबीर

iii) संत ज्ञानेश्वर      iv) सुंदरदास

81. 'चित्रावली' के रचयिता कौन हैं?

i) कुतुबन                      ii) जायसी

iii) **उसमान**                      iv) **शेख नबी**



82. 'महानुभाव सम्प्रदाय' की स्थापना किसने की है?
- i) रामानंद                      ii) तुलसीदास  
iii) श्रीचक्रधर स्वामी              iv) स्वामी हरिदास
83. नाभदास की भक्तमाला में रामानंद के कितने शिष्य बताए गए हैं?
- i) दस                      ii) बारह  
iii) चौदह                      iv) सोलह
84. 'राधावल्लभ सम्प्रदाय' के प्रवर्तक कौन हैं?
- i) स्वामी हरिदास                      ii) हितहरिवंश  
iii) सूरदास                      iv) वल्लभाचार्य
85. किस काल को ब्रजभाषा का स्वर्ण युग कहा जाता है?
- i) आदिकाल                      ii) भक्तिकाल  
iii) रीतिकाल                      iv) आधुनिक काल
86. रीतिकाल को 'अलंकृतकाल' किसने कहा है?
- i) डॉ. रामकुमार वर्मा                      ii) आ. रामचंद्र शुक्ल  
iii) आ. हजारी प्रसाद द्विवेदी                      iv) मिश्रबंधु
87. 'रसमंजरी' के रचयिता कौन हैं?
- i) चिंतामणि                      ii) केशव  
iii) भिखारीदास                      iv) मतिराम
88. आचार्य शुक्ल ने रीतिकाल का प्रवर्तक किसे माना है?
- i) आचार्य चिंतामणि                      ii) कवि ग्वाल  
iii) केशव                      iv) कृपाराम
89. 'रसराज' के रचयिता कौन हैं?
- i) घनानंद                      ii) मतिराम  
iii) बोधा                      iv) ठाकुर
90. घनानंद को अमर करने वाली रचना का नाम क्या है?
- i) रसराज                      ii) सुजान हित  
iii) कविप्रिया                      iv) ललित ललाम
91. रीतिमुक्त काव्यधारा का अंतिम कवि किसे माना जाता है?
- i) चिंतामणि                      ii) द्विजदेव  
iii) भूषण                      iv) केशव

92. 'ललित ललाम' किसकी रचना है?

- i) घनानंद
- ii) मतिराम
- iii) बोधा
- iv) आलम

93. 'साहित्य लहरी' में किसकी लीला का वर्णन है?

- i) बालकृष्ण
- ii) राधा-कृष्ण
- iii) कृष्ण
- iv) राम-सीता

94. "मैं तो समझती थी की वृन्दावन में कृष्ण के अतिरिक्त कोई दूसरा पुरुष है ही नहीं, पर अब पता चला यहाँ कोई दूसरा पुरुष भी रहता है।" यह वाक्य किसने कहा है?

- i) राधा
- ii) रुक्मिणी
- iii) मीरा
- iv) यशोदा

95. "निर्गुण कौन देस को बासी?" किसकी पंक्ति है?

- i) सूरदास
- ii) कबीरदास
- iii) तुलसीदास
- iv) मीराबाई

96. "बिगरी बात बने नहीं, लाख करो किन कोय।" पंक्ति के कवि कौन है?

- i) बिहारी
- ii) रहीम
- iii) आलम
- iv) मतिराम

97. रीतिमुक्त काव्य धारा के प्रमुख कवि इनमें से कौन है?

- i) बिहारी
- ii) देव
- iii) घनानंद
- iv) पद्माकर

98. 'रामचंद्रिका' के रचयिता का नाम क्या है?

- i) तुलसीदास
- ii) भिखारीदास
- iii) नाभादास
- iv) केशवदास

99. पद्माकर इनमें से किस काव्यधारा के कवि है?

- i) रीतिबद्ध
- ii) रीतिसिद्ध
- iii) रीतिमुक्त
- iv) सूफ़ी

100. स्वच्छंद प्रेम के गायक कौन हैं?

- i) वृंद
- ii) आलम
- iii) देव
- iv) मतिराम

नमूना प्रश्न पत्र

Semester – V

Course – IV

समय: 3:00 घंटे  
100

पूर्णांक:

सूचना : 1. अंतिम प्रश्न अनिवार्य है।  
2. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. हिंदी साहित्य के इतिहास के काल-विभाजन पर विस्तार से प्रकाश डालिए। 20

अथवा

आदिकाल के नामकरण के संबंध में विभिन्न विद्वानों के मत स्पष्ट कीजिए।

प्रश्न 2. हिंदी साहित्य की आदिकालीन परिस्थितियों का सामान्य परिचय दीजिए। 20

अथवा

नाथ साहित्य की प्रमुख विशेषताओं को स्पष्ट कीजिए।

प्रश्न 3. सूफी काव्य की सामान्य विशेषताओं पर प्रकाश डालिए। 20

अथवा

कृष्णभक्ति काव्य की प्रमुख विशेषताओं को स्पष्ट कीजिए।

प्रश्न 4. रीतिकालीन साहित्य की परिस्थितियों पर प्रकाश डालिए। 20

अथवा

रीतिबद्ध काव्यधारा की प्रमुख प्रवृत्तियाँ स्पष्ट कीजिए।

प्रश्न 5. क) किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 10

1. आ. रामचन्द्र शुक्ल का काल-विभाजन।
2. सिद्ध काव्य।
3. संत काव्य।
4. रीतिमुक्त काव्य।

ख) वस्तुनिष्ठ प्रश्न- 05

1. आदिकाल को 'बीजवपन काल' किस विद्वान ने कहा है?
2. नाथ संप्रदाय के प्रवर्तक कौन हैं?
3. भक्तिकाल की दो काव्यधाराएँ कौन-सी हैं?
4. 'मृगावती' के रचयिता कौन हैं?
5. रीतिकाल के अंतिम बड़े आचार्य कौन हैं?

ग) विकल्प प्रश्न- 05

1. आदिकाल को 'वीरगाथा काल' किस विद्वान ने कहा है?
  - i) आ. रामचंद्र शुक्ल
  - ii) मिश्रबन्धु
  - iii) राहुल सांकृत्यायन
  - iv) डॉ. रामकुमार वर्मा
2. 'खालिकबारी' के रचयिता कौन हैं?
  - i) अमीर खुसरो
  - ii) मुल्ला दाऊद
  - iii) चंदबरदाई
  - iv) जगनिक
3. नानक किस काव्यधारा के कवि हैं?
  - i) सूफ़ी काव्य
  - ii) राम काव्य
  - iii) संत काव्य
  - iv) कृष्ण काव्य
4. 'पुष्टिमार्ग का जहाज़' किस कवि को कहा गया है?
  - i) कबीरदास
  - ii) तुलसीदास
  - iii) केशवदास
  - iv) सूरदास
5. आचार्य शुक्ल ने रीतिकाल का प्रवर्तक किसे माना है?

i) आचार्य चिंतामणि  
iii) केशव

ii) कवि ग्वाल  
iv) कृपाराम

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) IV
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	VI
PAPER NAME	HISTORY OF MODERN HINDI LITERATURE आधुनिक हिंदी साहित्य का इतिहास
PAPER NO.	IV
COURSE CODE	UAHIN-601
LACTURE	60
CREDITS & MARKS	4 & 100

### आधुनिक हिंदी साहित्य का इतिहास

इकाई- I (क) आधुनिक हिंदी कविता का विकास-

● आधुनिक काल – हिंदी साहित्य की पृष्ठभूमि एवं प्रवृत्तियों का सामान्य परिचय

- भारतेन्दु युग
- द्विवेदी युग
- छायावाद

इकाई- II

- प्रगतिवाद
- प्रयोगवाद
- नई कविता
- समकालीन कविता

इकाई- III (ख) आधुनिक हिंदी साहित्य की गद्य विधाओं का विकास-

- उपन्यास
- कहानी
- आलोचना

इकाई- IV

- आत्मकथा
- जीवनी
- संस्मरण

**निर्धारित वस्तुनिष्ठ प्रश्नों की सूची-**

1. 'कविवचन सुधा' मासिक पत्रिका के संपादक कौन थे?
2. भारतेन्दु युग को 'पुनर्जागरण काल' की संज्ञा किसने दी है?
3. "पपीहा जब पूछिहे पीव कहाँ" काव्य पंक्ति किस कवि की है?
4. 'सुकवि' की उपाधि भारतेन्दु युग के किस कवि को प्राप्त हुई थी?
5. सन् 1903 में 'सरस्वती' पत्रिका के संपादक कौन बने?
6. 'यशोधरा' प्रबंध काव्य के रचनाकार कौन है?
7. आधुनिक काल में लिखा गया खड़ी बोली का प्रथम महाकाव्य कौन-सा है?

8. 'पुष्प की अभिलाषा' कविता के कवि कौन हैं?
9. 'कामायनी' में किस दर्शन की अभिव्यक्ति हुई है?
10. 'आधुनिक काल की मीरा' किसे कहा जाता है?
11. 'प्रकृति के सुकुमार कवि' किसे कहा गया है?
12. 'जूही की कली' कविता के रचनाकार कौन हैं?
13. 'मधुशाला' किसकी काव्य कृति है?
14. 'भारतीय प्रगतिशील लेखक संघ' के लखनऊ में सम्पन्न पहले अधिवेशन के अध्यक्ष कौन थे?
15. 'क्रांति की भावना' किस कविता की एक प्रमुख विशेषता है?
16. 'प्रेत का बयान' किसकी कविता है?
17. 'आज देश की मिट्टी बोल उठी है' किस कवि की रचना है?
18. 'हरी घास पर क्षण भर' कविता के रचनाकार कौन है?
19. 'अँधेरे में' लंबी कविता किसने लिखी है?
20. 'संसद से सड़क तक' काव्य संग्रह किस कवि ने लिखा है?
21. हिंदी का प्रतिनिधि ग़ज़लकार किसे माना जाता है?
22. 'छन्दशती' के रचयिता कौन है?
23. 'मछलीघर' किसकी कृति है?
24. 'अपनी केवल धार' काव्य-संग्रह किसका है?
25. 'बाघ' कविता किस कवि ने लिखी है?
26. भारतेन्दु के नाटक 'प्रेम जोगनी' में किस प्रकार की समस्या है?
27. प्रसाद जी के नाटकों को दुखांत या सुखांत न कहकर क्या कहा गया?
28. हिंदी का प्रथम गीतिनाटक कौन-सा है?
29. 'स्वर्ग की झलक' नाटक के रचनाकार कौन हैं?
30. 'डॉक्टर' नाटक के लेखक कौन हैं?
31. 'बिना दीवारों का घर' नाटक के रचयिता कौन हैं?
32. गोपालराम गहमरी जी ने अधिकतर किस प्रकार के उपन्यास लिखे?
33. गहमरी के जासूसी उपन्यासों का आधार कौन-से उपन्यास थे?
34. 'आखिरी दाँव' उपन्यास के लेखक कौन हैं?

35. 'अपने अपने अजनबी' उपन्यास पर किस दर्शन का प्रभाव है?
36. 'सोया हुआ जल' उपन्यास के लेखक कौन हैं?
37. शैलेश मटियानी के 'छोटे-छोटे पक्षी' उपन्यास में किस महानगर का चित्रण है?
38. 'साँप और सीढ़ी' उपन्यास के लेखक कौन हैं?
39. सुरेंद्र तिवारी की 'वार्ड न. २' कहानी में किसका वर्णन है?
40. 'काला शुक्रवार' कहानी की लेखिका कौन हैं?
41. 'कवि और कविता' के निबंधकार कौन हैं?
42. 'मेरा चौदहवा जन्म दिवस' किस प्रकार का निबंध हैं?
43. 'अर्ध नारीश्वर' निबंध संग्रह के लेखक कौन हैं?
44. नंददुलारे वाजपेयी जी के निबंध अधिकतर किस प्रकार के हैं?
45. हिंदी साहित्य में किसे आलोचना सम्राट कहा जाता है?
46. आलोचना के क्षेत्र में शुक्ल संस्थान के प्रथम मुख्य स्तंभ कौन हैं?
47. संस्मरण और रेखाचित्र की विधा को समृद्ध बनाने में किसका महत्वपूर्ण योगदान है?
48. पंत की जीवनी की रचनाकर हैं?
49. हिंदी की प्रथम आत्मकथा 'अर्द्धकथा' किसकी है?
50. हिंदी साहित्यकारों में सर्वप्रथम किसने अपनी आत्मकथा लिखी?
51. आधुनिक हिंदी साहित्य का प्रवर्तक किसे माना जाता है?
- i) प्रतापनारायण मिश्र                      ii) भारतेन्दु
- iii) प्रेमघन                                      iv) बालकृष्ण भट्ट
52. समस्यापूर्ति परक काव्य रचना किस युग की विशेषता है?
- i) द्विवेदी युग                                      ii) छायावाद
- iii) भारतेन्दु युग                                      iv) प्रगतिवाद
53. भारतेन्दु युग की एक निम्नलिखित विशेषता कौन-सी है?
- i) देशभक्ति और राजभक्ति      ii) आदर्शवाद
- iii) इतिवृत्तात्मकता                      iv) वैयक्तिकता
54. 'साकेत' किसके जीवन पर आधारित है?
- i) सीता                                      ii) उर्मिला
- iii) अहल्या                                      iv) रूमा



55. 'जागरण या सुधार काल' नाम से किस युग को जाना जाता है?

- i) भारतेन्दु
- ii) द्विवेदी
- iii) प्रयोगवाद
- iv) प्रगतिवाद

56. निम्नलिखित में से कौन द्विवेदी युग के कवि है?

- i) जयशंकर प्रसाद
- ii) अज्ञेय
- iii) मैथिलीशरण गुप्त
- iv) निराला

57. निम्नलिखित में से कौन-सी रचना हरिऔध की है?

- i) प्रिय प्रवास
- ii) साकेत
- iii) लहर
- iv) उर्वशी

58. इनमें से कौन-सा कवि छायावादी है?

- i) अज्ञेय
- ii) मुक्तिबोध
- iii) धूमिल
- iv) जयशंकर प्रसाद

59. 'सरोज स्मृति' किसकी रचना है?

- i) प्रसाद
- ii) निराला
- iii) सुमित्रानंदन पंत
- iv) महादेवी वर्मा

60. 'मैं नीर भरी दुख की बदली' किसकी उक्ति है?

- i) सुमित्रानंदन पंत
- ii) महादेवी वर्मा
- iii) दिनकर
- iv) निराला

61. 'कामायनी' महाकाव्य किसने लिखा है?

- i) नागार्जुन
- ii) जयशंकर प्रसाद
- iii) नरेंद्र शर्मा
- iv) त्रिलोचन

62. निम्नलिखित में से छायावादी काव्य की प्रमुख विशेषता कौन-सी है?

- i) वैयक्तिकता
- ii) क्रांति का आह्वान
- iii) क्षणवाद
- iv) शिल्प की नवीनता

63. प्रगतिवाद किस दर्शन से प्रभावित है?

- i) अस्तित्ववाद
- ii) गाँधीवाद
- iii) छायावाद
- iv) मार्क्सवाद

64. 'मूल्य-वृद्धि का सिद्धांत' किस विचारक का है?

- i) रुसो
- ii) टॉलस्टॉय

- iii) कार्ल मार्क्स                      iv) अरस्तू
- 65) इनमें से प्रगतिवाद की प्रमुख विशेषता क्या है?
- i) व्यक्तिवाद                              ii) शोषकों प्रति घृणा
- iii) सौंदर्य भावना                      iv) रहस्यवाद
66. निम्नलिखित में से कौन प्रगतिवादी कवि है?
- i) महादेवी वर्मा                      ii) अज्ञेय
- iii) दिनकर                              iv) हरिवंशराय बच्चन
67. 'कुकुरमुत्ता' कविता किस कवि की है?
- i) नागार्जुन                              ii) श्रीकांत वर्मा
- iii) मुक्तिबोध                              iv) निराला
68. प्रयोगवाद के प्रवर्तक कवि कौन है?
- i) अज्ञेय                              ii) धूमिल
- iii) रांगेय राघव                      iv) नरेश मेहता
69. प्रयोगवादी काव्यधारा का प्रारंभ किस पुस्तक के प्रकाशन से माना जाता है?
- i) तार सप्तक                              ii) दूसरा सप्तक
- iii) तीसरा सप्तक                              iv) चौथा सप्तक
70. प्रयोगवादी कविता कि निम्नलिखित कौन-सी प्रमुख विशेषता है?
- i) लघु मानव                              ii) शिल्प की नवीनता
- iii) नगर बोध                              iv) ग्राम बोध
71. निम्नलिखित में से कौन नई कविता का कवि हैं?
- i) लक्ष्मीकांत वर्मा                      ii) नीरज
- iii) देवेंद्र शर्मा                              iv) अंचल
72. 'लघु मानव बोध' यह किस कविता की विशेषता है?
- i) छायावाद                              ii) नवगीत
- iii) प्रगतिवाद                              iv) नई कविता
73. निम्नलिखित में से कौन-सी कविता मुक्तिबोध की है?
- i) नदी के द्वीप                              ii) अंधेरे में
- iii) जुही की कली                              iv) साँप
74. 'संसद से सड़क तक' किसका काव्य संग्रह है?

- i) अज्ञेय                      ii) शमशेर  
 iii) शिवमंगलसिंह सुमन      iv) धूमिल  
 75. मंगलेश डबराल किस काल की कविता से जुड़े हैं?  
 i) छायावाद                      ii) समकालीन कविता  
 iii) नई कविता                      iv) प्रयोगवाद  
 76. हिंदी का पहला उपन्यास किसे माना जाता है?  
 i) भाग्यवती                      ii) चंद्रकांता  
 iii) परीक्षा गुरु                      iv) नूतन ब्रह्मचारी  
 77. 'सिरकटी लाश' उपन्यास किसका है?  
 i) गोपाल राय                      ii) गोपालराम गहमरी  
 iii) मथुराप्रसाद शर्मा                      iv) गंगा प्रसादगुप्त  
 78. हिंदी उपन्यास सम्राट किसे कहा जाता है?  
 i) यशपाल                      ii) जयशंकर प्रसाद  
 iii) प्रेमचंद                      iv) अमृतलाल नागर  
 79. सूरदास के जीवन पर आधारित उपन्यास का नाम बताइए?  
 i) मानस का हंस                      ii) सेवासदन  
 iii) खंजन नयन                      iv) भाग्यवती  
 80. 'कफ़न' कहानी के कहानीकार कौन हैं?  
 i) जैनेंद्र                      ii) सुदर्शन  
 iii) प्रेमचंद                      iv) कमलेश्वर  
 81. इनमें से भीष्म साहनी की कहानी कौन-सी है?  
 i) चीफ़ की दावत                      ii) प्रतीक्षा  
 iii) मवाली                      iv) नीली झील  
 82. अमृतराय राय किस कहानी के प्रवर्तक हैं?  
 i) सक्रिय कहानी                      ii) अकहानी  
 iii) सहज कहानी                      iv) सचेतन कहानी  
 83. समांतर कहानी आंदोलन किसने चलाया?  
 i) महीप सिंह                      ii) कमलेश्वर  
 iii) दूधनाथ सिंह                      iv) अमरकांत  
 84. हिंदी का पहला नाटक किसे माना जाता है?

- i) शकुंतला                      ii) रुक्मणी हरण  
 iii) चंडी चरित्र                  iv) नहुष
- 85) 'भारत दुर्दशा' किसका नाटक है?  
 i) भारतेन्दु                      ii) बालकृष्ण भट्ट  
 iii) राधाकृष्णदास              iv) प्रतापनारायण मिश्र
86. इनमें से जयशंकर प्रसाद का नाटक कौन-सा है?  
 i) बाल विवाह                      ii) भारत सौभाग्य  
 iii) मालती माधव                  iv) चन्द्रगुप्त
87. वृंदावनलाल वर्मा ने किस प्रकार के नाटक लिखे हैं?  
 i) सामाजिक                      ii) पौराणिक  
 iii) ऐतिहासिक                  iv) प्रतीकवादी
88. हिंदी के प्रथम निबंधकार कौन है?  
 i) आ. रामचंद्र शुक्ल              ii) प्रेमघन  
 iii) बाबू तोताराम                  iv) भारतेन्दु
89. 'चिन्तामणि' किसका निबंध संग्रह है?  
 i) आ. हजारीप्रसाद द्विवेदी      ii) आ. रामचंद्र शुक्ल  
 iii) सरदार पूर्णसिंह              iv) मिश्रबन्धु
90. 'मेरे राम का मुकुट भीग रहा है' किसका प्रसिद्ध निबंध है?  
 i) डॉ. रामविलास शर्मा              ii) रामधारीसिंह दिनकर  
 iii) कन्हैयालाल मिश्र प्रभाकर      iv) पं. विद्यानिवास मिश्र
91. इनमें से कौन ललित निबंधकार है?  
 i) कुबेरनाथ राय                      ii) धर्मवीर भारती  
 iii) ठाकुरप्रसाद सिंह                  iv) श्रीलाल शुक्ल
92. 'चीड़ों पर चाँदनी' यह किसका निबंध संग्रह है?  
 i) शिवप्रसाद सिंह                      ii) विष्णुकांत शास्त्री  
 iii) निर्मल वर्मा                      iv) विवेकी राय
93. हिंदी आलोचना का जनक किसे माना गया है?  
 i) आ. रामचंद्र शुक्ल                  ii) बालकृष्ण भट्ट  
 iii) भारतेन्दु                      iv) हजारीप्रसाद द्विवेदी
94. तुलनात्मक आलोचना के जनक कौन है?

- i) प्रेमघन                      ii) भारतेन्दु  
 iii) रामविलास शर्मा              iv) पद्मसिंह शर्मा
95. हिंदी में वैज्ञानिक आलोचना का सूत्रपात किसने किया?  
 i) आ. रामचंद्र शुक्ल              ii) महावीरप्रसाद द्विवेदी  
 iii) शिवदानसिंह चौहान              iv) रामस्वरूप चतुर्वेदी
96. रीतिकाल की कविता को 'क्षयग्रस्त' किस आलोचक ने कहा है?  
 i) आ. शुक्ल                      ii) नंददुलारे वाजपेई  
 iii) निराला                      iv) डॉ. नगेन्द्र
97. 'सिंहावलोकन' किसकी आत्मकथा है?  
 i) सत्यदेव परिव्राजक              ii) शांतिप्रिय द्विवेदी  
 iii) देवेंद्र सत्यार्थी              iv) यशपाल
98. हिंदी में दलित आत्मकथा के सूत्रपात का श्रेय किसे जाता है?  
 i) मोहनदास नैमिशराय              ii) ओमप्रकाश वाल्मीकि  
 iii) कौशल्या बैसंत्री              iv) माताप्रसाद
99. 'कितने शहरों में कितनी बार' किसकी आत्मकथा है?  
 i) मैत्रेयी पुष्पा                      ii) रमणिका गुप्ता  
 iii) मन्नू भंडारी              iv) ममता कालिया
100. 'आवारा मसीहा' जीवनी के लेखक कौन है?  
 i) विष्णु प्रभाकर                      ii) रामवृक्ष बेनीपुरी  
 iii) जैनेंद्र कुमार              iv) कृष्ण बिहारी मिश्र

### संदर्भ ग्रंथ सूची-

- हिंदी साहित्य का इतिहास – आचार्य रामचंद्र शुक्ल, लोकभारती प्रकाशन, इलाहाबाद।

2. हिंदी साहित्य का इतिहास – डॉ.नगेंद्र (संपादक), मयूर पेपरबैक, नई दिल्ली।
3. हिंदी साहित्य का आदिकाल – आचार्य हजारीप्रसाद द्विवेदी, वाणी प्रकाशन, दिल्ली।
4. हिंदी साहित्य की प्रवृत्तियाँ – डॉ. जयकिशन प्रसाद खंडेलवाल, विनोद पुस्तक मंदिर प्रकाशन, आगरा।
5. हिंदी साहित्य युग और प्रवृत्तियाँ डॉ. – शिवकुमार शर्मा, अशोक प्रकाशन, नई दिल्ली।
6. हिंदी साहित्य का दूसरा इतिहास – डॉ. बच्चन सिंह, लोकभारती प्रकाशन, इलाहाबाद।
7. हिंदी साहित्य का वैज्ञानिक इतिहास – डॉ.गणपतिचंद्र गुप्त, लोकभारती प्रकाशन, इलाहाबाद।
8. हिंदी साहित्य का आलोचनात्मक इतिहास– डॉ.रामकुमार वर्मा,लोकभारती प्रकाशन, इलाहाबाद।
9. हिंदी साहित्य का इतिहास – डॉ. लक्ष्मीसागर वाष्णेय, लोकभारती प्रकाशन, इलाहाबाद।
10. हिंदी साहित्य का इतिहास – डॉ. विजयेन्द्र स्नातक, लोकभारती प्रकाशन, इलाहाबाद।
11. हिंदी साहित्य का इतिहास – डॉ. माधव सोनटक्के, विकास प्रकाशन, कानपुर।
12. हिंदी साहित्य का इतिहास – डॉ. पूरनचंद टंडन, डॉ. विनिता कुमारी, जगताराम एण्ड सन्स प्रकाशन, नई दिल्ली।
13. हिंदी साहित्य का इतिहास – डॉ. नगेंद्र और डॉ.हरदयाल (संपादक) नेशनल पब्लिशिंग हाऊस, दिल्ली।
14. आधुनिक साहित्य – नंददुलारे वाजपेयी, राजकमल प्रकाशन, दिल्ली।

15. आधुनिक साहित्य की प्रवृत्तियाँ – डॉ. नामवर सिंह , लोकभारती प्रकाशन, इलाहाबाद।
16. नई कविता के प्रतिमान – लक्ष्मीकांत वर्मा, भारती प्रेस प्रकाशन, इलाहाबाद।
17. हिन्दी साहित्य और संवेदना का विकास – रामस्वरूप चतुर्वेदी, लोकभारती प्रकाशन,  
इलाहाबाद।

नमूना प्रश्न पत्र

Semester – VI

Course – IV

समय : 3:00 घंटे  
100

पूर्णांक :

- सूचना : 1. अंतिम प्रश्न अनिवार्य है।  
2. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. आधुनिक काल की युगीन परिस्थितियों पर प्रकाश डालिए। 20

अथवा

भारतेन्दु युग की प्रमुख प्रवृत्तियों का परिचय दीजिए।

प्रश्न 2. प्रगतिवादी कविता की प्रमुख विशेषताओं पर प्रकाश डालिए। 20

अथवा

नई कविता की विशेषताओं को स्पष्ट कीजिए।

प्रश्न 3. हिंदी उपन्यास के विकास-क्रम को स्पष्ट कीजिए। 20

अथवा

हिंदी आलोचना के विकास-क्रम को विस्तार से समझाइए।

प्रश्न 4. हिंदी जीवनी साहित्य के विकास-क्रम पर प्रकाश डालिए। 20

अथवा

हिंदी आत्मकथा साहित्य के विकास-क्रम का विवेचन कीजिए।

प्रश्न 5. क) किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 10

1. द्विवेदी युगीन कविता।
2. छायावादी काव्य।
3. समकालीन कविता।
4. हिंदी उपन्यास।

ख) वस्तुनिष्ठ प्रश्न – 05

1. भारतेन्दु युग को 'पुनर्जागरण काल' की संज्ञा किसने दी है?

2. 'पुष्प की अभिलाषा' कविता के कवि कौन हैं?

3. 'क्रांति की भावना' किस कविता की एक प्रमुख विशेषता है?

4. 'स्वर्ग की झलक' नाटक के रचनाकार कौन हैं?

5. 'अर्ध नारीश्वर' निबंध संग्रह के लेखक कौन हैं?

ग) विकल्प प्रश्न– 05



1. आधुनिक हिंदी साहित्य का प्रवर्तक किसे माना जाता है?
  - i) प्रतापनारायण मिश्र
  - ii) भारतेन्दु
  - iii) प्रेमघन
  - iv) बालकृष्ण भट्ट
2. 'सरोज स्मृति' किसकी रचना है?
  - i) प्रसाद
  - ii) निराला
  - iii) सुमित्रानंदन पंत
  - iv) महादेवी वर्मा
3. इनमें से प्रगतिवाद की प्रमुख विशेषता क्या है?
  - i) व्यक्तिवाद
  - ii) शोषकों प्रति घृणा
  - iii) सौंदर्य भावना
  - iv) रहस्यवाद
4. प्रयोगवादी कविता कि निम्नलिखित कौन-सी प्रमुख विशेषता है?
  - i) लघु मानव
  - ii) शिल्प की नवीनता
  - iii) नगर बोध
  - iv) ग्राम बोध
5. इनमें से भीष्म साहनी की कहानी कौन-सी है?
  - i) चीफ़ की दावत
  - ii) प्रतीक्षा
  - iii) मवाली
  - iv) नीली झील

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) V
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	V
PAPER NAME	POST INDEPENDENCE HINDI LITERATURE स्वातंत्र्योत्तर हिंदी साहित्य
PAPER NO.	V
COURSE CODE	UAHIN-502
LACTURE	60
CREDITS & MARKS	4 & 100

### स्वातंत्र्योत्तर हिंदी साहित्य

#### इकाई- I

- नाटक : अर्थ, परिभाषा, स्वरूप एवं विकास
- नाटक के तत्व एवं प्रकार

#### इकाई- II

- एकांकी : अर्थ, परिभाषा, स्वरूप, तत्व, एवं विकास
- नाटक और एकांकी में साम्य-वैषम्य

#### इकाई- III निर्धारित पाठ्य पुस्तक-

- काला पत्थर – (नाटक) लेखक : डॉ. सुरेश शुक्ल 'चन्द्र'  
अमन प्रकाशन, कानपुर

#### इकाई- IV निर्धारित पाठ्य पुस्तक-

- एकांकी-सुमन (एकांकी-संग्रह) संपादन : हिंदी अध्ययन  
मंडल, मुंबई विश्वविद्यालय, मुंबई,  
प्रकाशन, नई दिल्ली।

#### पाठ्यक्रम के लिए निर्धारित एकांकियाँ-

- दीपदान – रामकुमार वर्मा
- और वह जा न सकी – विष्णु 'प्रभाकर'
- बहू की विदा – विनोद रस्तोगी
- रात के राही – ब्रज भूषण
- जान से प्यारे – ममता कालिया

- अन्वेषक – प्रताप सहगल
- नो एडमिशन – संजीव निगम

### संदर्भ ग्रंथ सूची-

1. हिंदी नाटक के पांच दशक – कुसुम खेमानी, राधाकृष्ण प्रकाशन, दिल्ली, 2015
2. हिंदी नाटक कल और आज – केदार सिंह, मोतीलाल बनारसीदास पब्लिशर्स, दिल्ली, 2005
3. आधुनिक हिंदी नाटक – गिरीश रस्तोगी, ग्रंथम प्रकाशन, कानपुर, 1968
4. हिंदी नाटक और रंगमंच:नई दिशाएं, नए प्रश्न, – गिरीश रस्तोगी, अभिव्यक्ति प्रकाशन, इलाहाबाद।
5. आधुनिक भारतीय नाट्य विमर्श – जयदेव तनेजा, राधाकृष्ण प्रकाशन, दिल्ली, 2015
6. हिंदी नाटककार – जयनाथ नलिन, आत्माराम एंड संस, दिल्ली, 1961
7. नाट्य निबंध – दशरथ ओझा, नेशनल पब्लिशिंग हाउस, दिल्ली, 1972
8. हिंदी नाटक बदलते आयाम – नरेंद्रनाथ त्रिपाठी, विक्रम प्रकाशन, दिल्ली, 1987
9. आधुनिक हिंदी नाटककारों के नाटक सिद्धांत – निर्मला हेमंत, अक्षर प्रकाशन प्रा. लि., दिल्ली।
10. रंगदर्शन – नेमीचंद्र जैन, राधाकृष्ण प्रकाशन, दिल्ली, 1982
11. हिंदी नाटक – बच्चन सिंह, राधाकृष्ण प्रकाश, दिल्ली, 2008
12. आधुनिक हिंदी नाटक – बनवीर प्रसाद शर्मा, अनग प्रकाशन, दिल्ली, 2001
13. नाटक : विवेचना और दृष्टि – डॉ. मोहसिन खान – अमन प्रकाशन, कानपुर 2021

14. भारतीय नाट्य शास्त्र और रंगमंच – रामसागर त्रिपाठी, अशोक प्रकाशन, दिल्ली, 1971

नमूना प्रश्न पत्र

Semester – V  
Course – V

समय : 3:00 घंटे  
100

पूर्णांक :

सूचना : 1. अंतिम प्रश्न अनिवार्य है।

2. सभी प्रश्नों के लिए समान अंक है।

प्रश्न 1. नाटक का स्वरूप स्पष्ट करते हुए उसका विकास क्रम लिखिए। 20

अथवा

नाटक और एकांकी में साम्य-वैषम्य स्पष्ट कीजिए।

प्रश्न 2. निम्नलिखित अवतरणों की संदर्भ सहित व्याख्या कीजिए।  
20

क) “पाँच वर्ष से, जबसे मेरा गौना हुआ है, मैं इस शराबी आदमी के अत्याचार सह रही हूँ। यह हर तरह मुझे प्रताड़ित करता है। इसने मेरा ज़ेवर, घर, बर्तन, सब कुछ शराब की भेंट चढ़ा दिया।”

अथवा

“लेकिन राजीनामा के सारे कागज़ात, दस्तखत करके मेरे बापू के हवाले कर दिये जाएँ। तलाक़ मंजूरी और बापू के कर्ज़ माफ़ी के कागज़ात पहले देने होंगे।”

ख) “चली गई। कहती है, ऐसा मैं नहीं सुन सकूँगी। जो मुझे करना है, वह सामली सुन भी न सकेगी। भवानी! तुमने मेरे हृदय को कैसा कर दिया।”

अथवा

“मैंने आज सुबह अख़बार में आप द्वारा दिया शोक समाचार पढ़ा तो मैं हिल उठा। मैं आपके लिए जीवन का नया संदेश लाया हूँ।”

प्रश्न 3. पुनिया का चरित्र-चित्रण स्पष्ट कीजिए। 20

अथवा

‘काला पत्थर’ नाटक की कथा विस्तार से स्पष्ट कीजिए।

प्रश्न 4. ‘बहू की विदा’ एकांकी के चरित्र-चित्रण कीजिए। 20

अथवा

‘रात के राही’ एकांकी की विशेषताएँ स्पष्ट कीजिए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

क) पन्ना।

ख) आर्यभट्ट।

ग) डॉ. कोशिक का आविष्कार। घ) नो एडमिशन की संक्षेप कथा।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) VI
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	VI
PAPER NAME	POST INDEPENDENCE HINDI LITERATURE स्वातंत्र्योत्तर हिंदी साहित्य
PAPER NO.	V
COURSE CODE	UAHIN-602
LACTURE	60
CREDITS & MARKS	4 & 100

### स्वातंत्र्योत्तर हिंदी साहित्य

इकाई- I

- कविता : अर्थ, परिभाषा, एवं स्वरूप
- स्वातंत्र्योत्तर कविता : भाव, संवेदना और शिल्प

इकाई- II

- निबंध : अर्थ, परिभाषा और तत्त्व,
- निबंध : प्रकार तथा स्वातंत्र्योत्तर हिन्दी निबंध साहित्य

का विकास

इकाई- III निर्धारित पाठ्य पुस्तक-

- काव्य-सौरभ (कविता-संग्रह)- संपादन : हिन्दी अध्ययन मंडल, मुंबई विश्वविद्यालय, मुंबई, प्रकाशन, नई दिल्ली।

पाठ्यक्रम के लिए निर्धारित कविताएँ-

- यात्री – सच्चिदानंद हीरानंद वात्स्यायन 'अज्ञेय'
- उनको प्रणाम – नागार्जुन
- नया कवि – गिरिजाकुमार माथुर
- प्रमथ्यु गाथा – धर्मवीर भारती
- इस तरह तो – बालस्वरूप 'राही'
- पानी में घिरे हुए लोग – केदारनाथ सिंह

- थोड़े-से बच्चे और बाक़ी बच्चे – चंद्रकांत देवताले
- सिलसिला – सुदामा पाण्डेय 'धूमिल'
- रात किसी का घर नहीं – राजेश जोशी
- चुप्पी टूटेगी – ओमप्रकाश वाल्मीकि
- बाज़ारे-नुमाइश में – दीक्षित दनकौरी
- बूढ़ी पृथ्वी का दुख – निर्मला पुतुल

इकाई- IV निर्धारित पाठ्य पुस्तक–

● निबंध–विविधा (निबंध–संग्रह)– संपादन : हिन्दी अध्ययन मंडल, मुंबई

विश्वविद्यालय, मुंबई, प्रकाशन प्रकाशन, नई दिल्ली।

पाठ्यक्रम के लिए निर्धारित निबंध–

- बाज़ार-दर्शन – जैनेन्द्र कुमार
- पाप के चार हथियार – कन्हैयालाल मिश्र 'प्रभाकर'
- मनुष्य की सर्वोत्तम कृति-साहित्य – हजारीप्रसाद द्विवेदी
- हिम्मत और ज़िंदगी – रामधारी सिंह 'दिनकर'
- अगर मुल्क में अख़बार न हो – नामवर सिंह
- रसायन और हमारा पर्यावरण – डॉ. एन. एल. रामनाथन
- आँगन का पंछी – विद्यानिवास मिश्र
- पाँत का आखिरी आदमी – कुबेरनाथ राय
- मनुष्य और ठग – प्रेम जमेजय
- ओ वसंत तुम्हें मनुहारता कचनार – श्रीराम परिहार

संदर्भ ग्रंथ सूची–

1. काव्यशास्त्र – भगीरथ मिश्र, विश्वविद्यालय प्रकाशन, वाराणसी।
2. साहित्यिक निबंध – गणपतिचन्द्र गुप्त, लोकभारती प्रकाशन, इलाहाबाद।

3. हिंदी का गद्य साहित्य – रामचंद्र तिवारी, विश्वविद्यालय प्रकाशन, वाराणसी।
4. प्रतिनिधि हिन्दी निबंधकार – ज्योतीश्वर मिश्र, लोकभारती प्रकाशन, इलाहाबाद।
5. छायावादोत्तर हिंदी गद्य साहित्य – विश्वनाथ प्रसाद तिवारी, विश्वविद्यालय प्रकाशन, वाराणसी।
6. हिन्दी-निबंधकर – जयनाथ नलिन, आत्माराम एंड संज, दिल्ली।
7. हिन्दी कविता का अतीत और वर्तमान – मैनेजर पाण्डेय, वाणी प्रकाशन, दिल्ली।
8. स्त्री कविता पहचान और द्वंद्व – रेखा सेठी, राजकमल प्रकाशन, दिल्ली।

नमूना प्रश्न पत्र

Semester – VI

Course – V

समय : 3:00 घंटे

पूर्णांक :

100

सूचना : 1. अंतिम प्रश्न अनिवार्य है।

2. सभी प्रश्नों के लिए समान अंक है।

प्रश्न 1. कविता से क्या अभिप्राय है? उसके तत्वों पर प्रकाश डालिए। 20

अथवा

स्वातंत्र्योत्तर निबंध साहित्य का विकास स्पष्ट कीजिए।

प्रश्न 2. निम्नलिखित अवतरणों की संदर्भ सहित व्याख्या कीजिए।  
20



क) “पग-पग पर तीर्थ है,  
मंदिर भी बहुतेरे हैं;  
तू जितनी करे परिकम्मा, जितने लगा फेरे  
मंदिर से, तीर्थ से, यात्रा से।”

अथवा

“किसी ने लिखी आँसुओं की कहानी  
किसी ने पढ़ा किन्तु दो बूंद पानी  
इसी में गये बीत दिन ज़िंदगी के  
गई घुल जवानी, मिट गई निशानी।”

ख) “मैंने मन में कहा ठीक। बाज़ार आमंत्रित करता है कि  
आओ मुझे लूटो और लूटो। सब भूल जाओ, मुझे देखो।”

अथवा

“ताबड़तोड़ हरियाली लाने के लिए वानस्पतिक संसार के  
दावेदारों ने पोची हरीतिमा वाली जड़ों का पोषण शुरू कर  
दिया।”

प्रश्न 3. ‘थोड़े-से बच्चे और बाक़ी बच्चे’ कविता की संवेदनाएँ  
स्पष्ट कीजिए। 20

अथवा

‘रात किसी का घर नहीं’ कविता की मूलसंवेदना स्पष्ट  
कीजिए।

प्रश्न 4. ‘आँगन का पंछी’ निबंध का भाव-सौन्दर्य स्पष्ट कीजिए।  
20

अथवा

‘पाप के चार हथियार’ निबंध का संदेश स्पष्ट कीजिए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

क) ‘चुप्पी टूटेगी’ कविता का भाव सौंदर्य। ख) ‘नया  
कवि’ कविता का भाव।

ग) ‘मनुष्य और ठग’ का भाव। घ) ‘रसायन और हमारा  
पर्यावरण’ निबंध का उद्देश्य।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) VI
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	V
PAPER NAME	INFORMATION TECHNOLOGY IN HINDI हिन्दी में सूचना प्रौद्योगिकी
PAPER NO.	VI
COURSE CODE	UAHIN-503
LACTURE	45
CREDITS & MARKS	4 & 80

## हिन्दी में सूचना प्रौद्योगिकी

### इकाई- I

- सूचना प्रौद्योगिकी : अर्थ, परिभाषा, स्वरूप और विकास
- सूचना प्रौद्योगिकी : उपयोगिता और महत्व

- सूचना प्रौद्योगिकी समस्याएँ, सीमाएँ और चुनौतियाँ

### इकाई- II

- सूचना प्रौद्योगिकी का व्यवहार क्षेत्र : सामान्य परिचय
- सूचना प्रौद्योगिकी का जनसंचार के क्षेत्र में योगदान और

महत्व

(हिन्दी पत्रकारिता प्रिंट मीडिया, इलेक्ट्रॉनिक मीडिया के

संदर्भ में)

- सूचना प्रौद्योगिकी : शिक्षा के क्षेत्र में योगदान और

उपादेयता

### इकाई-III

● सूचना प्रौद्योगिकी हिन्दी भाषा, देवनागरी लिपि का वैश्विक प्रसार और प्रयोग

● सूचना प्रौद्योगिकी : हिन्दी सॉफ्टवेयर परिचय, विकास यात्रा और महत्व

● हिन्दी भाषा और देवनागरी लिपि के प्रसार क्षेत्र में विविध संस्थानों की भूमिका/योगदान (राजभाषा

विभाग, केन्द्रीय हिन्दी संस्थान दिल्ली, सी-डैक पुणे,  
आई. टी., निजी कंपनियाँ)  
इकाई- IV

आई.

● इन्टरनेट : हिन्दी और देवनागरी लिपि (यूनिकोड फॉण्ट, फॉण्ट परिवर्तक, देवनागरी लिपि टाइपिंग टूल, हिन्दी में ईमेल, नेट पर हिन्दी विज्ञापन, हिन्दी की साहित्यिक ई-पत्रिकाएँ, हिन्दी ब्लॉग, विविध हिन्दी एप्प)

● सूचना प्रौद्योगिकी और भारत में डिजिटलाइज़ेशन का विकास, कठिनाइयाँ, उपयोगिता और महत्व

● हिन्दी में सूचना प्रौद्योगिकी : विविध क्षेत्रों में रोज़गार की संभावनाएँ

सूचना: प्रकल्प -20 अंक

(पाठ्यक्रम से संबंधित किसी भी विषय पर 15 से 20 पृष्ठों का प्रकल्प तैयार करना अपेक्षित है।)

**संदर्भ ग्रंथ सूची-**

1. आधुनिक जनसंचार और हिन्दी – हरिमोहन, तक्षशिला प्रकाशन, दिल्ली।
2. कंप्यूटर के भाषिक अनुप्रयोग – विजय कुमार मल्होत्रा, वाणी प्रकाशन, दिल्ली।
3. कंप्यूटर और हिन्दी – हरिमोहन, तक्षशिला प्रकाशन, दिल्ली।
4. पत्रकारिता से मीडिया तक – मनोज कुमार, वैभव प्रकाशन, रायपुर
5. जनसंचार परिदृश्य – डॉ. नीलम राठी, रजनी राठी, उत्कर्ष प्रकाशन, दिल्ली।
6. प्रयोजनमूलक हिन्दी – डॉ. पी. लता, लोकभारती प्रकाशन, इलाहाबाद।
7. प्रयोजनमूलक हिन्दी – रमेश जैन, नेशनल पब्लिशिंग हाउस, दिल्ली।
8. जनसंचार और हिन्दी पत्रकारिता – डॉ. अर्जुन तिवारी, वाणी प्रकाशन, दिल्ली।
9. प्रयोजनमूलक हिन्दी – डॉ. विनोद गोदरे, वाणी प्रकाशन, दिल्ली।

10. वर्चुअल रियलिटी और इन्टरनेट – जगदीश्वर चतुर्वेदी, अनामिका पब्लिशर्स, दिल्ली।
11. मीडिया भूमंडलीकरण और समाज – संपादक : संजय द्विवेदी, यश पब्लिकेशन, दिल्ली।
12. जनसंचार और मीडिया लेखन – डॉ. दत्तात्रय मुरुमकर, प्रकाशन संस्थान, दिल्ली।
13. अनुवाद का समकाल – डॉ. मोहसिन खान, लोकभारती प्रकाशन, इलाहाबाद।
14. हिन्दी पत्रकारिता और साहित्य – रामअवतार शर्मा, नमन प्रकाशन, दिल्ली।
15. हिन्दी ब्लॉगिंग स्वरूप, व्याप्ति और संभावनाएं – सं. डॉ. मनीष कुमार मिश्रा
16. इंटरनेट पत्रकारिता – सुरेश कुमार, तक्ष शिला प्रकाशन, दिल्ली
17. इलेक्ट्रॉनिक मीडिया के सिद्धांत – रूपचन्द गौतम, नटराज प्रकाशन, दिल्ली

## नमूना प्रश्न पत्र

Semester – V

Course – IV

समय : 2:30 घंटे  
80

पूर्णांक :

- सूचना : 1. अंतिम प्रश्न अनिवार्य है।  
2. शेष चार प्रश्नों में से किन्हीं तीन के उत्तर लिखिए।  
3. सभी प्रश्नों के लिए समान अंक है।

प्रश्न 1. सूचना प्रौद्योगिकी का अर्थ, परिभाषा, स्वरूप स्पष्ट कीजिए। 20

अथवा

सूचना प्रौद्योगिकी की उपयोगिता और महत्व को दर्शाएँ।

प्रश्न 2. सूचना प्रौद्योगिकी का व्यवहार क्षेत्र सामान्य परिचय की चर्चा कीजिए। 20

अथवा

सूचना प्रौद्योगिकी का शिक्षा के क्षेत्र में योगदान और उपादेयता स्पष्ट करें।

प्रश्न 3. सूचना प्रौद्योगिकी में हिंदी भाषा के प्रसार एवं प्रयोग पर प्रकाश डालिए। 20

अथवा

हिन्दी भाषा, देवनागरी लिपि के प्रसार क्षेत्र में विविध संस्थानों की भूमिका दर्शाएँ।

प्रश्न 4. भारत में डिजिटलाइजेशन के विकास को बताते हुए उसकी उपयोगिता सिद्ध करें। 20

अथवा

हिन्दी में सूचना प्रौद्योगिकी विविध क्षेत्रों में रोज़गार की संभावनाओं को स्पष्ट करें।

प्रश्न 5 किन्हीं दो पर टिप्पणियाँ लिखिए। 20

- क) सूचना प्रौद्योगिकी की समस्याएँ।
- ख) इलेक्ट्रॉनिक मीडिया।
- ग) हिन्दी सॉफ़्टवेयर परिचय।
- घ) देवनागरी लिपि टाइपिंग टूल।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) VI
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	VI
PAPER NAME	SOCIAL MEDIA सोशल मीडिया
PAPER NO.	VI
COURSE CODE	UAHIN-603
LACTURE	45
CREDITS & MARKS	4 & 80

### सोशल मीडिया

इकाई- I

- सोशल मीडिया का अर्थ, स्वरूप, प्रकार और विकास
- सोशल मीडिया की उपलब्धियाँ, उपयोगिता और महत्व
- सोशल मीडिया : समस्याएँ, चुनौतियाँ, सीमाएँ और

संभावनाएँ

इकाई- II

- सोशल मीडिया में हिन्दी एवं देवनागरी लिपि का प्रयोग और प्रसार, हिन्दी का बदलता रूप (फ़ेसबुक, व्हाट्सअप, ट्विटर, मैसेन्जर, इन्स्टाग्राम, एफ.एम.रेडियो, यूट्यूब)

- सोशल मीडिया की शिक्षा के क्षेत्र में उपादेयता और संभावनाएँ

- सोशल मीडिया : हिन्दी का प्रयोग और रोज़गार की संभावनाएँ

इकाई- III

- सोशल मीडिया के प्रभाव (राजनीतिक, सामाजिक, धार्मिक-सांस्कृतिक, आर्थिक)

- सोशल मीडिया और बदलता हुआ भारतीय परिवेश (बाल, युवाओं, महिलाओं और वृद्धों के संदर्भ में)

- सोशल मीडिया और बदलते जीवन मूल्य

इकाई- IV

- सोशल मीडिया और क़ानून

- सोशल मीडिया : भाषा, मुक्त अभिव्यक्ति, दायित्वबोध, सीमाएँ और चुनौतियाँ

- सोशल मीडिया और वैश्विक परिवर्तन के विविधायम

**सूचना: प्रकल्प – 20 अंक**

(पाठ्यक्रम से संबंधित किसी भी विषय पर 15 से 20 पृष्ठों का प्रकल्प तैयार करना अपेक्षित है।)

**संदर्भ ग्रंथ सूची-**

1. सोशल नेटवर्किंग : नए समय का संवाद – संपादक: संजय द्विवेदी, यश पब्लिकेशन्स, दिल्ली।

2. नए ज़माने की पत्रकारिता – सौरभ शुक्ला, विस्डम विलेज पब्लिकेशन्स, गुडगांव एवं दिल्ली।

4. उत्तरआधुनिक मीडिया तकनीक – हर्षदेव, वाणी प्रकाशन, नई दिल्ली।

5. नयी संचार प्रौद्योगिकी पत्रकारिता – कृष्ण कुमार रत्नू, हरियाणा ग्रंथ अकादेमी।

6. कम्प्युटरी सूचना प्रणाली का विकास – राम बंसल, वाणी प्रकाशन, नई दिल्ली।

7. जनसंचारिकी सिद्धांत और अनुप्रयोग – डॉ.रामलखन मीणा, कल्पना पब्लिशर, दिल्ली।
8. भारत में जनसंचार और प्रसारण मीडिया – मधुकर लेले, राजकमल प्रकाशन, दिल्ली।
9. जनसंचार सिद्धांत और अनुप्रयोग – विष्णु राजगढ़िया, राधाकृष्ण प्रकाशन, नई दिल्ली।
10. संचार माध्यम लेखन – गौरीशंकर रैना, वाणी प्रकाशन, नई दिल्ली।
11. जनसंचार माध्यमों में हिंदी – चंद्रकुमार, क्लासिक पब्लिशिंग कंपनी, नई दिल्ली।
12. आधुनिक जनसंचार और हिंदी – डॉ. हरिमोहन, तक्षशीला प्रकाशन, नई दिल्ली।
13. मीडिया समग्र – डॉ. अर्जुन तिवारी, वाणी प्रकाशन, दिल्ली।



## नमूना प्रश्न पत्र

Semester – VI

Course – IV

समय : 2:30 घंटे  
80

पूर्णांक :

- सूचना : 1. अंतिम प्रश्न अनिवार्य है।  
2. शेष चार प्रश्नों में से किन्हीं तीन के उत्तर लिखिए।  
3. सभी प्रश्नों के लिए समान अंक है।

प्रश्न 1. सोशल मीडिया के स्वरूप को स्पष्ट करते हुए उसके विकास को समझाइए। 20

अथवा

सोशल मीडिया की समस्याएँ, चुनौतियाँ, सीमाएँ और संभावनाएँ पर प्रकाश डालिए।

प्रश्न 2. सोशल मीडिया की शिक्षा के क्षेत्र में उपादेयता और संभावनाएँ स्पष्ट करें। 20

अथवा

सोशल मीडिया में हिन्दी का प्रयोग और रोज़गार की संभावनाएँ दर्शाएँ।

प्रश्न 3. सोशल मीडिया का बच्चों एवं युवाओं पर पड़ने वाले प्रभाव की चर्चा कीजिए। 20 अथवा  
सोशल मीडिया और बदलते जीवन मूल्य को स्पष्ट करें।

प्रश्न 4. सोशल मीडिया में मुक्त अभिव्यक्ति की स्वतंत्रता पर अपने विचार प्रकट कीजिए। 20

अथवा

सोशल मीडिया में कानून की भूमिका पर प्रकाश डालिए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

- क) सोशल मीडिया का महत्व।  
 ख) एफ.एम.रेडियो और हिन्दी।  
 ग) सोशल मीडिया और राजनीतिक प्रभाव।  
 घ) सोशल मीडिया और वैश्विक परिवर्तन।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) VII
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	V
PAPER NAME	LITERARY CRITICISM : PROSODY & RHETORICS, साहित्य समीक्षा : छंद एवं अलंकार
PAPER NO.	VII
COURSE CODE	UAHIN-504
LACTURE	60
CREDITS & MARKS	CREDITS - 4 & MARKS -100

### साहित्य समीक्षा : स्वरूप एवं सामान्य परिचय

इकाई- I समीक्षा-

- साहित्य : स्वरूप और परिभाषा (भारतीय एवं पाश्चात्य)
- साहित्य के तत्व
- साहित्य के हेतु
- साहित्य के प्रयोजन (भारतीय एवं पाश्चात्य)

इकाई- II कला-

- स्वरूप और परिभाषा
- कलाओं का वर्गीकरण
- काव्य कला की श्रेष्ठता
- कला और साहित्य का संबंध

इकाई- III काव्य के रूप-

- महाकाव्य : भारतीय एवं पाश्चात्य मान्यताओं का परिचय
- खंडकाव्य : स्वरूप और विशेषताएँ
- मुक्तक काव्य : स्वरूप और विशेषताएँ
- गीतिकाव्य : स्वरूप और विशेषताएँ
- ग़ज़ल : सामान्य परिचय एवं सिद्धान्त

इकाई- IV छंद : सामान्य परिचय, लक्षण एवं उदाहरण-

- मात्रिक छंद:- 1. चौपाई 2. रोला 3. दोहा 4. हरिगीतिका 5. उल्लाला 6. ताटक 7. सोरठा 8. कुंडलिया

- वर्णिक छंद:- 1. इंद्रवज्रा 2. उपेंद्रवज्रा 3. द्रुतविलंबित 4. वंशस्थ 5. भुजंगी 6. तोटक 7. वसंततालिका 8. घनाक्षरी

### नमूना प्रश्न पत्र

Semester – V

Course –VII

अवधि : 03:00 घंटे

100

पूर्णांक :

- सूचना : 1. सभी प्रश्न अनिवार्य हैं।  
2. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. साहित्य के स्वरूप को स्पष्ट करते हुए उसके तत्वों पर प्रकाश डालिए। 20

अथवा

साहित्य की परिभाषा देते हुए उसके भारतीय प्रयोजनों को स्पष्ट कीजिए।

प्रश्न 2. कला की परिभाषा देते हुए काव्य कला की श्रेष्ठता स्पष्ट कीजिए। 20

अथवा  
कला और साहित्य के संबंध को समझाइए।

प्रश्न 3. महाकाव्य संबंधी भारतीय मान्यताओं का परिचय दीजिए।  
20

अथवा  
मुक्तक काव्य का स्वरूप स्पष्ट करते हुए उसकी विशेषताओं पर प्रकाश डालिए।

प्रश्न 4. रोला तथा तोटक छंदों का लक्षण तथा उदाहरण सहित सामान्य परिचय दीजिए। 20

अथवा  
भुजंगी तथा वंशस्थ छंदों का लक्षण तथा उदाहरण सहित सामान्य परिचय दीजिए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

- क) साहित्य के हेतु।
- ख) कलाओं का वर्गीकरण।
- ग) गीतिकाव्य की विशेषताएँ।
- घ) घनाक्षरी छंद लक्षण एवं उदाहरण।

-----

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) VII
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	VI
PAPER NAME	LITERARY CRITICISM:PROSODY &

	RHETORICS, साहित्य समीक्षा : छंद एवं अलंकार
PAPER NO.	VII
COURSE CODE	UAHIN-604
LACTURE	60
CREDITS & MARKS	CREDITS - 4 & MARKS - 100

## साहित्य समीक्षा

### इकाई- I शब्द शक्ति-

- शब्द शक्ति : अर्थ, परिभाषा और स्वरूप
- शब्द शक्ति के प्रकार : (अभिधा, लक्षणा एवं व्यंजना का सामान्य परिचय)

### इकाई- II रस-

- रस : अर्थ, परिभाषा एवं स्वरूप
- रस के अवयव
- रस के भेद : सामान्य परिचय

### इकाई- III गद्य के विविध रूप-

- उपन्यास : परिभाषा, स्वरूप एवं प्रमुख तत्व
- कहानी : परिभाषा, स्वरूप एवं प्रमुख तत्व
- रेखाचित्र, संस्मरण, जीवनी और आत्मकथा का तात्त्विक विवेचन

### इकाई- IV अलंकार सामान्य परिचय, लक्षण एवं उदाहरण-

- शब्दालंकार:- 1. अनुप्रास 2. यमक 3. श्लेष 4. वक्रोक्ति  
5. वीप्सा 6. पुनरुक्ति प्रकाश
- अर्थालंकार:- 1. उपमा 2. रूपक 3. अतिशयोक्ति 4. उत्प्रेक्षा  
5. विभावना 6. प्रतीप 7. दीपक 8. संदेह 9. विरोधाभास

### संदर्भ ग्रंथ सूची-

1. रस सिद्धांत – डॉ. नगेंद्र, नेशनल पब्लिकेशन हाऊस, एडिशन 2019
2. काव्यशास्त्र – भगीरथ मिश्र, विश्वविद्यालय प्रकाशन, वाराणसी।
3. भारतीय काव्यशास्त्र : नई व्याख्या – डॉ.राममूर्ति त्रिपाठी, साहित्य भवन प्रा. लि. इलाहाबाद।
4. हिंदी साहित्य समीक्षा – श्रीमूर्ति सुब्रह्मराय, हिंदी साहित्य सम्मलेन, प्रयाग।
5. साहित्य समीक्षा – रामरतन भटनागर, किताब महल, इलाहाबाद।
6. साहित्य समीक्षा – कालिदास कपूर, इंडियन प्रेस लिमिटेड, प्रयाग, 1921
7. कला की ज़रूरत – राजकमल प्रकाशन-अन्सर्ट फिशर, अनुवाद – रमेश उपाध्याय
8. हिंदी का गद्य पर्व – नामवर सिंह, राजकमल प्रकाशन, दिल्ली।
9. आलोचना और विचारधारा नामवर सिंह –आशीष त्रिपाठी (संपा.), राजकमल प्रकाशन, दिल्ली।
10. हिंदी आलोचना का दूसरा पाठ – निर्मला जैन, राजकमल प्रकाशन, दिल्ली।
11. आचार्य रामचंद्र शुक्ल :आलोचना के नए मानदंड –भवदेय पांडेय, राजकमल प्रकाशन,दिल्ली।
12. हिंदी आलोचना का विकास – मधुरेश, राजकमल प्रकाशन, दिल्ली।
13. सांस्कृतिक आलोचना और हजारीप्रसाद द्विवेदी –रामकिशोर त्रिपाठी, राजकमल प्रकाशन, दिल्ली।
14. भारतीय काव्यशास्त्र के नये क्षितिज – राममूर्ति त्रिपाठी, राजकमल प्रकाशन, दिल्ली।

15. हिंदी समीक्षा और आचार्य शुक्ल नामवर सिंह –ज्ञानेंद्र कुमार संतोष, राजकमल प्रकाशन, दिल्ली।
16. काव्य परिचय – राजेंद्र प्रसाद श्रीवास्तव, पुस्तक संस्थान 109/50–ए, नेहरूनगर, कानपुर।
17. काव्यशास्त्र के मानदंड – रामनिवास गुप्त, वाणी प्रकाशन, दिल्ली।
18. भारतीय काव्य विमर्श – राममूर्ति त्रिपाठी, वाणी प्रकाशन, दिल्ली, प्रथम संस्करण, 2000
19. साहित्यालोचन के सिद्धांत – रवींद्र कुमार जैन, नेशनल पब्लिकेशन हाऊस, दिल्ली।
20. पाश्चात्य काव्यशास्त्र : इतिहास, सिद्धान्त और वाद – डॉ. भगीरथ मिश्र, विश्वविद्यालय, प्रकाशन, वाराणसी।
21. शास्त्रीय समीक्षा के सिद्धांत (द्वितीय भाग) – गोविंद त्रिगुणायत, एस चंद एंड कंपनी (प्रा.) लि. रामनगर, नई दिल्ली।
22. काव्य के तत्व – आचार्य देवेन्द्रनाथ शर्मा – लोकभारती प्रकाशन, इलाहाबाद।
24. साहित्य विवेचन – क्षेमचंद्र 'सुमन', योगेंद्र कुमार मल्लिक, आत्माराम एंड संस, दिल्ली।
25. साहित्य-विविधा – रमेशचंद्र लवानिया – अमित प्रकाशन, गाजियाबाद।

### नमूना प्रश्न पत्र

Semester – VI

Course –VII

अवधि : 03:00 घंटे  
: 100

पूर्णांक

- सूचना : 1. सभी प्रश्न अनिवार्य हैं।  
2. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. शब्द शक्ति का अर्थ समझाते हुए लक्षणा और व्यंजना शब्दशक्ति का सोदाहरण परिचय दीजिए। 20

अथवा

शब्द शक्ति की परिभाषा देते हुए उसके प्रमुख प्रकारों का सोदाहरण परिचय दीजिए।

प्रश्न 2. रस की परिभाषा देते हुए उसके विभिन्न अवयवों का सोदाहरण परिचय दीजिए। 20

अथवा

रस की विभिन्न परिभाषाओं की चर्चा करते हुए करुण एवं शांत रस का सोदाहरण परिचय दीजिए।

प्रश्न 3. पाश्चात्य मान्यताओं के आधार पर कहानी के तत्वों की चर्चा कीजिए। 20

अथवा

जीवनी का अर्थ समझाते हुए उसके प्रमुख तत्वों का विवेचन कीजिए।

प्रश्न 4. अनुप्रास तथा श्लेष अलंकारों के लक्षण स्पष्ट करते हुए उनके उदाहरण लिखिए। 20

अथवा

दीपक तथा उत्प्रेक्षा अलंकारों के लक्षणों को समझाते हुए उनके उदाहरण लिखिए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

क) अभिधा शब्द शक्ति ।

ख) शृंगार रस।

ग) उपन्यास के तत्व।



घ) रेखाचित्र।

-----

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) VIII
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	V
PAPER NAME	LINGUISTICS: HINDI LANGUAGE AND GRAMMAR भाषा विज्ञान : हिन्दी भाषा और व्याकरण
PAPER NO.	VIII
COURSE CODE	UAHIN-505
LACTURE	60
CREDITS & MARKS	CREDITS - 4 & MARKS - 100

भाषा विज्ञान : हिन्दी भाषा और व्याकरण

इकाई – I

- भाषा की परिभाषा और उसकी विशेषताएँ
- भाषा के विविध रूप
- भाषा परिवर्तन के प्रमुख कारण

इकाई – II

- भाषा विज्ञान : परिभाषा और भाषा विज्ञान की

उपयोगिता

- भाषा विज्ञान की प्रमुख शाखाओं का सामान्य परिचय –  
(ध्वनि विज्ञान, शब्द विज्ञान, रूप विज्ञान, वाक्य

विज्ञान, अर्थ विज्ञान)

इकाई – III

- वर्ण विचार : उच्चारण की दृष्टि से हिन्दी ध्वनियों का वर्गीकरण
- कारक के भेद एवं उसकी विभक्तियाँ
- संज्ञा : रूपांतर के आधार

#### इकाई – IV

- सर्वनाम : कारक रचना
- विशेषण : रूपांतर के आधार
- क्रिया : रूपांतर के आधार  
(वाच्य, काल, लिंग, पुरुष और वचन के आधार पर)

#### नमूना प्रश्न पत्र

Semester – V

Course –VIII

अवधि : 03:00 घंटे  
100

पूर्णांक :

- सूचना : 1. सभी प्रश्न अनिवार्य हैं।  
2. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. भाषा के विविध रूपों की चर्चा कीजिए। 20

अथवा

भाषा परिवर्तन के प्रमुख कारणों की चर्चा कीजिए।

प्रश्न 2. भाषा विज्ञान की परिभाषा देते हुए उसकी उपयोगिता पर प्रकाश डालिए। 20

अथवा

भाषा विज्ञान की प्रमुख शाखाओं का सामान्य परिचय दीजिए।

प्रश्न 3. उच्चारण की दृष्टि से हिन्दी स्वर ध्वनियों के वर्गीकरण को सोदाहरण समझाइए। 20

अथवा

कारक के भेदों पर प्रकाश डालते हुए उसकी विभक्तियों को सोदाहरण लिखिए।

प्रश्न 4. सर्वनामों की कारक रचना को सोदाहरण स्पष्ट कीजिए। 20

अथवा

क्रिया में होनेवाले रूपांतर को स्पष्ट कीजिए।

प्रश्न 5. निम्न में से किन्हीं दो विषयों पर टिप्पणियाँ लिखिए।  
20

क) परिनिष्ठित भाषा।

ख) ध्वनि विज्ञान।

ग) उच्चारण स्थान के आधार पर व्यंजनों का वर्गीकरण।

घ) वचन के आधार पर संज्ञा शब्दों में रूपांतर।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) VIII
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	VI
PAPER NAME	LINGUISTICS : HINDI LANGUAGE AND GRAMMAR भाषा विज्ञान : हिन्दी भाषा और व्याकरण

PAPER NO.	VIII
COURSE CODE	UAHIN-605
LACTURE	60
CREDITS & MARKS	CREDITS - 4 & MARKS - 100

## भाषा विज्ञान : हिन्दी भाषा और व्याकरण

### इकाई – I

● प्राचीन एवं मध्यकालीन भारतीय आर्य भाषाओं का सामान्य परिचय –

क) वैदिक संस्कृत, ख) लौकिक संस्कृत, ग) पालि, घ) प्राकृत, ङ) अपभ्रंश

● आधुनिक भारतीय आर्य भाषाओं का सामान्य परिचय–  
क) सिन्धी, ख) मराठी, ग) पंजाबी, घ) गुजराती, ङ)

बांग्ला

### इकाई – II

- हिन्दी भाषा की उत्पत्ति और विकास
- हिन्दी की प्रमुख बोलियों का सामान्य परिचय –  
क) ब्रजभाषा, ख) अवधी, ग) भोजपुरी, घ) खड़ी बोली
- खड़ी बोली हिन्दी के विविध रूप –  
क) हिन्दी, ख) हिंदुस्तानी, ग) उर्दू, घ) दक्खिनी

### इकाई – III

- हिन्दी का शब्द समूह
- देवनागरी लिपि : वैज्ञानिक विशेषताएँ एवं महत्व
- संधि : अर्थ, स्वरूप तथा प्रमुख भेदों का सामान्य परिचय

### इकाई – IV

- वाक्य रचना –

क) वाक्य की परिभाषा, अर्थ और रचना की दृष्टि से  
वाक्य के प्रकार

ख) हिन्दी वाक्य रचना में अध्याहार और पदक्रम  
संबंधी सामान्य नियम

● समास : अर्थ, स्वरूप तथा प्रमुख भेदों का सामान्य  
परिचय

### संदर्भ ग्रंथ सूची-

1. भाषा विज्ञान – डॉ. भोलानाथ तिवारी, किताब महल, इलाहाबाद।
2. हिन्दी भाषा और लिपि – डॉ. धीरेन्द्र वर्मा, हिंदुस्तानी एकेडेमी, प्रयाग।
3. भाषा विज्ञान एवं भाषाशास्त्र – डॉ. कपिलदेव द्विवेदी, विश्वविद्यालय प्रकाशन, वाराणसी।
4. हिन्दी भाषा का इतिहास – डॉ. भोलानाथ तिवारी, वाणी प्रकाशन, दिल्ली।
5. भाषा विज्ञान की भूमिका – देवेन्द्रनाथ शर्मा, दीप्ति शर्मा, राधाकृष्ण प्रकाशन, दिल्ली।
6. व्यावहारिक हिन्दी व्याकरण – श्यामचन्द्र कपूर, प्रभात प्रकाशन, दिल्ली।
7. व्यावहारिक हिन्दी व्याकरण एवं रचना – डॉ. संतोष चौधरी, कनक सक्सेना, आस्था प्रकाशन, जयपुर।
8. मानक हिन्दी व्याकरण और रचना – डॉ. हरिवंश तरुण, प्रकाशन संस्थान, नई दिल्ली।
9. हिन्दी व्याकरण – पं. कामता प्रसाद गुरु, नागरीप्रचारिणी सभा, काशी।
10. आधुनिक भाषा विज्ञान के सिद्धान्त – डॉ. राम किशोर शर्मा, लोकभारती प्रकाशन, नई दिल्ली।
11. हिन्दी व्याकरण और रचना – वासुदेवनंदन प्रसाद, भारती भवन पब्लिशर्स एंड डिस्ट्रीब्यूटर्स, नई दिल्ली।

12. हिन्दी शब्दानुशासन – आचार्य किशोरीदास वाजपेयी,  
नागरीप्रचारिणी सभा, वाराणसी।
13. आधुनिक भाषा विज्ञान – डॉ. राजमणि शर्मा, वाणी प्रकाशन,  
दिल्ली।
14. हिन्दी भाषा इतिहास और संरचना – डॉ. हरिश्चंद्र पाठक,  
तक्षशीला प्रकाशन, नई दिल्ली।
15. मानक हिन्दी व्याकरण – डॉ. पृथ्वीनाथ पाण्डेय, जयभारती  
प्रकाशन, इलाहाबाद।
16. सामान्य भाषा विज्ञान – डॉ. बाबूराम सक्सेना, हिन्दी साहित्य  
सम्मेलन, प्रयाग।

नमूना प्रश्न पत्र

Semester – VI

Course –VIII

अवधि : 03:00 घंटे

100

पूर्णांक :

सूचना : 1. सभी प्रश्न अनिवार्य हैं।

2. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. मध्यकालीन आर्य भाषाओं का सामान्य परिचय दीजिए ।  
20

अथवा  
आधुनिक भारतीय आर्य भाषाओं का सामान्य परिचय दीजिए ।

प्रश्न 2. हिन्दी की प्रमुख बोलियों का सामान्य परिचय दीजिए ।  
20

अथवा  
खड़ी बोली हिन्दी के प्रमुख रूपों की चर्चा कीजिए ।

प्रश्न 3. हिन्दी के शब्द समूह पर प्रकाश डालिए । 20

अथवा  
देवनागरी लिपि की विशेषताएँ लिखिए ।

प्रश्न 4. वाक्य की परिभाषा देते हुए अर्थ और रचना की दृष्टि से वाक्यों के प्रकार लिखिए। 20

अथवा  
समास का स्वरूप स्पष्ट करते हुए उसके प्रमुख भेदों का सामान्य परिचय दीजिए ।

प्रश्न 5. निम्न में से किन्हीं दो विषयों पर टिप्पणियाँ लिखिए।  
20

- क) लौकिक संस्कृत।
- ख) ब्रजभाषा।
- ग) अध्याहार।

## घ)देवनागरी लिपि का महत्व।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) XI
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	V
PAPER NAME	IDEOLOGICAL BACKGROUND OF MODERN HINDI LITERATURE आधुनिक हिन्दी साहित्य की वैचारिक पृष्ठभूमि
PAPER NO.	IX
COURSE CODE	UAHIN-606
LACTURE	45
CREDITS & MARKS	CREDITS - 4 & MARKS - 80

### आधुनिक हिंदी साहित्य की वैचारिक पृष्ठभूमि

इकाई- I

भारतीय नवजागरण आंदोलन और हिंदी साहित्य पर उसका प्रभाव

(सामाजिक दृष्टि से होने वाले वैचारिक एवं व्यावहारिक बदलाव के विशेष संदर्भ में)

- भारतीय नवजागरण आंदोलन

(ब्रह्म समाज, प्रार्थना समाज, रामकृष्ण मिशन, थियोसोफ़िकल सोसाइटी, सत्यशोधक समाज का सामान्य परिचय एवं मान्यताएँ)

- आर्य समाज के सामाजिक दार्शनिक सिद्धांतों का हिंदी कविता एवं उपन्यास पर प्रभाव



इकाई- II

- गांधीवाद : सामान्य परिचय एवं प्रमुख सिद्धान्त
- गांधीवादी चिंतन का हिंदी कविता और उपन्यास पर

प्रभाव

इकाई- III

- मार्क्सवाद : सामान्य परिचय एवं प्रमुख सिद्धान्त
- मार्क्सवाद : हिंदी कविता और हिंदी कथा साहित्य पर

प्रभाव

- मनोविश्लेषणवाद और हिन्दी कथा साहित्य

इकाई- IV

- राष्ट्रीय चेतना का विकास और हिंदी पत्र-पत्रिकाएँ-  
(कविवचन सुधा, हरिश्चंद्र चन्द्रिका, भारतमित्र, आनंद  
कादंबिनी, सरस्वती,

प्रभा, चांद, माधुरी और मतवाला के विशेष संदर्भ

में)

सूचना: प्रकल्प – 20 अंक

( पाठ्यक्रम से संबंधित किसी भी विषय पर 15 से 20 पृष्ठों का प्रकल्प  
तैयार करना अपेक्षित है।)

### नमूना प्रश्न पत्र

Semester – V

Course – IX

अवधि : 02:30 घंटे

: 80

पूर्णांक

सूचना : 1. अंतिम प्रश्न अनिवार्य हैं।

2. शेष 4 प्रश्नों में से किन्हीं 3 प्रश्नों के उत्तर लिखें।

3. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. ब्रह्म समाज तथा प्रार्थना समाज का सामान्य परिचय  
देते हुए उनकी मान्यताओं पर प्रकाश डालिए। 20

अथवा

आर्य समाज के सामाजिक एवं दार्शनिक सिद्धान्त का हिन्दी कविता पर हुए प्रभाव को रेखांकित कीजिए।

प्रश्न 2. गांधीवादी चिंतन के हिन्दी कविता पर हुए प्रभाव को सोदाहरण समझाइए। 20

अथवा

गांधीवादी चिंतन की हिन्दी उपन्यास में किस प्रकार अभिव्यक्ति हुई है? चर्चा कीजिए।

प्रश्न 3. मार्क्सवाद के हिन्दी कविता पर हुए प्रभाव को सोदाहरण लिखिए। 20

अथवा

मनोविश्लेषणवाद से प्रभावित हिन्दी कथा साहित्य पर प्रकाश डालिए।

प्रश्न 4. राष्ट्रीय चेतना के विकास में 'सरस्वती' और 'मतवाला' पत्रिकाओं के योगदान को रेखांकित कीजिए। 20

अथवा

'हरिश्चंद्र चन्द्रिका' और 'चाँद' पत्रिकाओं ने राष्ट्रीय चेतना के विकास में अपना महत्वपूर्ण योगदान दिया है, स्पष्ट कीजिए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

क) सत्यशोधक समाज।

ख) गांधीवादी चिंतन का स्वरूप।

ग) मार्क्सवाद का स्वरूप।

घ) प्रभा पत्रिका।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) IX
-----------------	---------------------------

NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	VI
PAPER NAME	IDEOLOGICAL BACKGROUND OF MODERN HINDI LITERATURE आधुनिक हिन्दी साहित्य की वैचारिक पृष्ठभूमि
PAPER NO.	IX
COURSE CODE	UAHIN-606
LACTURE	45
CREDITS & MARKS	CREDITS - 4 & MARKS - 80

### आधुनिक हिंदी साहित्य की वैचारिक पृष्ठभूमि

इकाई- I

- स्त्री विमर्श : स्वरूप एवं प्रमुख सिद्धान्त
- स्त्री चेतना का हिंदी कविता पर प्रभाव
- स्त्री चेतना का हिन्दी कथा साहित्य पर प्रभाव

इकाई- II

- दलित विमर्श : स्वरूप एवं प्रमुख सिद्धान्त
- दलित चेतना का हिंदी कविता पर प्रभाव
- दलित चेतना का हिन्दी कथा साहित्य पर प्रभाव

इकाई- III

- आदिवासी विमर्श : हिन्दी कविता एवं कथा-साहित्य पर प्रभाव
- पर्यावरण विमर्श : हिन्दी कविता पर प्रभाव
- किन्नर विमर्श और हिन्दी कथा साहित्य

इकाई- IV

- स्वातंत्र्योत्तर पत्र-पत्रिकाएँ, विकास और वैविध्यता—  
नवभारत, नईदुनिया, साप्ताहिक हिन्दुस्तान, चन्दामामा,  
हंस, सारिका,

दिनमान, साहित्य कुंज (ई-पत्रिका), समालोचन (ई-पत्रिका) के विषेश संदर्भ में।

**सूचना:** प्रकल्प – 20 अंक

(पाठ्यक्रम से संबंधित किसी भी विषय पर 15 से 20 पृष्ठों का प्रकल्प तैयार करना अपेक्षित है।)

### संदर्भ ग्रंथ सूची-

1. सृजन का अंतर्पाठ उत्तर आधुनिक विमर्श – कृष्णदत्त पालीवाल, सामायिक प्रकाशन, नई दिल्ली।
2. अम्बेडकर संचयन (२खंड) संकलन \सम्पादन रामजी यादव – सामायिक प्रकाशन, नई दिल्ली।
3. ज्योतिबा फुले संचयन संकलन\सम्पादन रामजी यादव – सामायिक प्रकाशन, नई दिल्ली।
4. आदिवासी लेखन : एक उभरती चेतना, रमणिका गुप्ता – सामायिक प्रकाशन, नई दिल्ली।
5. आदिवासी समाज और साहित्य – रमणिका गुप्ता, सामायिक प्रकाशन, नई दिल्ली।
6. हिंदी दलित साहित्य : एक मूल्यांकन – प्रमोद कोवप्रत, वाणी प्रकाशन, नई दिल्ली।
7. दलित दर्शन की वैचारिकी – बी. आर. विप्लवी, वाणी प्रकाशन, नई दिल्ली।
8. समकालीन आलोचना विमर्श – अवधेश सिंह, वाणी प्रकाशन, नई दिल्ली।
9. मार्क्सवाद और साहित्य – शिवकुमार मिश्र, वाणी प्रकाशन, नई दिल्ली।
10. मार्क्सवादी साहित्य चिंतन – शिवकुमार मिश्र, वाणी प्रकाशन, नई दिल्ली।
11. समकालीन हिंदी साहित्य : विविध विमर्श – प्रो. श्रीराम शर्मा, वाणी प्रकाशन, नई दिल्ली।
12. सत्य के साथ मेरे प्रयोग – महात्मा गाँधी, प्रकाशन नई दिल्ली।

13. गाँधी जी की देन – डॉ. राजेंद्र प्रसाद, प्रभात प्रकाशन नई दिल्ली।
14. महिला सशक्तिकरण : दशा और दिशा – योगेंद्र शर्मा, राजकमल प्रकाशन, नई दिल्ली।
15. स्त्री अलक्षित – श्रीकांत यादव, राजकमल प्रकाशन समूह, नई दिल्ली।
16. नारी चेतना के आयाम – अलका प्रसाद, राजकमल प्रकाशन समूह, नई दिल्ली।
17. स्वाधीनता का स्त्री पक्ष – अनामिका, राजकमल प्रकाशन समूह, नई दिल्ली।
18. स्त्री चिंतन की चुनौतियाँ – रेखा कस्तवार, राजकमल प्रकाशन समूह, नई दिल्ली।
19. आधुनिक हिंदी कथा साहित्य और मनोविज्ञान – डॉ. देवराज उपाध्याय
20. प्रगतिवादी समीक्षक और डॉ. रामविलस शर्मा – डॉ. मोहसिन खान, लेखनी प्रकाशन, दिल्ली।
23. थर्ड जेंडर विमर्श – शरद सिंह (संपा), विकास प्रकाशन, कानपुर
24. थर्ड जेंडर : कथा आलोचना – डॉ. फ़ीरोज़ (संपा.), विकास प्रकाशन, कानपुर।
25. किन्नर विमर्श : दशा और दिशा – डॉ. विनय कुमार पाठक विकास प्रकाशन, कानपुर।
26. भारतीय समाज में किन्नरों का यथार्थ – आशीष कुमार (संपा.), विकास प्रकाशन, कानपुर।
27. किन्नर विमर्श : साहित्य के आईने में – डॉ. इकरार अहमद, विकास प्रकाशन, कानपुर।
28. थर्ड जेंडर : अतीत और वर्तमान – डॉ. फ़ीरोज़ (संपा.), विकास प्रकाशन, कानपुर।
29. थर्ड जेंडर और साहित्य – डॉ. फ़ीरोज़ (संपा.), विकास प्रकाशन, कानपुर।
30. सिनेमा की निगाह में थर्ड जेंडर – डॉ. फ़ीरोज़ (संपा.), विकास प्रकाशन, कानपुर।

नमूना प्रश्न पत्र

Semester – VI

Course – IX

अवधि : 02:30 घंटे

80

पूर्णांक :

- सूचना : 1. अंतिम प्रश्न अनिवार्य हैं।  
2. शेष 4 प्रश्नों में से किन्हीं 3 प्रश्नों के उत्तर लिखें।  
3. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. स्त्री चेतना ने हिन्दी कथा साहित्य को किस प्रकार प्रभावित किया है, स्पष्ट कीजिए। 20

अथवा

स्त्री चेतना से हिन्दी कविता किस प्रकार प्रभावित हुई है, स्पष्ट कीजिए।

प्रश्न 2. दलित चेतना के हिन्दी कविता पर हुए प्रभाव को सोदाहरण समझाइए। 20

अथवा

दलित चेतना के हिन्दी कथा साहित्य पर हुए प्रभाव को दर्शाइए।

प्रश्न 3. समकालीन हिन्दी उपन्यासों में आदिवासी विमर्श की अभिव्यक्ति किस प्रकार हुई है, स्पष्ट कीजिए। 20

अथवा

समकालीन किन्नर केन्द्रित कथा साहित्य में किन्नर-जीवन पर प्रकाश डालिए।

प्रश्न 4. 'हंस' में स्वातंत्र्योत्तर जन-चेतना को किस प्रकार वाणी मिली है, स्पष्ट कीजिए। 20

अथवा

'समालोचन' (ई-पत्रिका) तथा 'साहित्य कुंज' (ई-पत्रिका) ने स्वातंत्र्योत्तर जन-चेतना को अभिव्यक्त करने में अपनी महत्वपूर्ण भूमिका निभाई है, स्पष्ट कीजिए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

क) स्त्री विमर्श के सिद्धान्त।

ख) दलित चेतना का स्वरूप।

ग) पर्यावरण विमर्श और हिन्दी कविता।

घ) नवभारत।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) IX
NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	V
PAPER NAME	MASS MEDIA, संचार माध्यम
PAPER NO.	IX
COURSE CODE	UAHIN-506
LACTURE	45
CREDITS & MARKS	4 & 80

### संचार माध्यम

इकाई- I जनसंचार माध्यम-

- जनसंचार : अर्थ, परिभाषा, अवधारणा एवं स्वरूप
- जनसंचार : तत्त्व एवं विशेषताएँ
- जनसंचार : प्रक्रिया, उपयोगिता, महत्व एवं बदलता

स्वरूप

इकाई- II मुद्रण कला सामान्य परिचय-

- मुद्रण कला का अर्थ एवं स्वरूप एवं विशेषताएँ
- मुद्रण कला का इतिहास एवं विकास
- प्रूफ़ शोधन : अर्थ, स्वरूप, प्रूफ़ शोधक के गुण एवं कर्तव्य

इकाई- III इलेक्ट्रॉनिक दृश्य, श्रव्य जनसंचार माध्यम-

● रेडियो : अवधारणा, विकास, कार्यक्रम एवं उद्घोषक के गुण-कर्तव्य

- सिनेमा : स्वरूप, विकास एवं पटकथा लेखन
- टेलीविज़न : स्वरूप, विकास एवं धारावाहिक लेखन

इकाई- IV अत्याधुनिक जनसंचार माध्यम : उपयोग एवं दिशाएँ-

- वेब पत्रकारिता अवधारणा एवं विशेषताएँ
- वेब पत्रकारिता तकनीक, उपयोगिता एवं भविष्य
- प्रमुख वेब संस्करण : समाचार पत्र, पत्रिकाएँ, रेडियो एवं समाचार चैनल

सूचना: प्रकल्प – 20 अंक

(पाठ्यक्रम से संबंधित किसी भी विषय पर 15 से 20 पृष्ठों का प्रकल्प तैयार करना अपेक्षित है।)

### नमूना प्रश्न पत्र

Semester – VI

Course – IX

अवधि : 02:30 घंटे

80

पूर्णांक :

सूचना : 1. अंतिम प्रश्न अनिवार्य हैं।

2. शेष 4 प्रश्नों में से किन्हीं 3 प्रश्नों के उत्तर लिखें।

3. सभी प्रश्नों के लिए समान अंक हैं।



प्रश्न 1. जनसंचार की अवधारणा एवं स्वरूप पर प्रकाश डालिए। 20

अथवा  
जनसंचार की प्रक्रिया को स्पष्ट कीजिए।

प्रश्न 2. मुद्रण कला का अर्थ एवं स्वरूप एवं विशेषताएँ स्पष्ट करें। 20

अथवा  
पूँर शोधक के गुण एवं कर्तव्य स्पष्ट करें।

प्रश्न 3. सिनेमा का स्वरूप और विकास दर्शाएँ। 20

अथवा  
रेडियो उद्घोषक के गुण-कर्तव्य स्पष्ट करें।

प्रश्न 4. वेब पत्रकारिता अवधारणा एवं विशेषताएँ लिखिए। 20

अथवा  
वेब पत्रकारिता तकनीक, उपयोगिता दर्शाइए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

- क) जनसंचार के तत्त्व।
- ख) मुद्रण कला की विशेषताएँ।
- ग) धारावाहिक लेखन।
- घ) वेब संस्करण समाचार पत्र।

NAME OF PROGRAM	T. Y. B. A. (C.B.C.S.) IX
-----------------	---------------------------

NAME OF THE COURSE	T.Y.B.A. HINDI
SEMESTER	VI
PAPER NAME	MASS MEDIA, संचार माध्यम
PAPER NO.	IX
COURSE CODE	UAHIN-606
LACTURE	45
CREDITS & MARKS	4 & 80

### संचार माध्यम

#### इकाई- I जनसम्पर्क-

- जनसम्पर्क : अर्थ, परिभाषा, उद्देश्य और महत्व
- जनसम्पर्क : उद्भव, विकास, क्षेत्र एवं साधन
- जनसम्पर्क : संभावनाएँ और चुनौतियाँ

#### इकाई- II विज्ञापन-

- विज्ञापन : अर्थ परिभाषा, स्वरूप, महत्व और विशेषताएँ
- विज्ञापन : उद्देश्य, प्रकार और सामाजिक उपयोगिता
- विज्ञापन : उपभोक्ता, एजेंसियाँ, नैतिकता और कानून

#### इकाई- III वृत्तचित्र और लघुफ़िल्म-

- वृत्तचित्र : अर्थ एवं स्वरूप, सामान्य परिचय, महत्व एवं उपयोगिता
- लघुफ़िल्म : अर्थ एवं स्वरूप, सामान्य परिचय, महत्व एवं उपयोगिता

- वृत्तचित्र एवं लघुफ़िल्म के उद्देश्य और प्रकार

#### इकाई- IV मीडिया : सरोकार एवं अंतर्संबंध-

- मीडिया : सामाजिक मुद्दे और समस्याएँ
- मीडिया : उत्तरदायित्व और राष्ट्रीय विकास
- मीडिया : आचार संहिता और बाज़ारवाद

सूचना: प्रकल्प – 20 अंक

(पाठ्यक्रम से संबंधित किसी भी विषय पर 15 से 20 पृष्ठों का प्रकल्प तैयार करना अपेक्षित है।)

## संदर्भ ग्रंथ सूची-

1. सूचना प्रौद्योगिकी और समाचार पत्र – रवीन्द्र शुक्ल, राधाकृष्ण प्रकाशन, नई दिल्ली।
2. सूचना प्रौद्योगिकी और जन-माध्यम – प्रो. हरिमोहन, तक्षशिला प्रकाशन, नई दिल्ली।
3. सोशल मीडिया में साहित्य का बदलता स्वरूप – आरती सिंह, डॉ. विभा ठाकुर (सं.), स्वराज प्रकाशन, नई दिल्ली।
4. मीडिया लेखन – सुमित मोहन, वाणी प्रकाशन, नई दिल्ली।
5. मीडिया लेखन कला – निशांत सिंह, ओमेगा पब्लिकेशन, नई दिल्ली।
6. आधुनिक जन-संचार और हिन्दी – प्रो. हरिमोहन, तक्षशिला प्रकाशन, नई दिल्ली।
7. मीडिया और हिन्दी भाषा का स्वरूप – डॉ. मनीष गोहिल, साधना प्रकाशन, कानपुर।
8. मीडिया कालीन हिन्दी स्वरूप एवं संभावनाएँ – डॉ. अर्जुन चव्हाण, राधाकृष्ण प्रकाशन, नई दिल्ली।
9. कंप्यूटर और हिन्दी – प्रो. हरिमोहन, तक्षशीला प्रकाशन, नई दिल्ली।
10. दूरसंचार और सूचना प्रौद्योगिकी – डी. डी. ओझा, सत्यप्रकाश, ज्ञान गंगा प्रकाशन, दिल्ली।
11. जनसंचार का समाजशास्त्र – लक्ष्मेंद्र चोपड़ा, आधार प्रकाशन, पंचकुला।
12. जनसंचार एवं समाज – डॉ. मोनिका नागोरी, अंकुर प्रकाशन, उदयपुर।
13. संचार से जनसंचार और जनसम्पर्क तक – बलवीर कुंदरा, के. के. पब्लिकेशन, नई दिल्ली।

14. इलेक्ट्रॉनिक मीडिया एवं सायबर पत्रकारिता – राकेश कुमार, श्री. नटराज प्रकाशन, दिल्ली।
15. नए जनसंचार माध्यम और हिन्दी – सं. सुधीश पचौरी, अचला शर्मा, राजकमल प्रकाशन, नई दिल्ली।
16. समकालीन भारत एवं जनसंचार माध्यम – डॉ. सुधीर सोनी, युनिवर्सिटी पब्लिकेशन, जयपुर।
17. जनसंचार माध्यम भाषा और साहित्य – सुधीश पचौरी, श्री. नटराज प्रकाशन, नई दिल्ली।
18. इंटरनेट पत्रकारिता – सुदेश कुमार, तक्षशीला प्रकाशन, नई दिल्ली।
19. इलेक्ट्रॉनिक मीडिया लेखन – डॉ. हरीश अरोड़ा, के. के. पब्लिकेशन, नई दिल्ली।
20. मीडिया और साहित्य – डॉ. योगेंद्र प्रताप सिंह, साहित्य रत्नाकर, कानपुर।
21. मीडिया के बदलते तेवर – अनामीशरण बबल, श्री. नटराज प्रकाशन, दिल्ली।
22. वेब पत्रकारिता – श्याम माथुर, राजस्थान हिन्दी ग्रंथ अकादमी, जयपुर।
23. जनसंचार माध्यमों में हिन्दी – चन्द्र कुमार, क्लासिकल पब्लिशिंग कंपनी, नई दिल्ली।
24. इलेक्ट्रॉनिक मीडिया – डॉ. सुधीर सोनी, युनिवर्सिटी पब्लिकेशन, जयपुर।
25. विकास संचार एवं नयी सूचना प्रौद्योगिकी – डॉ. सुधीर सोनी, युनिवर्सिटी पब्लिकेशन, जयपुर।
26. सोशल मीडिया के विविध आयाम – सं. डॉ. मोहम्मद फरियाद, स्वराज प्रकाशन, नई दिल्ली।
27. रेडियो और दूरदर्शन पत्रकारिता – डॉ. हरिमोहन, तक्षशीला प्रकाशन, दरियागंज, नई दिल्ली।

नमूना प्रश्न पत्र

Semester – VI

Course – IX

अवधि : 02:30 घंटे

पूर्णांक :

80

- सूचना : 1. अंतिम प्रश्न अनिवार्य हैं।  
2. शेष 4 प्रश्नों में से किन्हीं 3 प्रश्नों के उत्तर लिखें।  
3. सभी प्रश्नों के लिए समान अंक हैं।

प्रश्न 1. जनसम्पर्क का अर्थ, परिभाषा और महत्व दर्शाइए। 20  
अथवा  
जनसम्पर्क की संभावनाएँ और चुनौतियों को समझाइए।

प्रश्न 2. विज्ञापन की परिभाषा एवं स्वरूप पर प्रकाश डालिए।  
20  
अथवा  
विज्ञापन और कानून का सामान्य परिचय दीजिए।

प्रश्न 3. वृत्तचित्र का अर्थ स्पष्ट करते हुए उसके स्वरूप पर प्रकाश डालिए। 20

अथवा  
लघु फ़िल्मों की उपयोगिता एवं महत्व पर प्रकाश डालिए

प्रश्न 4. मीडिया और सामाजिक समस्याओं पर प्रकाश डालिए। 20

अथवा  
मीडिया के उत्तरदायित्व और राष्ट्रीय विकास के विषय में स्पष्ट कीजिए।

प्रश्न 5. किन्हीं दो विषयों पर टिप्पणियाँ लिखिए। 20

- क) जनसम्पर्क के साधन।
- ख) विज्ञापन की सामाजिक उपयोगिता।
- ग) वृत्तचित्र के प्रकार।
- घ) लघुफ़िल्म का उद्देश्य।

# UNIVERSITY OF MUMBAI



## SYLLABUS FOR THIRD YEAR BACHELOR OF ARTS AND

## BACHELOR OF SCIENCE

**Program: T.Y.B.A. and T.Y. B.Sc.**

**Course: Geography**

**Semester - V and VI at the T.Y.B.A. and T.Y. B.Sc.**

**Paper IV to IX**

**(Credit Based Semester and Grading System (CBSGS) with  
effect from the academic year 2018-19)**

**University of Mumbai**  
**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – V, Paper – IV**

**Subject Title: GEOGRAPHY OF SETTLEMENTS**

**COURSE CODE: \_\_\_\_\_ (2018-19), Credit: \_\_04\_\_**

<b>UNIT – I: Introduction of Settlement Geography</b>		<b>No. of Lectures</b>
<b>1.1</b>	Settlement geography: definitions, nature and scope	<b>12</b>
<b>1.2</b>	Settlement types, their characteristics and differences	
<b>1.3</b>	Factors influencing growth and distribution of settlements	
<b>1.4</b>	Importance of settlement studies in geography	
<b>UNIT – II: Geography of Rural Settlements</b>		<b>12</b>
<b>2.1</b>	Origin and growth of settlements - evolution of rural settlements	
<b>2.2</b>	Site and situation of rural settlements	
<b>2.3</b>	Classification of rural settlements on the basis of population and patterns	
<b>2.4</b>	Classification of rural settlements on the basis of spacing and functions	
<b>UNIT – III: Rural Settlements in India</b>		<b>12</b>
<b>3.1</b>	Distribution and density of rural settlements in India	
<b>3.2</b>	Structure of house and building materials in India	
<b>3.3</b>	Regional variations in rural settlement patterns in India	
<b>3.4</b>	Morphology of rural settlement in India	
<b>UNIT – IV: Urban Settlements</b>		<b>12</b>
<b>4.1</b>	Origin and growth of urban settlements	
<b>4.2</b>	Classification of urban settlements on the basis of culture and functions	
<b>4.3</b>	Hierarchy of urban Settlement: rank size rule and primate city	
<b>4.4</b>	Ashok Dutts's models of South Asian city: port city and bazaar city	
<b>UNIT – V: Urban Settlements in India</b>		<b>12</b>
<b>5.1</b>	Urbanisation in India: Trends, patterns and types of towns	
<b>5.2</b>	Morphology of urban settlements in India (With reference to a port and inland city)	
<b>5.3</b>	Urban problems in Indian cities	
<b>5.4</b>	Smart city: Concept, need and implementation in India	



## REFERENCES:

- Deshpande, C. D. (2005): “Cities: A Geographical Study”, Translated by V. G. Amrite, Manan Prakashan, Mumbai
- Gharpure, V. (2013): “Nagari Bhugol”, (Marathi) Pimpalpure and Company Publishers, Nagpur
- Gharpure, V. (2013): “Vasti Bhugol”, (Marathi) Pimpalpure and Company Publishers, Nagpur
- Gharpure, V. (2017): “Manavi Bhugol”, (Marathi) Pimpalpure and Company Publishers, Nagpur
- Ghosh. S. (2015): “Introduction to Settlement Geography”, Orient Blackswan Private Limited, Hyderabad
- Jyptirmoy Sen (2007): A Text Book of Social and Cultural Geography,” Kalyani Publsiher, New Delhi.
- Knowles, R and Wareing, J. (1996): “Economic and Social Geography”, the Made Simple Series, Rupa & Co., Calcutta
- Leong, Goh-Cheng and Morgan, G. (1994): “Human and Economic Geography”, Oxford University Press, Oxford
- Noble, A. (1998): “Using Descriptive Models to Understand South Asian Cities”, *Education About Asia*, Vol. 3, No. 3, Downloaded from <http://aas2.asian-studies.org/EAA/EAA-Archives/3/3/205.pdf>
- Siddhartha, K and Mukherjee, S. (2016): “Cities, Urbanisation and Urban Systems (Settlement Geography)”, KitabMahal, Allahabad
- Singh, L. R. (2009): “Fundamentals of Human Geography”, Sharda Pustak Bhawan, Allahabad
- Singh, R. Y. (2012): “Geography of Settlements”, Rawat Publications, Jaipur
- Tiwari, R. C. (2016): “Geography of India”, Pravalika Publications, Allahabad
- Thakur S. A. and others – “Settlement Geography”/ *Vasti Bhugol*- Konkan Geographers, Publication (2012)
- घारपुरे विठ्ठल (१९९९)वस्ती भूगोल, पिंपळापुरे अँड कं.,नागपूर

- सावंत प्रकाश (१९९८) नागरी भूगोल, फडके प्रकाशन, कोल्हापूर
- सवदी ए.बी. (२०१०) नागरी भूगोल, निराली प्रकाशन, पुणे

**QUESTION PAPER PATTERN:**

<b>Time: 3 hours</b>		<b>Marks; 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
<b>OR</b>		
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

**University of Mumbai**  
**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**  
**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – V Paper: V-A**  
**GEOGRAPHY OF MAHARASHTRA**

**COURSE CODE: \_\_\_\_\_, Credit: \_04\_\_\_\_\_**

<b>Unit-I : Maharashtra: Geographical Setting</b>		<b>TOTAL LECTURES</b>
1.1	Location, extent and boundaries	<b>12</b>
1.2	Administrative setup and divisions	
1.3	Relief and climate	
1.4	Drainage system	
<b>Unit-II : Natural Resources</b>		<b>12</b>
2.1	Soils	
2.2	Natural vegetation	
2.3	Minerals	
2.4	Power resources	
<b>Unit-III : Human Resources</b>		<b>12</b>
3.1	Population growth	
3.2	Distribution –urban-rural and population density	
3.3	Structure of population : Age-sex	
3.4	Occupational structure of population	
<b>Unit-IV :Agriculture, Fishing and Livestock Resources</b>		<b>12</b>
4.1	Salient features of agriculture	
4.2	Agricultural regions, recent issues and policies	
4.3	Fisheries, recent issues and policies	
4.4	Livestock resources recent issues and policies	
<b>Unit-V: Industries, Trade and Transport</b>		<b>12</b>
5.1	Major industrial regions	
5.2	Role of transport in industrial development	
5.3	Industrial issues and policies	
5.4	Trade and transport	

## References:

- Jaymala Diddee, S.R. Jog, V.S. Kale Geography of Maharashtra
- Johns: Economic Geography -
- Khullar: Geography of India
- Majid Hussein: Geography of India
- Oxford: Oxford School atlas-
- Savinder Singh Environmental Geography
- Sharma: India's economic and commercial geography
- प्रा.सवदी: महाराष्ट्रभूगोल
- देशपांडेएसएस: महाराष्ट्राचेअर्थशास्त्र
- महाराष्ट्राचाभूगोल - प्रा.सी.डीदेशपांडे
- महाराष्ट्र- सवदीआणिकेचे
- महाराष्ट्राचाभूगोल - बी.अरूणाचलम
- महाराष्ट्र 2006 - संतोषदास्ताने
- जनगणनाऑटलस – महाराष्ट्रसरकार
- महाराष्ट्राचेनकाशे-डॉ.के.आरदिकित
- महाराष्ट्रातीलजलसंपदा- प्रा. डॉ.एस.व्ही.ढमढेरे
- महाराष्ट्रातीलनद्या – श्रीकांततापीकर
- महाराष्ट्राचाभूगोल – डॉ.सुरेशफुले

### QUESTION PAPER PATTERN:

<b>Time: 3 hours</b>		<b>Marks: 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
<b>OR</b>		
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

\*\*\*\*\*

**University of Mumbai**  
**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**  
**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – V, Paper : V-B**

**Subject Title: POPULATION GEOGRAPHY**  
**COURSE CODE: \_\_\_\_\_, Credit: 04\_\_\_\_\_**

<b>UNIT- I, Introduction to Population Geography</b>		<b>TOTAL LECTURES</b>
<b>1.1</b>	Concept, definition, nature, scope, importance	<b>12</b>
<b>1.2</b>	Evolution and recent trends	
<b>1.3</b>	Basic sources of population data and their important elements	
<b>1.4</b>	Population geography and other social sciences	
<b>UNIT- II, Population Dynamics</b>		<b>12</b>
<b>2.1</b>	Population growth in the world (continent wise and level of development)	
<b>2.2</b>	Population growth in India	
<b>2.3</b>	World : Population density and its determinants	
<b>2.4</b>	Structure of population in developed and developing world ( Age and Sex, Rural and Urban)	
<b>UNIT- III, Theories of Population Growth</b>		<b>12</b>
<b>3.1</b>	Demographic Transition Model	
<b>3.2</b>	Malthu's Population Theory	
<b>3.3</b>	Leibestein's motivational theory of population growth	
<b>3.4</b>	Theory of optimum population	
<b>UNIT- IV, Migration</b>		<b>12</b>
<b>4.1</b>	Definition and Classification of Migration	

4.2	Causes and Consequences of Migration	
4.3	Recent trend of migration in India	
4.4	Issues of infiltration and its impacts in India	
<b>UNIT- V, Contemporary Issues</b>		<b>12</b>
5.1	Ageing population	
5.2	Gender issues -declining sex ratio, literacy gap,	
5.3	Poverty and unemployment in India	
5.4	Rapid urbanization in India	

**Reference:**

- Bhende A. and Kanitkar T.,(2000):*Principles of Population Studies*, Himalaya Publishing House
- Chandna R.C. and Sidhu M.S., 1980: *An Introduction to Population Geography*, Kalyani Publishers
- Chandna, R C (2006), *Jansankhya Bhugol*, Kalyani Publishers, Delhi
- Chandna, R C (2014),: *Geography of Population: Concepts, Determinants and Patterns*, Kalyani Publishers, Delhi
- Tiwari Ram Kumar (2015) *Jansankhya Bhugol Pravalika* Publication, Allahabad
- Thakur, Patil, Datta, Pednekar, Roy, and Kamble (2016): *Population Geography*, Konkan Geographers Association in India
- Roy. D. (2015) *Population Geography*, Books & Allied Publication, Kolkata

**QUESTION PAPER PATTERN:**

<b>Time: 3 hours</b>		<b>Marks; 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or	20 Marks

	Two short answer questions each 10 Marks	
Q. 2	Long answer question on Unit-II	20 Marks
	<b>OR</b>	
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
	<b>OR</b>	
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
	<b>OR</b>	
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
	<b>OR</b>	
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

\*\*\*\*\*



**University of Mumbai**  
**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**  
**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – V. Paper No: VI**

**Subject Title: TOOLS AND TECHNIQUES IN GEOGRAPHY FOR  
SPATIAL ANALYSIS-I (Practical)**

**COURSE CODE: \_\_\_\_\_, Credit: \_\_03\_\_**

<b>Unit -I</b>	<b>Map Projections</b>	<b>Lectures</b>
	1.1. Basic Concepts – Definition, scale, direction, azimuth, graticule, great circle, true meridian, types of projections, choice of projections	09
	1.2. Zenithal Polar Projections – Equal Area, Equidistant	
	1.3. Cylindrical Projections - Equal Area, Equidistant	
	1.4. Conical Projections - One standard parallel, two standard parallel	
<b>Unit-II</b>	<b>Map Basic</b>	
	2.1. Basic elements of map and calculation or identification of relief, direction, bearing and distance	09
	2.2. Area calculation with square method and strip method	
	2.3. Demarcation of watershed on toposheet, Tracing of stream network and contours	
<b>Unit-III</b>	<b>Survey of India Toposheets</b>	
	3.1. Signs and symbols, marginal information	09
	3.2. Study of physiography, drainage and vegetation (one full toposheet of hilly and plateau region each)	
	3.3. Study of settlements – size, pattern, utilities (one full toposheet of plains and urban region each)	
	3.4. Study of transport network (one full toposheet of plains and urban area each)	
<b>Unit-III</b>	<b>Preparation of Thematic maps (Manually)</b>	
	4.1. Preparation of a district thematic maps with actual data- Dot and Pictogram	09
	4.2. Preparation of a district thematic maps with actual data- Choropleth and Isopleth	
	4.3. Preparation of a district thematic maps with actual data- Located bar, located circle and pie chart	
<b>Unit-V</b>	<b>Use of computers in geographical data representation</b>	
	5.1. Construction of line graphs & simple and multiple bar graphs	09

	using MS-excel	
	5.2. Construction of divided bar graphs & pie charts using MS-excel	
	5.3. Preparation of datasheet in SPSS	
	5.4. Calculation of central tendency and standard deviation using SPSS	

## References -

- Ahirrao ani Karanjkehe – प्रात्यक्षिक भूगोल,
- Karlekar Shrikant- प्रात्यक्षिक भूगोल, डायमंड पब्लिकेशन्स
- Karlekar Shrikant- Bhoogol shastratil Sanshodhan Paddhati, डायमंड पब्लिकेशन्स
- Monkhouse F.J. - Maps & Diagrams, Methuen and Co., London, 1971 (3rd Edition, Revised).
- NCERT - Textbook for Class-12, Practical Work in Geography Part II
- Peter A. Rogerson - Statistical Methods for Geography, Sege Publishers -2001
- Robinson A.H. - Elements of Cartography, Wiley
- Sarkar Ashis - Practical Geography, Orient Black Swan – 2015
- Sarkar Ashis –Quantitative Geography, Orient Black Swan – 2013
- Singh R.L. & Singh P. B. - Elements of Practical Geography, Kalyani Publishers 2005
- Stoddard Robert – Field techniques and research methods in geography, Geography faculty publication <http://digitalcommons.unl.edu/geographyfacpub/26>
- Thakur S. A. - प्रात्यक्षिक भूगोल, Konkan Geographer's publication (2016)

## QUESTION PAPER PATTERN

(SEM - VI)

MARKS: - 100 TIME: 4 HRS

N.B:

1. All questions are compulsory.
2. Figures to the right indicate marks to a sub-question.
3. Use of map stencils and simple calculator is allowed.

Q. 1	Unit-I	16 Marks
Q. 2	Unit-II	16 Marks
Q. 3	Unit-III	16 Marks
Q. 4	Unit-IV	16 Marks
Q. 5	Unit-V	16 Marks
Q. 6	Journal and Viva	20 Marks

**University of Mumbai**

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – V, Paper – VII**

**Subject title: REGIONAL PLANNING AND DEVELOPMENT**

**COURSE CODE: \_\_\_\_\_ (2018-19), Credit: 04\_\_\_\_\_**

<b>UNIT – I: Understanding Regional Planning</b>		<b>No. of Lectures</b>
1.1	Planning: Concept, types and need	<b>12</b>
1.2	Regional planning: Concept, nature, relation with Geography	
1.3	Role of surveys and geospatial technology in regional planning	
1.4	Problems associated with regional planning	
<b>UNIT – II: Concept of Region in Planning</b>		<b>12</b>
2.1	Region: Concept, types and delineation	
2.2	Planning Regions: Need, characteristics and hierarchy	
2.3	Demarcation of planning regions: Principles, criteria and methods	
2.4	Perroux's Growth Pole Theory and regional planning	
<b>UNIT – III: Understanding Regional Development</b>		<b>12</b>
3.1	Development: Concept and indicators	
3.2	Regional disparities in development: Concept and measurements	
3.3	Spatial and Non-Spatial Models of Development with Special Reference to Rostow's Model and Myrdal's Model	
3.4	Strategies for regional development	
<b>UNIT – IV: Regional Planning in India – I</b>		<b>12</b>
4.1	Five-Year Plans: Features, achievements and failure	
4.2	Multi-level planning in India	
4.3	Planning regions of India	
4.4	Changing planning mechanism of India: NITI Ayog	
<b>UNIT – V: Regional Planning in India – II</b>		<b>12</b>
5.1	Micro level planning in rural area	
5.2	Backward area development programme	
5.3	Urban fringe of Indian cities: Problems and planning	
5.4	Metropolitan Planning: A Case of Mumbai Metropolitan Region	

## **REFERENCES:**

- Chand, Mahesh (2000): “Regional Planning In India”, Allied Publishers Ltd., Mumbai
- Chandana, R. C. (2016): “Regional Planning and Development”, Kalyani Publishers, New Delhi
- Dhamdhere, S. et al (2015): “Arthik Vikas Ani Niyojan”, (Marathi), Diamond Publications, Pune
- Dikshit, J. K. (2011): “The Urban Fringe of Indian Cities: Professor Jaymala Diddee Felicitation Volume”, (ed.) Rawat Publications, Jaipur
- Jhingan, M. L. (2017): “The Economics of Development and Planning”, Vrinda Publications (P) Limited, Delhi
- Kant, S. et al (2004): “Reinventing Regional Development: Festschrift to Honour Gopal Krishnan”, (ed.) Rawat Publications, Jaipur
- Misra, R. P. (2002): “Regional Planning”, Concept Publishing Co., New Delhi
- NITI Ayog (2017): “Three Year Action Plan (2017-18 to 2019-20)”, NITI Ayog, New Delhi
- Tiwari, R. C. (2016): “Geography of India”, Pravalika Publications, Allahabad

## **Books for further reading:**

- Bhargava, G. (2001): “Development of India’s Urban, Rural, and Regional Planning in 21<sup>st</sup> Century: Policy Perspective”, Gyan Publishing House, Delhi
- Datt, G. And Mahajan, A. (2016): “Datt and Sundaram’s Indian Economy”, S. Chand Publishing, New Delhi
- Devi, Laxmi (2000): “Planning Development and Regional Disparities”, (ed.) Anmol Publications, New Delhi
- Dhamdhere, S. and Shinde, S. (2010): “Bhartiya Ani Jagtik Arthik Vikas” (Marathi), Diamond Publications, Pune
- Hall, P. (2016): “Urban and Regional Planning” Routledge, London
- Knowles, R and Wareing, J. (1996): “Economic and Social Geography”, the Made Simple Series, Rupa& Co., Calcutta

- Sundaram, K. V. (1985): “Geography and Planning: Essays in Honour of Prof. V. L. S. PrakasaRao”, Concept Publishing Co., New Delhi
- Sundaram, K. V. (1989): “Regional Planning and Development: Essays on Space, Society, and Development in Honour of Professor R. P. Misra”, Heritage Publishers, New Delhi
- Vidyarthi, A. et al (2017): “Understanding India’s New Approach to Spatial Planning and Development: A Spatial Shift?”, Oxford University Press, New Delhi
- Yojana, Monthly Journal Published in English and Marathi by Government of Maharashtra

#### IMPORTANT WEBSITES / WEB LINKS:

[mmrda.maharashtra.gov.in](http://mmrda.maharashtra.gov.in)

[niti.gov.in](http://niti.gov.in)

[planningcommission.gov.in](http://planningcommission.gov.in)

[yojana.gov.in](http://yojana.gov.in)

#### QUESTION PAPER PATTERN:

<b>Time: 3 hours</b>		<b>Marks; 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks	20 Marks

	or Two short answer questions each 10 Marks	
Q. 4	Long answer question on Unit-IV	20 Marks
	<b>OR</b>	
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
	<b>OR</b>	
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

## University of Mumbai

### Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS) T.Y.B.A./T.Y.B.Sc. Geography, Semester – V, Paper – VIII - A

#### Subject Title: GEOGRAPHY OF RESOURCES

**COURSE CODE:** \_\_\_\_\_ (2018-19), **Credit:** 04

UNIT – I: Introduction to the Resources		TOTAL LECTURES
1.1	Meaning and importance of the natural resources	12
1.2	Factors influencing on resource utilization and related theories	
1.3	Classification of resources	
1.4	Issues with renewable and non-renewable resources	
UNIT – II: Natural resources: over exploitation and conservation measures		12
2.1	Over exploitation and depletion of natural resources	
2.2	Resource consumption pattern in the developed and underdeveloped countries	
2.3	Need and measures for resource conservation	
2.4	Sustainable use of natural resources	
UNIT – III: Natural Resources, Part –I		12
3.1	Distribution of water resources on the Earth	
3.2	Water consumption pattern, water pollution and water conservation	
3.3	Distribution of forest resources in the world	
3.4	Deforestation and forest conservation	
UNIT – IV: Natural Resources Part –II		12
4.1	Soil composition and factor affecting soil formation	
4.2	Soil degradation and its conservation	
4.3	Minerals and their classification	
4.4	Use of energy minerals and their conservation	
UNIT – V: Human Resources		12
5.1	Concept of human resource: skilled and unskilled workers	
5.2	Distribution of population in the world	
5.3	Concept of over, under and optimum population	
5.4	Population Resource regions	

#### Reference Books:

1. Chandna R.C. (2014): Geography of Population, Kalyani Publishers, Ludhiana, India
2. Gautam Alka (2010) Environmental Geography: Sharda Pustak Bhavan, Allahabad

3. GautamAlka: 2013: Advanced Economic Geography, Sharda Pustak Bhawan, Allahabad, India, Third Edition
4. Gautam Alka: Resource Geography, Sharda Pustak Bhawan, Allahabad, India,
5. Husain Majid, 2003: Resources Geography, Anmol Publications Pvt. Ltd. (2003)  
ISBN: 9788170418764
6. Khullar D. R. (2014) India: A Comprehensive Geography, Kalyani Publishers, ISBN-13: 978-9327246759
7. Mondal P and Dalai (2017) Sustainable Utilization of Natural Resources: CRC Press (2017)  
ISBN 9781498761833
8. Singh Savinder (2015): Environmental Geography: Prayag Pustak Company, Allahabad
9. Singh Vipul (2012) The Human Footprint on Environment: Issues in India, Macmillan Publishers India Pvt. Ltd, ISBN: 935-059-098-0
10. Verma C.L. (2014): Economic and Resource Geography, Forward Books; 1<sup>ST</sup> edition (2014)  
ISBN-10: 9381763534
11. Website: [https://www.researchgate.net/publication/280298490\\_Resource\\_Geography](https://www.researchgate.net/publication/280298490_Resource_Geography)
12. William A.: Nonfuel Minerals and the World Economy", Vogely, World Resources Institute Book Yale University Press

### QUESTION PAPER PATTERN:

Time: 3 hours		Marks; 100
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks



Q. 3	Long answer question on Unit-III	20 Marks
	<b>OR</b>	
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
	<b>OR</b>	
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
	<b>OR</b>	
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

\*\*\*\*\*

**University of Mumbai**

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester –V, Paper: VIII-B**

**Subject Title: GEOGRAPHY OF HEALTH**

**COURSE CODE: \_\_\_\_\_, Credit: 04\_\_**

<b>Unit I - Introduction to Geography of Health</b>		<b>TOTAL LECTURES</b>
1.1	Nature, scope and evolution geography of health	<b>12</b>
1.2	Conceptual background and components geography of health	
1.3	Significance and approaches geography of health	
1.4	Relation of geography of health with other branches of social science	
<b>Unit- II -The Pollution Syndrome</b>		<b>12</b>
2.1	Air Pollution: Causes, Effects and remedial measures	
2.2	Water Pollution: Causes, Effects and remedial measures	
2.3	Radioactive Pollution: Causes, Effects and remedial measures	
2.4	Plastic Pollution: Causes, Effects and remedial measures	
<b>Unit III - Geography of Diseases</b>		<b>12</b>
3.1	Weather-related diseases and climate change and Global health	
3.2	Types of diseases and their regional pattern	
3.3	Case studies of communicable diseases –malaria and HIV – Aids	
3.4	Case studies of non-communicable diseases – cancer and malnutrition	
<b>Unit IV -Health and Environment</b>		<b>12</b>
4.1	Linkages of health with environment	
4.2	Relation between development and health	
4.3	Population dynamics, urbanisation, poverty and inequality	
4.4	Migration and related health issues	
<b>Unit V - Health Care Facilities</b>		<b>12</b>
5.1	Health care facilities in India	
5.2	Spatial Distribution of health care facilities in Maharashtra	
5.3	Health care policies in India	
5.4	Health Organisations: WHO, UNISEF, Red Cross Society and NGOs	

## **References**

1. Alice E. Marczewski and Michael Kamrin: Toxicology for the Citizen.
2. B. Brockband, J.Cohrsson, and V.T. Covello: The Risk Assessment Manual: A Guide to Understanding and Using Health and Environmental Assessments
3. Marilyn O. Ruiz: Geography of Disease
4. Michael Emch, Elisabeth Dowling Root, and Margaret Carrel: Health and Medical Geography Fourth Edition
5. Rhonda Humbird: AP Environmental Science - Part 1: The Living World

### **QUESTION PAPER PATTERN:**

<b>Time: 3 hours</b>		<b>Marks; 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks

Q. 5	Long answer question on Unit-V	20 Marks
<b>OR</b>		
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

## University of Mumbai

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – V, Paper: VIII-C**

**Subject Title: GEOGRAPHY OF DISASTER MITIGATION and  
MANAGEMENT**

**COURSE CODE: \_\_\_\_\_, Credit: \_\_04\_\_**

<b>UNIT – I,        Meaning &amp; Concept of Disaster &amp; Hazard</b>		<b>No. of Lectures</b>
1.1	Concepts of Disaster, Hazard, Vulnerability and Risks	12
1.2	Typology of hazards & Disasters- Natural Disasters & Man-made Disasters	
1.3.	Impacts of Disasters – Socio-economic and political	
1.4.	Need of Disaster Management in India	
<b>UNIT – II, Elements of Disaster Management</b>		
2.1.	Disaster Management : Meaning & Concept	12
2.2.	Role of International Organisations for Disaster Management – UNISDR, INSARAG, Red Cross	
2.3	Role of National Organisations for Disaster Management	
2.4	Role of NGOs & Community in Disaster Management	
<b>UNIT – III, Disaster Management : Methods &amp; Approaches</b>		
3.1	Disaster Management : Historical Perspective	12
3.2	Disaster Management : Methods & Approaches	
3.3	Pre- Disaster Stage of Management	
3.4	Post- Disaster Stage of Management	
<b>UNIT- IV, Natural Disaster and its Management in India</b>		
4.1	Earthquake & Tsunami –Causes, Effects, Management	12

4.2	Flood – Distribution, Causes, Effects , Management	
4.3	Cyclone – Distribution, Causes, Effects , Management	
4.4	Famine – Distribution, Causes, Effects , Management	
<b>UNIT –V, Anthropogenic Disaster and its Management in India</b>		
5.1	Industrial Hazards – Causes, effects and management with reference to Bhopal Gas Tragedy	12
5.2	Terrorism – Causes, effects and management with reference to 26/11 Mumbai attack	
5.3	Wild Fire – Types, Causes, effects and management with reference to Uttarakhand forest fire 2016	
5.4	Accidents - Causes, effects and management with reference to Savitri river bridge collapse accident August 2016	

### References:

1. Coppola, D.P. (2011): Introduction to International Disaster Management. Elsevier, Butterworth- Heinemann
2. Dasgupta R. (2007): Disaster Management and Rehabilitation, Mittal Publications. New Delhi
3. Govt. Of India : Disaster Management in India , Ministry of Home Affairs, New Delhi
4. Murthy, D.B.N. (2008) : Disaster Management, Deep & Deep Publications Pvt. Ltd., New Delhi
5. Singh, Savindra and Singh, Jeetendra (2016) : Disaster Management, Pravalika Publications, Allahabad
6. गोडबोले, मराठे: आपत्ती व्यवस्थापन संकल्पना, डायमंड पब्लिकेशन्स, पुणे.
7. पठारे संभाजी, अजय चाकाने: आपत्ती निराकरण, डायमंड पब्लिकेशन्स, पुणे.
8. मोरे जोतीराम, अर्जुन मुसमाडे: आपत्ती व्यवस्थापनाचा भूगोल, डायमंड पब्लिकेशन्स, पुणे.

### QUESTION PAPER PATTERN:

<b>Time: 3 hours</b>		<b>Marks: 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
<b>OR</b>		
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

University of Mumbai  
Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)  
T.Y.B.A. / T.Y.B.Sc. Geography, Semester – V, Paper – IX  
Subject Title : GEOSPATIAL TECHNOLOGY

Course Code:

Credit-0 3

<b>UNIT - I</b>	<b>Remote Sensing – I</b>	<b>9</b>
1.1	Geospatial Technology: Concept, Components and Importance	
1.2	Remote Sensing: Concept, Process and Geographical Applications	
1.3	Electromagnetic Energy, EMR and EMS - Spectral Reflectance and Spectral Signature or Curve - Platforms, Sensors and Resolution	
1.4	Elements of Visual Image Interpretation - Mapping of Thematic Layers and Visual Image Interpretation of Physical and Manmade Features	
<b>UNIT - II</b>	<b>Remote Sensing – II</b>	<b>9</b>
2.1	Digital image analysis: landuse and landform classification, 3D view of DEM	
2.2	Aerial Photographs: Concept, Process and Types	
2.3	Interpretation of Aerial Photographs	
2.4	Advanced Remote Sensing Technology - Use of Bhuvan website	
<b>UNIT - III</b>	<b>Global Positioning System</b>	
3.1	GPS : Concept, Segments, Applications	
3.2	Types of GPS – GPS Data Accuracy and Errors	
3.3	Factors Affecting GPS Data - Global Navigation System	
3.4	Ground Survey and Demarcation of Point, Line and Polygon Features with GPS Device – Transfer GPS Data to Computer with Softwares like Easy GPS	
<b>UNIT - IV</b>	<b>Geographic Information System – I</b>	<b>9</b>
4.1	GIS : Concept, Components and Applications - Map Projection and Coordinate System	
4.2	GIS Data Acquisition and Types	
4.3	Importing Image into GIS Software and Geo-referencing	
4.4	Creating Layers by Digitization of Point, Line and Polygon Features	
<b>UNIT V</b>	<b>Geographic Information System – II</b>	<b>9</b>
5.1	Functions of Database Creation – Input, Editing and Linking	
5.2	Spatial Database Analysis: Overlay, Merge, Query	
5.3	Using Map-Composer for Map Layout and Design	
5.4	Preparation of Thematic Maps	

	<b>Paper – IX : GEOSPATIAL TECHNOLOGY</b> <b>Question Paper Pattern</b>	
Q. 1	Unit –I	16
Q. 2	Unit –II	16
Q. 3	Unit –III	16
Q. 4	Unit –IV	16
Q. 5	Unit –V	16
Q. 6	Preparation Thematic Maps by using Geospatial Technology Tools	10
Q. 7	Journal and Viva	10

**References:**

1. कार्लेकर, श्रीकांत (२००६): भौगोलिक माहिती प्रणाली, डायमंड प्रकाशन, पुणे.
2. कार्लेकर, श्रीकांत (२०१२): दूर संवेदन, डायमंड प्रकाशन, पुणे.
3. Afzal Sharieff and et. al. (Ed.) (2010): An Introduction to Remote Sensing, SARUP Book Publishers Pvt. Limited, New Delhi.
4. Anson, R. W. and Ormeling, F. J., (Ed.) (1993): Basic Cartography for Students and Technicians, Vol.I, International Cartographic Association and Elseiver Applied Science Publishers, London.
5. American Society of Photogrammetry (1983): Manual of Remote Sensing, ASP PalisChurch,V.A.
6. Agrawal, N.K.(2006), Essentials of GPS (Second Edition), Book Selection Centre, Hyderabad
7. Bhatia (2016): Remote Sensing and GIS, Oxford University Press, New Delhi.
8. Bhatia, S. C. (2008): Fundamentals of Remote Sensing, Atlantic Publishers and Distributors (P) Limited, New Delhi.
9. Bhatta Basudeb 2016: Remote Sensing and GIS, Oxford University Press, New Delhi
10. Barrett, E.G. and Curtis, L.F. (1992): Fundamentals of Remote Sensing in Air Photo-interpretation, McMillan, New York. 7.
11. Bernhardsen, Tor (2002): Geographical Information Systems: An Introduction, Third Edition, John Wiiey& Sons, Inc., New York.
12. Burrough, Peter A and McDonnell, R.A. (1998): Principles of Geographical Information Systems, Oxford University Press, Mumbai.
13. Campbell. J. (1989): Introduction to Remote Sensing, Guilford, New York.
14. Clarke, Keith C. (1998): Getting Started with Geographic Information Systems, Prentice-Hall Series in Geogl. Info. Science, Prentice-Hall, Inc. N.J.
15. Central Board of Secondary Education (New Delhi): Geospatial Technology – Textbook, Class XI and XII



16. Chaisman, N. 1992: Exploring Geographical Information Systems, John Wiley and Sons Inc., New York. Lillesand, T.M. and Kiefer, R. W. 1994: Remote Sensing and Image Interpretation, 3rd edition, John Wiley and Sons, New York.
17. Dickinson, G. C. (1977) Statistical Mapping and the Presentation of Statistics, Edward Arnold Ltd., London.
18. George B and Kolte P. E. (2010): The GIS Book, Cengage Learning India Private Limited, New Delhi.
19. George Joseph (2013): Fundamentals of Remote Sensing, Second Edition, Universities Press (India) Private Limited, Himayatnagar, Hyderabad.
20. Heywood, I. et al (2002): An Introduction to Geological Systems, Pearson Education Limited,
21. New Delhi.
22. Iliffe, J.C (2006), Datums and Map Projections for Remote Sensing, GIS and Surveying, Whittles Publishing, New York.
23. Jonson. R. J. (2003): Remote Sensing of the Environment-An Earth Resources Perspective
24. Kang-Tsang Chang (2010): Introduction to Geographic Information Systems, Tata McGraw Hill Edition, New Delhi.
25. Lillesand and Keifer (2010) Remote Sensing and Image Interpretation, Fourth Edition, Wiley.
26. Pearson Education Series in Geographical Information Science, Keith C. Clarke (Series editor) Pearson Educators Private Limited. (Singapore), New Delhi.
27. Monkhouse, F. J. and H. R. Wilkinson, (1971): Maps and Diagrams, Methuen & Co. Ltd., London.
28. Robinson, A. H. and Others (1995): Elements of Cartography, VI Edition, John Wiley & Sons, New York.
29. Sudhakar S (1993) : Forest Type and Density Mapping in Meghalaya through Digital Image Processing of Indian Remote Sensing Satellite Data, Collaborative project report by Meghalaya State Forest Dept. and RRSSC, Kharagpur.
30. Thomson O and Frank S (2000): Time – Integrative Geographic Information System, Springer, New York.
31. Training Module of Capacity Building Training Programme in Geospatial Technology sponsored by Department of Science and Technology, Government of India in collaboration of Himachal Pradesh University.
32. Tutorials from the - <http://dst-iget.in/tutorials>
33. [bhuvan.nrsc.gov.in/](http://bhuvan.nrsc.gov.in/)
34. <https://www.isro.gov.in>
35. <https://www.iirs.gov.in/>

## **SEMESTER –VI**

**University of Mumbai**

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – VI, Paper: IV**

**Subject Title: ENVIRONMENTAL GEOGRAPHY**

**COURSE CODE: \_\_\_\_\_ Credit: 04**

<b>UNIT -I</b>	<b>Introduction to Environmental Geography</b>		<b>No. of Lectures</b>
	1.1	Environmental Geography: Definition, Nature, Scope and Importance	
	1.2	Environment: Meaning, Factors and Types	
	1.3	Approaches to the Study of Man – Environment Relationship	
	1.4	Changing Man - Environment Relationship in Historical Perspective	
<b>UNIT-II</b>	<b>Ecosystem</b>		<b>12</b>
	2.1	Meaning and Structure of Ecosystem	
	2.2	Ecological Pyramids and Productivity of Ecosystem	
	2.3	Functions of Ecosystem: Food Chain & Web, Energy Transfer, Biogeochemical Cycles	
	2.4	Types of Ecosystems: Aquatic, Terrestrial, and Aqua-Terrestrial Ecosystems	
<b>UNIT-III</b>	<b>Biodiversity</b>		<b>12</b>
	3.1	Biodiversity: Concept, Types and Distribution	
	3.2	Biodiversity Hotspots: Concept, and Distribution in India with Special Reference Western Ghats	
	3.3	Threat to Biodiversity: Causes	
	3.4	Conservation of Biodiversity and Management of Biological Reserves	
<b>UNIT-IV</b>	<b>Environmental Challenges in India</b>		<b>12</b>
	4.1	Air pollution and Water Pollution: Cases and Effects	
	4.2	Land and Noise Pollution: Cases and Effects	
	4.3	Environmental Issues Related to High/large Dams	
	4.4	Major environmental Movements in India	
<b>UNIT-V</b>	<b>Sustainable Development and Environmental Management</b>		

	5.1	Concepts and Need of Sustainable Development and Environmental Management	12
	5.2	Eco-friendly Lifestyle and Need of Environmental Education	
	5.3	Biosphere Reserves and Wildlife Management in India	
	5.4	Environmental Impact Assessment	

#### Reference book:

- Bharucha, E. (2004): “A Textbook for Environmental Studies”, University Grants Commission, New Delhi, Downloaded from <https://www.ugc.ac.in/oldpdf/modelcurriculum/env.pdf>
- Cunningham, W, and Cunningham, M. (2017): “Principles of Environmental Science: Inquiry and Applications”, McGraw Hill Education, Delhi
- Gautam, A. (2010): “Environmental Geography”, Sharda Pustak Bhavan, Allahabad
- Karlekar, S. and Borges, J. (2008): “Diamond Bhugol- Paryavaran Shatra Kosh”, (Marathi), Diamond Publications, Pune
- Rajagopalan, R. (2016): “Environmental Studies: From Crisis to Core”, Oxford University Press, New Delhi
- Sangle, S. (2017): “Paryavaran Bhugol”, (Marathi), Diamond Publications, Pune
- Saxena, H. (2017): “Environmental Geography”, Rawat Publishers, Jaipur.
- Singh, S. (2017): “Environmental Geography”, Prayag Pustak Bhawan, Allahabad
- Parmar and other – “Pryavaran Bhugol” Himalaya Publishing House – Mumbai 2013
- Thakur and other - – “Pryavaran Bhugol” Konkan Geographer’s Publication

### QUESTION PAPER PATTERN:

<b>Time: 3 hours</b>		<b>Marks; 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
<b>OR</b>		
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

**University of Mumbai**  
**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**  
**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – VI**  
**Paper No. – V -A**  
**GEOGRAPHY OF TOURISM and RECREATION**

**COURSE CODE: \_\_\_\_\_, Credit: \_\_04\_\_**

Unit-I -Introduction to Tourism Geography		TOTAL LECTURES
1.1	Definition , Nature and Scope	12
1.2	Trends of Tourism Development in World	
1.3	Factors of Tourism Development - Geographical components	
1.4	Factors of Tourism Development - Socio-cultural and political	
Unit-II Types & Impact of Tourism		12
2.1	Types of Tourism,	
2.2	New Trends in Tourism,	
2.3	Positive impact of Tourism on Environment, Socio-culture and Economy	
2.4	Negative Impact of Tourism on Environment, Socio-culture and Economy	
Unit-III - Infrastructure of Tourism and Ancillary Services		12
3.1	Accommodation	
3.2	Transportation	
3.3	Travel Agencies and Tour Guide	
3.4	Documentation and Ticketing	
Unit-IV - Planning of Tourism and Organisation		12
4.1	Need of Planning and Elements of Planning	
4.2	Levels of Planning	
4.3	Tourism Organizations - IATA, PATA, I.T.D.C. and M.T.D.C	
4.4	Incredible India campaign	
Unit-V Potential Tourism Sectors in Maharashtra and Tourism Policy		12
5.1	Coastal tourism in Maharashtra	
5.2	Adventure tourism in Sahyadri	
5.3	Heritage tourism in Maharashtra	
5.4	Tourism Policy of Maharashtra State	

• **Reference Books**

1. Anand M.M., Tourism & Hotel Industry in India, Prentice Hall of India, New Delhi,

2. Bhatia A.K., Tourism Development, Sterling Publishers Pvt. Ltd. New Delhi.
3. Bhatia A.K., International Tourism, Sterling Publishers Pvt. Ltd. New Delhi
4. Bhatia A.K.,- Tourism in India , Sterling Publishers Pvt. Ltd. New Delhi
5. Geetanjali, Tourism Geography, Centrum press publishers, New Delhi
6. T.K. Sathyadev, P. Manjunath- Tourism Planning, Pacific books Internationals, Delhi.
7. Thakur S A (2016) : पर्यटन भूगोल, Konkan Geographer's Publication
8. चारपुरे ,विठ्ठल) २०१०:( पर्यटन भूगोल ,पिंपळापुरेआणिप्रकाशक ,नागपूर.

### QUESTION PAPER PATTERN:

Time: 3 hours		Marks; 100
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks or	20 Marks

	Two short answer questions each 10 Marks	
Q. 5	Long answer question on Unit-V	20 Marks
<b>OR</b>		
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

\*\*\*\*\*

## UNIVERSITY OF MUMBAI

### Syllabus for T.Y.B.A. Geography

(CBSGS with effect from Academic Year 2018-19)

SEMESTER-VI, Paper No. V -B

Subject Title: **POLITICAL GEOGRAPHY**

COURSE CODE: \_\_\_\_\_ (2018-19), Credit: 04

Units	Name of the Unit/Subunit	No of Lectures
<b>Unit – 1. : Introduction of Political Geography</b>		<b>(12)</b>
1.1	Definition, Nature and Scope of Political Geography	
1.2	Historical Development and Recent Trends in Political Geography	
1.3	Concept of state and factors	
1.4	Concept of Nation, Nation-State, and Nationalism	
<b>Unit – 2. : Approaches and Concepts in Political Geography</b>		<b>(12)</b>
2.1	Hartshorne’s Fundamental Approach: Centrifugal and Centripetal Forces	
2.2	Unified Field Theory	
2.3	Core Areas: Concept, Characteristics, and Distribution	
2.4	Capitals: Concept, Functions, and Classification	
<b>Unit – 3. : Frontiers and Boundaries</b>		<b>(12)</b>
3.1	Frontiers and Boundaries: Concepts and Distinction	
3.2	Functions of Frontiers and Boundaries	
3.3	Classification of Boundaries	
3.4	India’s Boundaries: Characteristics and Disputes	
<b>Unit – 4. : Geostrategic and Geopolitical Views</b>		<b>(12)</b>



4.1	Mackinder's Heartland and Spykman's Rimland Model	
4.2	Geopolitics of Indian Ocean	
4.3	Geopolitics of International Water Disputes with Special Reference to India	
4.4	Changing Political Map of India	
<b>Unit – 5. : Electoral Geography</b>		<b>(12)</b>
5.1	Concept, Nature and Approaches of Electoral Geography	
5.2	Geography of Voting: Geographical Factors Affecting Elections	
5.3	Spatial Organisation of Electoral Areas and Geography of Representation	
5.4	Challenges to Election System in India	

#### Reference Books:

- Adhikari, S. (2015): "Political Geography", Rawat Publications, Jaipur
- Adhikari, S. (2011): "Political Geography of India: A Contemporary Perspective", Sharda Pustak Bhawan, Allahabad
- Dikshit R. (1985): "Political Geography: A Contemporary Perspective" McGraw, Hill, New Delhi
- Dikshit, S. (1993): "Electoral Geography of India", Vishwavidyalaya Prakashan, Varanasi
- Dwivedi, R. (1996): "Political Geography" Chaitanya Prakashan, Allahabad
- Jones, M. (2004): "An Introduction to Political Geography: Space, Place and Politics", Routledge
- Muir, R. (1995): "Modern Political Geography", McMillan, London
- Painter, J. and Jeffrey, A. (2009): "Political Geography", Sage Publications
- Sinha, M. (2007): "Electoral Geography of India", Adhyayan Publications and Distributors, New Delhi
- धारपुरेविठ्ठल (२०१३)राजकीयभूगोल, पिंपळापुरेअँडकं.,नागपूर
- लाटकर, आपटे (१९९८)राजकीयभूगोल, विद्याप्रकाशन, नागपूर
- पाटीलविलास (२०१५)राजकीयभूगोल, प्रशांतपब्लिकेशन, जळगाव

### QUESTION PAPER PATTERN:

<b>Time: 3 hours</b>		<b>Marks: 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
<b>OR</b>		
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

\*\*\*\*\*

**University of Mumbai**

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester –VI, Paper No: VI**

**Subject Title: TOOLS AND TECHNIQUES IN GEOGRAPHY FOR  
SPATIAL ANALYSIS-II (Practical)**

**COURSE CODE: \_\_\_\_\_, Credit: \_\_03\_\_**

<b>Unit -I</b>	<b>Nature of data and central tendency</b>	<b>Lectures</b>
	1.1. Meaning and types of data, variable, observation, observation value, simple, discrete data and continuous data	09
	1.2. Frequency Distribution, Histogram, Frequency Polygon and Ogive	
	1.3. Measures of Central Tendency- mean, median and mode	
<b>Unit -II</b>	<b>Dispersion and Deviation</b>	
	2.1. Mean Deviation and Quartile Deviation	09
	2.2. Standard Deviation	
	2.3. Moving Averages (3 years and 5 years)	
<b>Unit -III</b>	<b>Correlation, Regression &amp; Hypothesis Testing</b>	
	3.1. Calculation of correlation coefficient - Pearson's and Spearman's methods	09
	3.2. Regression analysis	
	3.3. Chi square test	
<b>Unit-IV</b>	<b>Sampling</b>	
	4.1. Sample and sample design in geography	09
	4.2. Point sampling –Systematic and random	
	4.3. Line sampling – Systematic and random	
	4.4. Area sampling – Systematic and random	
<b>Unit-V</b>	<b>Field work in Geography of any one place/village</b>	<b>09</b>
	5.1. Collection of physiographic data – Field observation, field sketching, collection of soil and rock samples, identification of vegetation etc.	
	5.2. Collection of socio-economic data – interviews, questionnaire survey, visit to local governing office, NGO's etc.	
	5.3. Collection of geospatial data – toposheets, aerial photographs, Google images/maps, Bhuvan images etc.	
	To prepare a geographical report of a place with the help of an available 5.1, 5.2, and 5.3 aspects	

## References -

- Ahirrao ani Karanjkehele – प्रात्यक्षिक भूगोल,
- Karlekar Shrikant- प्रात्यक्षिक भूगोल, डायमंड पब्लिकेशन्स
- Karlekar Shrikant- Bhoogol shastratil Sanshodhan Paddhati, डायमंड पब्लिकेशन्स
- Monkhouse F.J. - Maps & Diagrams, Methuen and Co., London, 1971 (3rd Edition, Revised).
- NCERT - Textbook for Class-12, Practical Work in Geography Part II
- Peter A. Rogerson - Statistical Methods for Geography, Sege Publishers -2001
- Robinson A.H. - Elements of Cartography, Wiley
- Sarkar Ashis - Practical Geography, Orient Black Swan – 2015
- Sarkar Ashis –Quantitative Geography, Orient Black Swan – 2013
- Singh R.L. & Singh P. B. - Elements of Practical Geography, Kalyani Publishers 2005
- Stoddard Robert – Field techniques and research methods in geography, Geography faculty publication <http://digitalcommons.unl.edu/geographyfacpub/26>

## QUESTION PAPER PATTERN

(SEM - VI)

MARKS: - 100 TIME: 4 HRS

N.B:

4. All questions are compulsory.
5. Figures to the right indicate marks to a sub-question.
6. Use of map stencils and simple calculator is allowed.

Q. 1	Unit-I	16 Marks
Q. 2	Unit-II	16 Marks
Q. 3	Unit-III	16 Marks
Q. 4	Unit-IV	16 Marks
Q. 5	Unit-V	16 Marks
Q. 6	Journal and Viva	20 Marks

**University of Mumbai**

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – VI, Paper – VII**

**Subject Title: ECONOMIC GEOGRAPHY**

**COURSE CODE: \_\_\_\_\_ (2018-19), Credit: \_\_04\_\_**

Units	Name of the Unit/Subunit	No of Lectures
<b>Unit – 1. : Introduction of Economic Geography</b>		<b>(12)</b>
1.1	Definition, Nature, Scope and Branches of Economic Geography	
1.2	Approaches of Economic Geography and Relation with other social sciences	
1.3	Concept and Operation of Economy	
1.4	Resources: Concept, Classification and Importance in Economy	
<b>Unit – 2. : Economic Activities</b>		<b>(12)</b>
2.1	Economic Activities: Type and Characteristics	
2.2	Factors Affecting Economic Activities	
2.3	Agriculture and Lumbering: Types and Distribution	
2.4	Fishing and Animal Husbandry: Types and Distribution	
<b>Unit – 3. : Minerals and Industries</b>		<b>(12)</b>
3.1	Minerals: Importance, Characteristics and Distribution of Iron Ore, Manganese, Coal and Mineral Oil	
3.2	Factors Affecting Industrial Locations	
3.3	Weber's Industrial Location Theory	
3.4	Major Industrial Regions of the World	
<b>Unit – 4. : Transport and International Trade</b>		<b>(12)</b>
4.1	Transportation: Importance and influencing factors	
4.2	Major Transport Patterns in the World	
4.3	Patterns of International Trade: Composition and Direction	
4.4	Major International Trade Organisations: WTO, OPEC, SAARC, G-20 and BRICS	
<b>Unit – 5 : Economic Development of India</b>		<b>(12)</b>
5.1	Levels of Economic Development in India	
5.2	Globalisation and its impact on Indian economy	
5.3	Special Economic Zones: Concept and issues in India	
5.4	Environment and Economic Development and related issues	

## Reference Books:

1. Datt, G. And Mahajan, A. (2016): “Datt and Sundaram’s Indian Economy”, S. Chand Publishing, New Delhi
2. Dreze J and Sen A.: “Indian Economic Development and Social Opportunity”, Oxford University Press, London
3. Gautam, A. (2010): “Advanced Economic Geography”, ShardaPustakBhawan, Allahabad
4. Hartshorne T. & Alexander J.W.: “Economic Geography”, Prentice New Delhi
5. Hodder, B. and Lee, R. (2008): “Economic Geography”, Rawat Publishers, Jaipur
6. Khanna K.K., Gupta V. K., (1987): “Economic and Commercial Geography”, Sultan Chand and Com.
7. Memoria, C. B. : “Economic and Commercial Geography of India”
8. Saxena, H. (2016): “Economic Geography”, Rawat Publishers, Jaipur
9. Singh, J. and Dhillon, S.: “Agricultural Geography”, Tata McGraw hill Publication Company Ltd., New Delhi.
10. Vaidya B.C. (1998): “Readings in Transportation Geography”, Devika Publications, New Delhi.
11. Vaidya B.C. (2003): “Geography of Transport Development”, Concept Publication, New Delhi.
12. Weber Alfred (1957): “Theory of Location of Industry” Chicago Press
13. अहिरराव, धापटे, पाटील, शिंदे (१९९७): आर्थिक भूगोल, निराली प्रकाशन, पुणे
14. एस. ए. ठाकूर, आर. बी. पाटील, पेडणेकर, धुरी(२०१२) : आर्थिक भूगोल, कोकण जोग्रफर्स असोसिएशन
15. खतीब (२००७): आर्थिक भूगोल, मेहता पब्लिशिंग हाउस, कोल्हापूर
16. फुले, शिंदे, पवार, अडसूळ, पाटील (१९९८): आर्थिक भूगोल, सप्रेमप्रकाशन, कोल्हापूर
17. विठ्ठल घारपुरे (२०१३): आर्थिक भूगोल, पिंपळापुरे अंड पब्लिशर्स, नागपूर.
18. शिंदे, केंगारे, माने-देशमुख (१९९९): आर्थिक भूगोल, फडके प्रकाशन, कोल्हापूर
19. सवदी, कोळेकर (२०१०): अभिनव भूगोल : , निराली प्रकाशन, पुणे

-----

### QUESTION PAPER PATTERN:

<b>Time: 3 hours</b>		<b>Marks; 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
<b>OR</b>		
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

**University of Mumbai**

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A./T.Y.B.Sc. Geography, Semester –VI, Paper: VIII – A**

**Subject Title: BIOGEOGRAPHY**

**COURSE CODE: \_\_\_\_\_, Credit: \_\_04\_\_**

<b>Unit-I: Introduction to Biogeography</b>		<b>TOTAL LECTURES</b>
1.1.	Biogeography-Concept, definition, nature and scope	<b>12</b>
1.2.	Historical development and branches of Biogeography	
1.3.	Approaches in Biogeography	
1.4.	Importance of Biogeographic studies	
<b>Unit-II: Ecosystem and Biosphere</b>		<b>12</b>
2.1.	Ecosystem: Concept, meaning and types	
2.2.	Components of ecosystem and ecosystem productivity	
2.3.	Biosphere: Concept, meaning and components	
2.4.	Biogeographic processes	
<b>Unit -III: Plant Community</b>		<b>12</b>
3.1.	Concept of plant community and classification of plants	
3.2.	Biotic succession and climax vegetation	
3.3.	Major plant formation and biomes- Tropical	
3.4.	Major plant formation and biomes- Temperate	
<b>Unit –IV: Marine Biogeography</b>		<b>12</b>
4.1.	Marine Biogeography meaning and concept	
4.2.	Types of ocean habitats	
4.3.	Biogeography of estuaries	
4.4.	Island biogeography	
<b>Unit-V: Biodiversity</b>		<b>12</b>
5.1.	Meaning and types of Biodiversity	
5.2.	Importance of Biodiversity	
5.3.	Causes of Biodiversity loss	
5.4.	Biodiversity conservation	



**References:**

- Flannery, T. 2015. The Eternal Frontier: An Ecological History of North America and Its Peoples. Grove/Atlantic, Inc.
- Gavin, D. G. 2012. Biogeography. Pages 77–89 in J. P. Stoltman, editor. 21st Century Geography: A Reference Handbook. SAGE Publications, Thousand Oaks, CA.
- Jackson, S. T. 2004. Quaternary biogeography: Linking biotic responses to environmental variability across timescales. Pages 47–65 in M. V. Lomolino and L. R. Heaney, editors. Frontiers of Biogeography: New Directions in the Geography of Nature. Sinauer, Sunderland, MA.
- Lomolino, M. V., B. R. Riddle, J. H. Brown, and R. J. Whittaker. 2010. Biogeography. Fourth Edition. Sinauer Associates, Sunderland, MA.
- MacDonald, G. M. 2003. Biogeography: Space, Time and Life. Wiley, New York.
- McCarthy, D. 2011. Here Be Dragons: How the study of animal and plant distributions revolutionized our views of life and Earth. OUP Oxford.
- Molles, M. C. 1999. Ecology: Concepts and Applications. WCB/McGraw-Hill.
- Perry, D. A., R. Oren, and S. C. Hart. 2013. Forest Ecosystems. JHU Press.

**QUESTION PAPER PATTERN:**

<b>Time: 3 hours</b>		<b>Marks; 100</b>
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks	20 Marks

	or Two short answer questions each 10 Marks	
Q. 4	Long answer question on Unit-IV	20 Marks
	<b>OR</b>	
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
	<b>OR</b>	
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

\*\*\*\*\*

## University of Mumbai

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – VI, Paper – VIII-B:**

**Subject Title: SOCIAL GEOGRAPHY**

**COURSE CODE: \_\_\_\_\_ (2018-19), Credit: \_\_04\_\_**

<b>UNIT – I: Introduction to Social Geography</b>		<b>TOTAL LECTURES</b>
<b>1.1</b>	Social Geography: Definitions, Nature, Scope and importance	<b>12</b>
<b>1.2</b>	Branches and Approaches in Social Geography	
<b>1.3</b>	Concept of Social Space and Socio-cultural Regions	
<b>1.4</b>	Globalisation: The Process of Social and Spatial Change	
<b>UNIT – II: Elements of Social Geography -World</b>		<b>12</b>
<b>2.1</b>	Race: Concept and Basis of Classification and distribution	
<b>2.2</b>	Religion: Characteristics, Distribution and Spread of Major Religions in the World	
<b>2.3</b>	Language: Characteristics and Distribution of Major Linguistic Families in the World	
<b>2.4</b>	Tribes: Concept, Characteristics and Patterns of Distribution of Major Tribes in the World	

<b>UNIT – III: : Elements of Social Geography –India</b>		<b>12</b>
<b>3.1</b>	Race: Major races and its distribution in India	
<b>3.2</b>	Religion: Major Religions and its distribution and its distribution in India	
<b>3.3</b>	Language: Major Linguistic Families in India	
<b>3.4</b>	Tribes: Distribution of Scheduled Tribes in India	
<b>UNIT - IV: Social Geography of City</b>		<b>12</b>
<b>4.1</b>	Social groups – identification and distribution	
<b>4.2</b>	Residential segregation	
<b>4.3</b>	Functional segregation	
<b>4.4</b>	Social issues in the city	
<b>UNIT – V: Contemporary Issues in India</b>		<b>12</b>
<b>5.1</b>	Religion related social issues	
<b>5.2</b>	Language related social issues	
<b>5.3</b>	Patterns of gender issues in India	
<b>5.4</b>	Socio-economic problems of indigenous communities in India	

#### REFERENCES:

- Ahmad, A. (1999): “Social Geography”, Rawat Publications, Jaipur
- Bannerjee-Guha, S. (2004): “Space, Society and Geography”, Rawat Publications, Jaipur
- CMS (2010): “India Corruption Study 2010: Is the Scenario Changing?”, CMS Research House, New Delhi, Downloaded from <http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan047870.pdf>
- Desai, M. (2007): “Women and the Built Environment”, Zuban Publications, Delhi.
- Dutt, A., Wadhwa, V. et al (2012): “Facets of Social Geography: International and Indian Perspectives”, Foundation Books, New Delhi
- Gharpure, V. (2013): “Samajik ani anskrutik Bhugol”, (Marathi) Pimpalpure and Company Publishers, Nagpur
- Jyptirmoy Sen (2007): A Text Book of Social and Cultural Geography,” Kalyani Publsiher, New Delhi.
- Karmarkar, D. (2012): “Fishy Spaces: Globalisation and Livelihood of Indigenous Fishermen – A Case of Mumbai”, LAP LAMBERT Academic Publishing, Germany
- Knowles, R and Wareing, J. (1996): “Economic and Social Geography”, the Made Simple Series, Rupa& Co., Calcutta

- Krishnaraj, M. (2012): “The Women’s Movement in India: A Hundred Year History”, Sage Publications, New Delhi
- Leong, Goh-Cheng and Morgan, G. (1994): “Human and Economic Geography”, Oxford University Press, Oxford
- Puniyani, R. (2018): “Communalism: India’s Struggle for Democracy and Pluralism”,
- Raju, S. (2011): “Gendered Geographies: Space and Place in South Asia”, Oxford University Press, New Delhi.
- Rubenstein, J. (2015): “Contemporary Human Geography”, Pearson Education, Noida
- Singh, B. N.: “Human Geography”, PrayagPustakBhavan, Allahabad
- Singh, L. R. (2009): “Fundamentals of Human Geography”, ShardaPustakBhawan, Allahabad
- Sukhtankar, S. and Vaishnav, M. (2015): “Corruption in India: Bridging Research Evidence and Policy Options”, An Independent Paper downloaded from [https://www.dartmouth.edu/~sandip/Sukhtankar-Vaishnav-Corruption-IPF\\_Full.pdf](https://www.dartmouth.edu/~sandip/Sukhtankar-Vaishnav-Corruption-IPF_Full.pdf)
- Warburton, J. (2013): “Corruption as Social Process”, in P. Larmour and N. Wolanin (eds), *Corruption and Anti-Corruption*, ANU E Press, Downloaded from <http://press-files.anu.edu.au/downloads/press/p228301/pdf/ch13.pdf>
- [www.nptel.ac.in/courses/109103022/40](http://www.nptel.ac.in/courses/109103022/40)

### QUESTION PAPER PATTERN:

Time: 3 hours		Marks; 100
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks	20 Marks

	or Two short answer questions each 10 Marks	
Q. 3	Long answer question on Unit-III	20 Marks
	<b>OR</b>	
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
	<b>OR</b>	
	Long answer question on unit –IV for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 5	Long answer question on Unit-V	20 Marks
	<b>OR</b>	
	Long answer question on unit –V for 20 Marks or Two short answer questions each 10 Marks	20 Marks

\*\*\*\*\*

### University of Mumbai

**Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)**

**T.Y.B.A. / T.Y.B.Sc. Geography, Semester – VI, Paper: VIII-C**

**Subject Title: GEOGRAPHY OF TRANSPORT**

**COURSE CODE: \_\_\_\_\_, Credit: \_04\_**

Unit-I : Introduction to Transport Geography		TOTAL LECTURES
1.1	Concept and Definition of Geography of Transport	12
1.2	Nature and Scope Geography of Transport	
1.3	Definition of Distance and its types, Factors affecting on Transportation	
1.4	Significance of the study of Geography of Transport	

<b>Unit-II – Transport net work system</b>		<b>12</b>
2.1	Transport net work system – structure and properties	
2.2	Application of graph theory measures	
2.3	Location of routes and efficiency of network	
2.4	Conflicting aspects of decision making	
<b>Unit-III : Evolution of Modes of Transport</b>		<b>12</b>
3.1	Evolution of transport network and their environment	
3.2	Phases of growth and development of different modes of transport	
3.3	Factors influencing comparative cost structures and locational responses	
3.4	Global patterns of land, water and air transports	
<b>Unit-IV : Theoretical Framework of Transport</b>		<b>12</b>
4.1	Connectivity and its Measurement	
4.2	Accessibility and its Measurement	
4.3	Taffe's model	
4.4	Gravity model	
<b>Unit-V: Transportation Issues in India</b>		<b>12</b>
5.1	Issues associated with roadways transport network	
5.2	Issues associated with railways transport network	
5.3	Issues associated with water transport development	
5.4	Issues associated with air transport development	

### **REFERENCES:**

1. Chorley R.J. & Haggett P. (1967): Models in Geography Methuen & Co. London.
2. Hagget, F and Chorley, R.J. Network Analysis', Edward Arnold, London, 1968.
3. Hay, A.: Transport Economy, MacMillan, London, 1973.
4. Hoyle, B.S.(ed.): Transport and Development, MacMillan, London, 1973.
5. Hurst, M.E.(ed.) (1974): Transportation Geography, McGraw-Hill.
6. Raza, M. and Agrawal Y.P. : Transport Geography of India, Concept. New Delhi, 1985.

7. Robinson H & Bamford C.G. : Geography of Transport Macdonald & Evans., London 1978.
8. Saxena, H. M. (2010): Transport Geography, Rawat Publications, Jaipur
9. Taffe, E.J. & Gauthier (Jr.) H.L.: Geography of Transportation, Prentice-Hall, Englewood Cliffs, N.J., 1973.
10. Ullman E.L.: American Commodity Flow University of Washington Press 1957.
11. White H.P. and Senior, M.L. Transport Geography, Longman, London, 1983.
12. घारपुरे, विठ्ठल (२०१०): भारताचा भूगोल, पिंपळापुरे आणि प्रकाशक, नागपूर.
13. मगर, जयकुमार (२००८): भारताचा भूगोल, विद्या प्रकाशन नागपूर.

### QUESTION PAPER PATTERN:

Time: 3 hours		Marks; 100
<b>N.B.</b> 1. All questions are compulsory and carry equal marks. 2. Use of Map Stencils is permitted. 3. Draw sketches and diagrams wherever necessary.		
Q. 1	Long answer question on Unit-I	20 Marks
<b>OR</b>		
	Long answer question on unit –I for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 2	Long answer question on Unit-II	20 Marks
<b>OR</b>		
	Long answer question on unit –II for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 3	Long answer question on Unit-III	20 Marks
<b>OR</b>		
	Long answer question on unit –III for 20 Marks or Two short answer questions each 10 Marks	20 Marks
Q. 4	Long answer question on Unit-IV	20 Marks
<b>OR</b>		
	Long answer question on unit –IV for 20 Marks	20 Marks

	or Two short answer questions each 10 Marks	
Q. 5	Long answer question on Unit-V	20 Marks
	<b>OR</b>	
	Long answer question on unit –V for 20 Marks	20 Marks
	or Two short answer questions each 10 Marks	

\*\*\*\*\*

<p><b>University of Mumbai</b></p> <p><b>Revised Syllabus w.e.f. Academic Year, 2018-19 (CBSGS)</b></p> <p><b>T.Y.B.A. / T.Y.B.Sc. Geography, Semester – VI, Paper – IX :</b></p> <p><b>PROJECT REPORT</b></p> <p><b>Course Code: Credits: 03</b></p>	
---	--



**UNIVERSITY OF MUMBAI**

No. UG/ 89 of 2018-19

**CIRCULAR:-**

Attention of the Principals of the affiliated Colleges and Directors of the recognized Institutions in Commerce & Management Faculty is invited to this office Circular No. UG/21 of 2016-17, dated 30<sup>th</sup> June, 2016 relating to syllabus of Bachelor of Management Studies (B.M.S.) degree course.

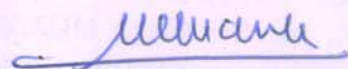
Their attention is also invited to University Circular No. UG/109 of 2016-17 dated 25<sup>th</sup> October, 2016 for F.Y.B.M.S. ( Sem. I & II) and University Circular No. UG/261 of 2017-18 dated 23<sup>rd</sup> October, 2017 for S.Y. B.M.S. (Sem. III & IV) respectively.

They are hereby informed that the recommendations made by the Board of Studies in Business Management at its meeting held on 28<sup>th</sup> February, 2018 have been accepted by the Academic Council at its meeting held on 5<sup>th</sup> May, 2018 vide item No. 4.44 and that in accordance therewith, the revised syllabus as per the (CBCS) for the T.Y.B.M.S. (Sem. V & VI), has been brought into force with effect from the academic year 2018-19, accordingly. (The same is available on the University's website [www.mu.ac.in](http://www.mu.ac.in)).

MUMBAI – 400 032

27<sup>th</sup> July, 2018

To



(Dr. Dinesh Kamble)  
I/c REGISTRAR

The Principals of the affiliated Colleges and Directors of the recognized Institutions in Commerce & Management Faculty. (Circular No. UG/334 of 2017-18 dated 9<sup>th</sup> January, 2018.)

**A.C./4.44/05/05/2018**

\*\*\*\*\*

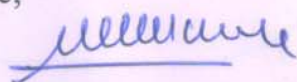
No. UG/ 89 -A of 2018

MUMBAI-400 032

27<sup>th</sup> July, 2018

Copy forwarded with Compliments for information to:-

- 1) The I/c Dean, Faculty of Commerce & Management,
- 2) The Director, Board of Examinations and Evaluation,
- 3) The Director, Board of Students Development,
- 4) The Professor-cum-Director, Institute of Distance and Open Learning (IDOL),
- 5) The Co-Ordinator, University Computerization Centre,



(Dr. Dinesh Kamble)  
I/c REGISTRAR

# University of Mumbai



**Revised Syllabus  
and  
Question Paper Pattern  
of Courses  
of  
Bachelor of Management Studies  
(BMS) Programme at  
Third Year  
*Semester V and VI***

**Under Choice Based Credit, Grading and  
Semester System**

***(To be implemented from Academic Year- 2018-2019)  
Board of Studies-in-Business Management, University of Mumbai***

# Bachelor of Management Studies (BMS) Programme

**Under Choice Based Credit, Grading and Semester System**

**TYBMS**

**(To be implemented from Academic Year- 2018-2019)**

No. of Courses	Semester V	Credits	No. of Courses	Semester VI	Credits
<b>1</b>	<b>Elective Courses (EC)</b>		<b>1</b>	<b>Elective Courses (EC)</b>	
1,2,3 & 4	*Any four courses from the following list of the courses	<b>12</b>	1,2,3 & 4	**Any four courses from the following list of the courses	<b>12</b>
<b>2</b>	<b>Core Course (CC)</b>		<b>2</b>	<b>Core Course (CC)</b>	
5	Logistics & Supply Chain Management	<b>04</b>	5	Operation Research	<b>04</b>
<b>3</b>	<b>Ability Enhancement Course (AEC)</b>		<b>3</b>	<b>Ability Enhancement Course (AEC)</b>	
6	Corporate Communication & Public Relations	<b>04</b>	6	Project Work	<b>04</b>
<b>Total Credits</b>		<b>20</b>	<b>Total Credits</b>		<b>20</b>

✓ **Note:** Project work is considered as a special course involving application of knowledge in solving/analysing/exploring a real life situation/ difficult problem. Project work would be of 04 credits. A project work may be undertaken in any area of Elective Courses/ study area selected

<b>*List of group of Elective Courses(EC) for Semester V (Any Four)</b>		<b>** List of group of Elective Courses(EC) for Semester VI (Any Four)</b>	
<b>Group A: Finance Electives</b>			
1	Investment Analysis& Portfolio Management	1	International Finance
2	Commodity & Derivatives Market	2	Innovative Financial Services
3	Wealth Management	3	Project Management
4	Financial Accounting	4	Strategic Financial Management
5	Risk Management	5	Financing Rural Development
6	Direct Taxes	6	Indirect Taxes
<b>Group B:Marketing Electives</b>			
1	Services Marketing	1	Brand Management
2	E-Commerce & Digital Marketing	2	Retail Management
3	Sales & Distribution Management	3	International Marketing
4	Customer Relationship Management	4	Media Planning & Management
5	Industrial Marketing	5	Sports Marketing
6	Strategic Marketing Management	6	Marketing of Non Profit Organisation
<b>Group C: Human Resource Electives</b>			
1	Finance for HR Professionals & Compensation Management	1	HRM in Global Perspective
2	Strategic Human Resource Management & HR Policies	2	Organisational Development
3	Performance Management & Career Planning	3	HRM in Service Sector Management
4	Industrial Relations	4	Workforce Diversity
5	Talent & Competency Management	5	Human Resource Accounting & Audit
6	Stress Management	6	Indian Ethos in Management
<b>Note: Group selected in Semester III will continue in Semester V &amp;Semester VI</b>			

# Bachelor of Management Studies (BMS) Programme

***Under Choice Based Credit, Grading and Semester System***

## ***Course Structure***

***(To be implemented from Academic Year- 2018-2019)***

## **Semester V**

No. of Courses	Semester V	Credits
<b>1</b>	<b><i>Elective Courses (EC)</i></b>	
1,2,3 & 4	*Any four courses from the following list of the courses	<b>12</b>
<b>2</b>	<b><i>Core Course (CC)</i></b>	
5	Logistics & Supply Chain Management	<b>04</b>
<b>3</b>	<b><i>Ability Enhancement Course (AEC)</i></b>	
6	Corporate Communication & Public Relations	<b>04</b>
<b>Total Credits</b>		<b>20</b>

### ***\*List of group of Elective Courses(EC)for Semester V (Any Four)***

<b><i>Group A: Finance Electives</i></b>	
1	Investment Analysis & Portfolio Management
2	Commodity & Derivatives Market
3	Wealth Management
4	Financial Accounting
5	Risk Management
6	Direct Taxes
<b><i>Group B:Marketing Electives</i></b>	
1	Services Marketing
2	E-Commerce & Digital Marketing
3	Sales & Distribution Management
4	Customer Relationship Management
5	Industrial Marketing
6	Strategic Marketing Management
<b><i>Group C: Human Resource Electives</i></b>	
1	Finance for HR Professionals & Compensation Management
2	Strategic Human Resource Management & HR Policies
3	Performance Management & Career Planning
4	Industrial Relations
5	Talent & Competency Management
6	Stress Management

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group A: Finance Electives***

**1. Investment Analysis and Portfolio Management**

***Modules at a Glance***

SN	Modules	No. of Lectures
1	Introduction to Investment Environment	15
2	Risk - Return Relationship	15
3	Portfolio Management and Security Analysis	15
4	Theories, Capital Asset Pricing Model and Portfolio Performance Measurement	15
Total		60

***Objectives***

SN	Objectives
1	To acquaint the learners with various concepts of finance
2	To understand the terms which are often confronted while reading newspaper, magazines etc for better correlation with the practical world
3	To understand various models and techniques of security and portfolio analysis



SN	Modules/ Units
1	<b>Introduction to Investment Environment</b>
	<p><b>a) Introduction to Investment Environment</b></p> <ul style="list-style-type: none"> <li>• Introduction, Investment Process, Criteria for Investment, Types of Investors, Investment V/s Speculation V/s Gambling, Investment Avenues, Factors Influencing Selection of Investment Alternatives</li> </ul> <p><b>b) Capital Market in India</b></p> <ul style="list-style-type: none"> <li>• Introduction, Concepts of Investment Banks its Role and Functions, Stock Market Index, The NASDAQ, SDL, NSDL, Benefits of Depository Settlement, Online Share Trading and its Advantages, Concepts of Small cap, Large cap, Midcap and Penny stocks</li> </ul>
2	<b>Risk - Return Relationship</b>
	<p>a) Meaning, Types of Risk- Systematic and Unsystematic risk, Measurement of Beta, Standard Deviation, Variance, Reduction of Risk through Diversification. Practical Problems on Calculation of Standard Deviation, Variance and Beta.</p>
3	<b>Portfolio Management and Security Analysis</b>
	<p><b>a) Portfolio Management:</b></p> <ul style="list-style-type: none"> <li>• Meaning and Concept, Portfolio Management Process, Objectives, Basic Principles, Factors affecting Investment Decisions in Portfolio Management, Portfolio Strategy Mix.</li> </ul> <p><b>b) Security Analysis:</b></p> <ul style="list-style-type: none"> <li>• Fundamental Analysis, Economic Analysis, Industry Analysis, Company Analysis, Technical Analysis - Basic Principles of Technical Analysis., Uses of Charts: Line Chart, Bar Chart, Candlestick Chart, Mathematical Indicators: Moving Averages, Oscillators.</li> </ul>
4	<b>Theories, Capital Asset Pricing Model and Portfolio Performance Measurement</b>
	<p><b>a) Theories:</b></p> <ul style="list-style-type: none"> <li>• Dow Jones Theory, Elloit Wave Theory, Efficient Market Theory</li> </ul> <p><b>b) Capital Asset Pricing Model:</b></p> <ul style="list-style-type: none"> <li>• Assumptions of CAPM, CAPM Equation, Capital Market Line, Security Market Line</li> </ul> <p><b>c) Portfolio Performance Measurement:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Portfolio Evaluation, Sharpe's Ratio (Basic Problems), Treynor's Ratio (Basic Problems), Jensen's Differential Returns (Basic Problems)</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group A: Finance Electives***

**2. Commodity and Derivatives Market**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to Commodities Market and Derivatives Market	15
2	Futures and Hedging	15
3	Options and Option Pricing Models	15
4	Trading, Clearing & Settlement In Derivatives Market and Types of Risk	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand the concepts related to Commodities and Derivatives market
2	To study the various aspects related to options and futures
3	To acquaint learners with the trading, clearing and settlement mechanism in derivatives market.

SN	Modules/ Units
1	<b>Introduction to Commodities Market and Derivatives Market</b>
	<p><b>a) Introduction to Commodities Market :</b></p> <ul style="list-style-type: none"> <li>• Meaning, History &amp; Origin, Types of Commodities Traded, Structure of Commodities Market in India, Participants in Commodities Market, Trading in Commodities in India(Cash &amp; Derivative Segment), Commodity Exchanges in India &amp; Abroad, Reasons for Investing in Commodities</li> </ul> <p><b>b) Introduction to Derivatives Market:</b></p> <ul style="list-style-type: none"> <li>• Meaning, History &amp; Origin, Elements of a Derivative Contract, Factors Driving Growth of Derivatives Market, Types of Derivatives, Types of Underlying Assets, Participants in Derivatives Market, Advantages &amp; Disadvantages of Trading in Derivatives Market, Current Volumes of Derivative Trade in India, Difference between Forwards &amp; Futures.</li> </ul>
2	<b>Futures and Hedging</b>
	<p><b>a) Futures:</b></p> <ul style="list-style-type: none"> <li>• Futures Contract Specification, Terminologies, Concept of Convergence, Relationship between Futures Price &amp; Expected Spot Price, Basis &amp; Basis Risk, Pricing of Futures Contract, Cost of Carry Model</li> </ul> <p><b>b) Hedging:</b></p> <ul style="list-style-type: none"> <li>• Speculation &amp; Arbitrage using Futures, Long Hedge – Short Hedge, Cash &amp; Carry Arbitrage, Reverse Cash &amp; Carry Arbitrage, Payoff Charts &amp; Diagrams for Futures Contract, Perfect &amp; Imperfect Hedge</li> </ul>
3	<b>Options and Option Pricing Models</b>
	<p><b>a) Options:</b></p> <ul style="list-style-type: none"> <li>• Options Contract Specifications, Terminologies, Call Option, Put Option, Difference between Futures &amp; Options, Trading of Options, Valuation of Options Contract, Factors affecting Option Premium, Payoff Charts &amp; Diagrams for Options Contract, Basic Understanding of Option Strategies</li> </ul> <p><b>b) Options Pricing Models:</b></p> <ul style="list-style-type: none"> <li>• Binomial Option Pricing Model, Black - Scholes Option Pricing Model</li> </ul>
4	<b>Trading, Clearing &amp; Settlement In Derivatives Market and Types of Risk</b>
	<p><b>a) Trading, Clearing &amp; Settlement In Derivatives Market:</b></p> <ul style="list-style-type: none"> <li>• Meaning and Concept, SEBI Guidelines, Trading Mechanism – Types of Orders, Clearing Mechanism – NSCCL – its Objectives &amp; Functions, Settlement Mechanism – Types of Settlement</li> </ul> <p><b>b) Types of Risk:</b></p> <ul style="list-style-type: none"> <li>• Value at Risk, Methods of calculating VaR, Risk Management Measures , Types of Margins, SPAN Margin</li> </ul>



***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group A: Finance Electives***

**3. Wealth Management**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction	15
2	Insurance Planning and Investment Planning	15
3	Financial Mathematics/ Tax and Estate Planning	15
4	Retirement Planning/ Income Streams & Tax Savings Schemes	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To provide an overview of various aspects related to wealth management
2	To study the relevance and importance of Insurance in wealth management
3	To acquaint the learners with issues related to taxation in wealth management
4	To understand various components of retirement planning

SN	Modules/ Units
1	<b>Introduction</b>
	<p><b>a) Introduction To Wealth Management:</b></p> <ul style="list-style-type: none"> <li>• Meaning of WM, Scope of WM, Components of WM, Process of WM, WM Needs &amp; Expectation of Clients, Code of Ethics for Wealth Manager</li> </ul> <p><b>b) Personal Financial Statement Analysis:</b></p> <ul style="list-style-type: none"> <li>• Financial Literacy, Financial Goals and Planning, Cash Flow Analysis, Building Financial Plans, Life Cycle Management.</li> </ul> <p><b>c) Economic Environment Analysis:</b></p> <ul style="list-style-type: none"> <li>• Interest Rate, Yield Curves, Real Return, Key Indicators-Leading, Lagging, Concurrent</li> </ul>
2	<b>Insurance Planning and Investment Planning</b>
	<p><b>a) Insurance Planning:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Basic Principles of Insurance, Functions and Characteristics of Insurance, Rights and Responsibilities of Insurer and Insured, Types of life Insurance Policies, Types of General Insurance Policies, Health Insurance – Mediciam – Calculation of Human Life Value - Belth Method/CPT</li> </ul> <p><b>b) Investment Planning:</b></p> <ul style="list-style-type: none"> <li>• Types of Investment Risk, Risk Profiling of Investors &amp; Asset Allocation (Life Cycle Model), Asset Allocation Strategies(Strategic, Tactical, Life-Cycle based), Goal-based Financial Planning, Active &amp; Passive Investment Strategies</li> </ul>
3	<b>Financial Mathematics/ Tax and Estate Planning</b>
	<p><b>a) Financial Mathematics:</b></p> <ul style="list-style-type: none"> <li>• Calculation of Returns (CAGR ,Post-tax Returns etc.), Total Assets, Net Worth Calculations, Financial Ratios</li> </ul> <p><b>b) Tax and Estate Planning:</b></p> <ul style="list-style-type: none"> <li>• Tax Planning Concepts, Assessment Year, Financial Year, Income Tax Slabs, TDS, Advance Tax, LTCG, STCG, Carry Forward &amp; Set-off, Estate Planning Concepts –Types of Will – Requirements of a Valid Will– Trust – Deductions - Exemptions</li> </ul>
4	<b>Retirement Planning/ Income Streams &amp; Tax Savings Schemes</b>
	<p><b>a) Retirement Planning:</b></p> <ul style="list-style-type: none"> <li>• Understanding of different Salary Components, Introduction to Retirement Planning, Purpose &amp; Need, Life Cycle Planning, Financial Objectives in Retirement Planning, Wealth Creation (Factors and Principles), Retirement (Evaluation &amp; Planning), Pre &amp; Post-Retirement Strategies - Tax Treatment</li> </ul> <p><b>b) Income Streams &amp; Tax Savings Schemes:</b></p> <ul style="list-style-type: none"> <li>• Pension Schemes, Annuities- Types of Annuities, Various Income Tax Savings Schemes</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019**

**Elective Courses (EC)  
Group A: Finance Electives**

**4. Financial Accounting**

**Modules at a Glance**

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Preparation of Final Accounts of Companies	15
2	Underwriting of Shares & Debentures	12
3	Accounting of Transactions of Foreign Currency	15
4	Investment Accounting (w.r.t. Accounting Standard- 13)	10
5	Ethical Behaviour and Implications for Accountants	08
<b>Total</b>		<b>60</b>

**Objectives**

<b>SN</b>	<b>Objectives</b>
01	To acquaint the learners in preparation of final accounts of companies
02	To study provisions relating to underwriting of shares and debentures
03	To study accounting of foreign currency and investment
04	To understand the need of ethical behaviour in accountancy

Sr. No.	Modules / Units
1	<b>Preparation of Final Accounts of Companies</b>
	Relevant provisions of Companies Act related to preparation of Final Accounts (excluding cash flow statement) Preparation of financial statements as per Companies Act (excluding cash flow statement) AS 1 in relation to final accounts of companies (disclosure of accounting policies)
2	<b>Underwriting of Shares &amp; Debentures</b>
	Introduction, Underwriting, Underwriting Commission Provision of Companies Act with respect to Payment of underwriting commission Underwriters, Sub-Underwriters, Brokers and Manager to Issues Types of underwriting, Abatement Clause Marked, Unmarked and Firm-underwriting applications, Liability of the underwriters in respect of underwriting contract- Practical problems
3	<b>Accounting of Transactions of Foreign Currency</b>
	In relation to purchase and sale of goods, services, assets, loan and credit transactions. Computation and treatment of exchange rate differences.
4	<b>Investment Accounting (w.r.t. Accounting Standard- 13)</b>
	For shares (variable income bearing securities) For Debentures/Preference shares (fixed income bearing securities) Accounting for transactions of purchase and sale of investments with ex and cum interest prices and finding cost of investment sold and carrying cost as per weighted average method (Excl. brokerage). Columnar format for investment account.
5	<b>Ethical Behaviour and Implications for Accountants</b>
	Introduction, Meaning of ethical behavior Financial Reports – link between law, corporate governance, corporate social responsibility and ethics. Need of ethical behavior in accounting profession . Implications of ethical values for the principles versus rule based approaches to accounting standards The principal based approach and ethics The accounting standard setting process and ethics The IFAC Code of Ethics for Professional Accountants Contents of Research Report in Ethical Practices Implications of unethical behavior for financial reports Company Codes of Ethics The increasing role of Whistle – Blowing

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group A: Finance Electives***

**5. Risk Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction, Risk Measurement and Control	15
2	Risk Avoidance and ERM	15
3	Risk Governance and Assurance	15
4	Risk Management in Insurance	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To familiarize the student with the fundamental aspects of risk management and control
2	To give a comprehensive overview of risk governance and assurance with special reference to insurance sector
3	To introduce the basic concepts, functions, process, techniques of risk management

SN	Modules/ Units
1	<b>Introduction, Risk Measurement and Control</b>
	<b>a) Introduction, Risk Measurement and Control</b> <ul style="list-style-type: none"> <li>• Definition, Risk Process, Risk Organization, Key Risks –Interest, Market, Credit, Currency, Liquidity, Legal, Operational</li> <li>• Risk Management V/s Risk Measurement – Managing Risk, Diversification, Investment Strategies and Introduction to Quantitative Risk Measurement and its Limitations</li> <li>• Principals of Risk - Alpha, Beta, R squared, Standard Deviation, Risk Exposure Analysis, Risk Immunization, Risk and Summary Measures –Simulation Method, Duration Analysis, Linear and other Statistical Techniques for Internal Control</li> </ul>
2	<b>Risk Avoidance and ERM</b>
	<b>a) Risk Hedging Instruments and Mechanism:</b> <ul style="list-style-type: none"> <li>• Forwards, Futures, Options, Swaps and Arbitrage Techniques, Risk Return Trade off, Markowitz Risk Return Model, Arbitrage Theory, System Audit Significance in Risk Mitigation</li> </ul> <b>b) Enterprise Risk Management:</b> <ul style="list-style-type: none"> <li>• Risk Management V/s Enterprise Risk Management, Integrated Enterprise Risk Management, ERM Framework, ERM Process, ERM Matrix, SWOT Analysis, Sample Risk Register</li> </ul>
3	<b>Risk Governance and Assurance</b>
	<b>a) Risk Governance:</b> <ul style="list-style-type: none"> <li>• Importance and Scope of Risk Governance, Risk and Three Lines of Defense, Risk Management and Corporate Governance</li> </ul> <b>b) Risk Assurance:</b> <ul style="list-style-type: none"> <li>• Purpose and Sources of Risk Assurance, Nature of Risk Assurance, Reports and Challenges of Risk</li> </ul> <b>c) Risk and Stakeholders Expectations:</b> <ul style="list-style-type: none"> <li>• Identifying the Range of Stakeholders and Responding to Stakeholders Expectations</li> </ul>
4	<b>Risk Management in Insurance</b>
	<b>a) Insurance Industry:</b> <ul style="list-style-type: none"> <li>• Global Perspective, Regulatory Framework in India, IRDA - Reforms, Powers, Functions and Duties. Role and Importance of Actuary</li> </ul> <b>b) Players of Insurance Business:</b> <ul style="list-style-type: none"> <li>• Life and Non- Life Insurance, Reinsurance, Bancassurance, Alternative Risk Trance, Insurance Securitization, Pricing of Insurance products, Expected Claim Costs, Risk Classification</li> </ul> <b>c) Claim Management:</b> <ul style="list-style-type: none"> <li>• General Guidelines, Life Insurance, Maturity, Death, Fire, Marine, Motor Insurance and Calculation of Discounted Expected Claim Cost and Fair Premium</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group A: Finance Electives***

**6. Direct Taxes**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Definitions and Residential Status	10
2	Heads of Income – I	15
3	Heads of Income - II	15
4	Deductions under Chapter VI A	10
5	Computation of Taxable Income of Individuals	10
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To understand the provisions of determining residential status of individual
02	To study various heads of income
03	To study deductions from total income
04	To compute taxable income of Individuals

Sr. No.	Modules / Units
<b>1</b>	<b>Definitions and Residential Status</b>
	Basic Terms ( S. 2,3,4) Assessee, Assessment, Assessment Year, Annual Value, Business, Capital Assets, Income, Previous Year, Person, Transfer. Determination of Residential Status of Individual, Scope of Total Income (S.5)
<b>2</b>	<b>Heads of Income – I</b>
	Salary ( S.15-17) Income from House Property (S. 22-27) Profit & Gain from Business and Profession(S. 28, 30,31,32, 35, 35D,36,37, 40, 40A and 43B)
<b>3</b>	<b>Heads of Income – II</b>
	Capital Gain (S. 45, 48, 49, 50 and 54) Income from other sources (S.56- 59) Exclusions from Total Income (S.10) (Exclusions related to specified heads to be covered with relevant heads of income)
<b>4</b>	<b>Deductions under Chapter VI A</b>
	Deductions from Total Income S. 80C, 80CCC, 80D, 80DD, 80E, 80U, 80TTA
<b>5</b>	<b>Computation of Taxable Income of Individuals.</b>
	Computation of Total Income and Taxable Income of Individuals

**Note:** The Syllabus is restricted to study of particular sections, specifically mentioned rules and notifications only.

1. All modules / units include Computational problems / Case Study.
2. The Law In force on 1<sup>st</sup> April immediately preceding the commencement of Academic year will be applicable for ensuing Examinations.



***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**1. Service Marketing**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction of Services Marketing	15
2	Key Elements of Services Marketing Mix	15
3	Managing Quality Aspects of Services Marketing	15
4	Marketing of Services	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand distinctive features of services and key elements in services marketing
2	To provide insight into ways to improve service quality and productivity
3	To understand marketing of different services in Indian context

SN	Modules/ Units
1	<b>Introduction of Services Marketing</b>
	<ul style="list-style-type: none"> <li>• Services Marketing Concept, Distinctive Characteristics of Services, Services Marketing Triangle, Purchase Process for Services, Marketing Challenges of Services</li> <li>• Role of Services in Modern Economy, Services Marketing Environment</li> <li>• Goods vs Services Marketing, Goods Services Continuum</li> <li>• Consumer Behaviour, Positioning a Service in the Market Place</li> <li>• Variations in Customer Involvement, Impact of Service Recovery Efforts on Consumer Loyalty</li> <li>• Type of Contact: High Contact Services and Low Contact Services</li> <li>• Sensitivity to Customers' Reluctance to Change</li> </ul>
2	<b>Key Elements of Services Marketing Mix</b>
	<ul style="list-style-type: none"> <li>• The Service Product, Pricing Mix, Promotion &amp; Communication Mix, Place/Distribution of Service, People, Physical Evidence, Process-Service Mapping-Flowcharting</li> <li>• Branding of Services – Problems and Solutions</li> <li>• Options for Service Delivery</li> </ul>
3	<b>Managing Quality Aspects of Services Marketing</b>
	<ul style="list-style-type: none"> <li>• Improving Service Quality and Productivity</li> <li>• Service Quality – GAP Model, Benchmarking, Measuring Service Quality -Zone of Tolerance and Improving Service Quality</li> <li>• The SERVQUAL Model</li> <li>• Defining Productivity – Improving Productivity</li> <li>• Demand and Capacity Alignment</li> </ul>
4	<b>Marketing of Services</b>
	<ul style="list-style-type: none"> <li>• International and Global Strategies in Services Marketing: Services in the Global Economy- Moving from Domestic to Transnational Marketing</li> <li>• Factors Favouring Transnational Strategy</li> <li>• Elements of Transnational Strategy</li> <li>• Recent Trends in Marketing Of Services in: Tourism, Hospitality, Healthcare, Banking, Insurance, Education, IT and Entertainment Industry</li> <li>• Ethics in Services Marketing: Meaning, Importance, Unethical Practices in Service Sector</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**2. E-Commerce and Digital Marketing**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to E-commerce	15
2	E-Business & Applications	15
3	Payment, Security, Privacy & Legal Issues in E-Commerce	15
4	Digital Marketing	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand increasing significance of E-Commerce and its applications in Business and Various Sectors
2	To provide an insight on Digital Marketing activities on various Social Media platforms and its emerging significance in Business
3	To understand Latest Trends and Practices in E-Commerce and Digital Marketing, along with its Challenges and Opportunities for an Organisation

SN	Modules/ Units
1	<b>Introduction to E-commerce</b>
	<ul style="list-style-type: none"> <li>Ecommerce- Meaning, Features of E-commerce, Categories of E-commerce, Advantages &amp; Limitations of E-Commerce, Traditional Commerce &amp; E-Commerce</li> <li>Ecommerce Environmental Factors: Economic, Technological, Legal, Cultural &amp; Social</li> <li>Factors Responsible for Growth of E-Commerce, Issues in Implementing E-Commerce, Myths of E-Commerce</li> <li>Impact of E-Commerce on Business, Ecommerce in India</li> <li>Trends in E-Commerce in Various Sectors: Retail, Banking, Tourism, Government, Education</li> <li>Meaning of M-Commerce, Benefits of M-Commerce, Trends in M-Commerce</li> </ul>
2	<b>E-Business &amp; Applications</b>
	<ul style="list-style-type: none"> <li>E-Business: Meaning, Launching an E-Business, Different phases of Launching an E-Business</li> <li>Important Concepts in E-Business: Data Warehouse, Customer Relationship Management, Supply Chain Management, Enterprise Resource Planning</li> <li>Bricks and Clicks business models in E-Business: Brick and Mortar, Pure Online, Bricks and Clicks, Advantages of Bricks &amp; Clicks Business Model, Superiority of Bricks and Clicks E-Business Applications: E-Procurement, E-Communication, E-Delivery, E-Auction, E-Trading.</li> <li>Electronic Data Interchange (EDI) in E-Business: Meaning of EDI, Benefits of EDI, Drawbacks of EDI, Applications of EDI.</li> <li>Website : Design and Development of Website, Advantages of Website, Principles of Web Design, Life Cycle Approach for Building a Website, Different Ways of Building a Website</li> </ul>
3	<b>Payment, Security, Privacy &amp; Legal Issues in E-Commerce</b>
	<ul style="list-style-type: none"> <li>Issues Relating to Privacy and Security in E-Business</li> <li>Electronic Payment Systems: Features, Different Payment Systems : Debit Card, Credit Card, Smart Card, E-cash, E-Cheque, E-wallet, Electronic Fund Transfer.</li> <li>Payment Gateway: Introduction, Payment Gateway Process, Payment Gateway Types, Advantages and Disadvantages of Payment Gateway.</li> <li>Types of Transaction Security</li> <li>E-Commerce Laws: Need for E-Commerce laws, E-Commerce laws in India, Legal Issues in E-commerce in India, IT Act 2000</li> </ul>

SN	Modules/ Units
4	<b>Digital Marketing</b>
	<ul style="list-style-type: none"> <li>• Introduction to Digital Marketing, Advantages and Limitations of Digital Marketing.</li> <li>• Various Activities of Digital Marketing: Search Engine Optimization, Search Engine Marketing, Content Marketing &amp; Content Influencer Marketing, Campaign Marketing, Email Marketing, Display Advertising, Blog Marketing, Viral Marketing, Podcasts &amp; Vodcasts.</li> <li>• Digital Marketing on various Social Media platforms.</li> <li>• Online Advertisement, Online Marketing Research, Online PR</li> <li>• Web Analytics</li> <li>• Promoting Web Traffic</li> <li>• Latest developments and Strategies in Digital Marketing.</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**3. Sales and Distribution Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction	15
2	Market Analysis and Selling	15
3	Distribution Channel Management	15
4	Performance Evaluation, Ethics and Trends	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To develop understanding of the sales & distribution processes in organizations
2	To get familiarized with concepts, approaches and the practical aspects of the key decision making variables in sales management and distribution channel management

SN	Modules/ Units
1	<b>Introduction</b>
	<p><b>a) Sales Management:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Role of Sales Department, Evolution of Sales Management</li> <li>• Interface of Sales with Other Management Functions</li> <li>• Qualities of a Sales Manager</li> <li>• Sales Management: Meaning, Developments in Sales Management- Effectiveness to Efficiency, Multidisciplinary Approach, Internal Marketing, Increased Use of Internet, CRM, Professionalism in Selling.</li> <li>• Structure of Sales Organization – Functional, Product Based, Market Based, Territory Based, Combination or Hybrid Structure</li> </ul> <p><b>b) Distribution Management:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Importance, Role of Distribution, Role of Intermediaries, Evolution of Distribution Channels.</li> </ul> <p><b>c) Integration of Marketing, Sales and Distribution</b></p>
2	<b>Market Analysis and Selling</b>
	<p><b>a) Market Analysis:</b></p> <ul style="list-style-type: none"> <li>• Market Analysis and Sales Forecasting, Methods of Sales Forecasting</li> <li>• Types of Sales Quotas – Value Quota, Volume Quota, Activity Quota, Combination Quota</li> <li>• Factors Determining Fixation of Sales Quota</li> <li>• Assigning Territories to Salespeople</li> </ul> <p><b>b) Selling:</b></p> <ul style="list-style-type: none"> <li>• Process of Selling, Methods of Closing a Sale, Reasons for Unsuccessful Closing</li> <li>• Theories of Selling – Stimulus Response Theory, Product Orientation Theory, Need Satisfaction Theory</li> <li>• Selling Skills – Communication Skill, Listening Skill, Trust Building Skill, Negotiation Skill, Problem Solving Skill, Conflict Management Skill</li> <li>• Selling Strategies – Softsell Vs. Hardsell Strategy, Client Centered Strategy, Product-Price Strategy, Win-Win Strategy, Negotiation Strategy</li> <li>• Difference Between Consumer Selling and Organizational Selling</li> <li>• Difference Between National Selling and International Selling</li> </ul>

SN	Modules/ Units
3	<b>Distribution Channel Management</b>
	<ul style="list-style-type: none"> <li>• Management of Distribution Channel – Meaning &amp; Need</li> <li>• Channel Partners- Wholesalers, Distributors and Retailers &amp; their Functions in Distribution Channel, Difference Between a Distributor and a Wholesaler</li> <li>• Choice of Distribution System – Intensive, Selective, Exclusive</li> <li>• Factors Affecting Distribution Strategy – Locational Demand, Product Characteristics, Pricing Policy, Speed or Efficiency, Distribution Cost</li> <li>• Factors Affecting Effective Management Of Distribution Channels <ul style="list-style-type: none"> <li>▪ Channel Design</li> <li>▪ Channel Policy</li> <li>▪ Channel Conflicts: Meaning, Types – Vertical, Horizontal, Multichannel, Reasons for Channel Conflict</li> <li>▪ Resolution of Conflicts: Methods – Kenneth Thomas’s Five Styles of Conflict Resolution</li> <li>▪ Motivating Channel Members</li> <li>▪ Selecting Channel Partners</li> <li>▪ Evaluating Channels</li> <li>▪ Channel Control</li> </ul> </li> </ul>
4	<b>Performance Evaluation, Ethics and Trends</b>
	<p><b>a) Evaluation &amp; Control of Sales Performance:</b></p> <ul style="list-style-type: none"> <li>• Sales Performance – Meaning</li> <li>• Methods of Supervision and Control of Sales Force</li> <li>• Sales Performance Evaluation Criteria- Key Result Areas (KRAs)</li> <li>• Sales Performance Review</li> <li>• Sales Management Audit</li> </ul> <p><b>b) Measuring Distribution Channel Performance:</b></p> <ul style="list-style-type: none"> <li>• Evaluating Channels- Effectiveness, Efficiency and Equity</li> <li>• Control of Channel – Instruments of Control – Contract or Agreement, Budgets and Reports, Distribution Audit</li> </ul> <p><b>c) Ethics in Sales Management</b></p> <p><b>d) New Trends in Sales and Distribution Management</b></p>



***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**4. Customer Relationship Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to Customer Relationship Management	15
2	CRM Marketing Initiatives, Customer Service and Data Management	15
3	CRM Strategy, Planning, Implementation and Evaluation	15
4	CRM New Horizons	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand concept of Customer Relationship Management (CRM) and implementation of Customer Relationship Management
2	To provide insight into CRM marketing initiatives, customer service and designing CRM strategy
3	To understand new trends in CRM, challenges and opportunities for organizations

SN	Modules/ Units
1	<b>Introduction to Customer Relationship Management</b>
	<ul style="list-style-type: none"> <li>• Concept, Evolution of Customer Relationships: Customers as strangers, acquaintances, friends and partners</li> <li>• Objectives, Benefits of CRM to Customers and Organisations, Customer Profitability Segments, Components of CRM: Information, Process, Technology and People, Barriers to CRM</li> <li>• Relationship Marketing and CRM: Relationship Development Strategies: Organizational Pervasive Approach, Managing Customer Emotions, Brand Building through Relationship Marketing, Service Level Agreements, Relationship Challenges</li> </ul>
2	<b>CRM Marketing Initiatives, Customer Service and Data Management</b>
	<ul style="list-style-type: none"> <li>• CRM Marketing Initiatives: Cross-Selling and Up-Selling, Customer Retention, Behaviour Prediction, Customer Profitability and Value Modeling, Channel Optimization, Personalization and Event-Based Marketing</li> <li>• CRM and Customer Service: Call Center and Customer Care: Call Routing, Contact Center Sales-Support, Web Based Self Service, Customer Satisfaction Measurement, Call-Scripting, Cyber Agents and Workforce Management</li> <li>• CRM and Data Management: Types of Data: Reference Data, Transactional Data, Warehouse Data and Business View Data, Identifying Data Quality Issues, Planning and Getting Information Quality, Using Tools to Manage Data, Types of Data Analysis: Online Analytical Processing (OLAP), Clickstream Analysis, Personalisation and Collaborative Filtering, Data Reporting</li> </ul>
3	<b>CRM Strategy, Planning, Implementation and Evaluation</b>
	<ul style="list-style-type: none"> <li>• Understanding Customers: Customer Value, Customer Care, Company Profit Chain: Satisfaction, Loyalty, Retention and Profits</li> <li>• Objectives of CRM Strategy, The CRM Strategy Cycle: Acquisition, Retention and Win Back, Complexities of CRM Strategy</li> <li>• Planning and Implementation of CRM: Business to Business CRM, Sales and CRM, Sales Force Automation, Sales Process/ Activity Management, Sales Territory Management, Contact Management, Lead Management, Configuration Support, Knowledge Management CRM Implementation: Steps- Business Planning, Architecture and Design, Technology Selection, Development, Delivery and Measurement</li> <li>• CRM Evaluation: Basic Measures: Service Quality, Customer Satisfaction and Loyalty, Company 3E Measures: Efficiency, Effectiveness and Employee Change</li> </ul>

4	CRM New Horizons
	<ul style="list-style-type: none"> <li>• e-CRM: Concept, Different Levels of E- CRM, Privacy in E-CRM:</li> <li>• Software App for Customer Service: <ul style="list-style-type: none"> <li>▪ Activity Management, Agent Management, Case Assignment, Contract Management, Customer Self Service, Email Response Management, Escalation, Inbound Communication Management, Invoicing, Outbound Communication Management, Queuing and Routing, Scheduling</li> </ul> </li> <li>• Social Networking and CRM</li> <li>• Mobile-CRM</li> <li>• CRM Trends, Challenges and Opportunities</li> <li>• Ethical Issues in CRM</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**5. Industrial Marketing**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Industrial Marketing -An Introduction, Marketing Environment and Buying Behaviour	15
2	Industrial Marketing Research and Segmentation, Targeting and Positioning in Industrial Market	15
3	Industrial Marketing Mix	15
4	Emerging Trends in Industrial Marketing	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To understand basics of industrial marketing, Marketing Environment, Segmenting Targeting Positioning, channel strategy, marketing communication and pricing
02	To provide knowledge of industrial market structure and how they function
03	To provide understanding of the various attributes and models applicable in Industrial Marketing
04	To acquaint the students with trends in Industrial Marketing

Sr. No.	Modules / Units
1	<b>Industrial Marketing -An Introduction, Marketing Environment and Buying Behaviour</b>
	<ul style="list-style-type: none"> <li>• <b>Introduction to Industrial Marketing:</b> Introduction, Definition, Features, Industrial versus Consumer marketing, Classification of Industrial products and Services</li> <li>• <b>Industrial Marketing Environment:</b> Technological; Customer; Competitive, Legal and Economic Environment; Responsibility of industrial Marketing Manager in planning, Coordination, Execution and control</li> <li>• <b>Industrial Buying and Buying Behaviour:</b> Procurement function; Purchase policy; Organization buying processes, Profile of Business buyers: Buying Centres; Buying Centres Roles; Buying Centre Members, Vendor Analysis: Criteria for evaluating potential vendor; Vendor Rating, Models of industrial buying Behaviour</li> </ul>
2	<b>Industrial Marketing Research and Segmentation, Targeting and Positioning in Industrial Market</b>
	<ul style="list-style-type: none"> <li>• <b>Industrial Marketing Research:</b> Introduction, Classification of Industrial Marketing Research, Industrial Marketing Research Process, Role and Scope of Industrial Marketing Research, Advantages and limitations of Industrial Marketing Research, Role of Industrial Marketing Research in Marketing Information System and Decision Support System.</li> <li>• <b>Segmentation, Targeting and Positioning in Industrial Market:</b> Introduction to segmentation; Criteria for market segmentation; Basis of Market segmentation, choosing the market segmentation, Target Market: Concept, Approaches to Target Market, Positioning: Concept, Objectives of positioning, Positioning of Products and services; Effective Positioning; positioning process.</li> </ul>
3	<b>Industrial Marketing Mix</b>
	<ul style="list-style-type: none"> <li>• <b>Industrial Products and New Product Development:</b> Introduction to Industrial Products; Product Policy; Product Classification; Introduction to new product development; New industrial products; stages in New product development.</li> <li>• <b>Industrial Pricing:</b> Introduction to industrial Pricing; Factors influencing industrial pricing decision; Types of pricing; Leasing; Bidding; Negotiation</li> <li>• <b>Industrial Marketing Communication:</b> Advertising, Personal selling and Sales promotion: Role of advertising in B2B Market; various media options; Advertising on the internet; Using Advertising Agencies for industrial Marketers; Personal Selling in industrial Marketing; Different steps in Personal Selling; Sales promotion in industrial marketing.</li> <li>• <b>Marketing Channels and Physical Distribution of Industrial Products:</b> Industrial marketing channels; Indirect and direct marketing channels; Importance of marketing channels; Factors affecting selection of Marketing Channels; Process of designing the channel structure: Analyzing the channel objectives, constraints, channel tasks, channel alternatives and selecting the channel</li> </ul>
4	<b>Emerging Trends in Industrial Marketing</b>
	<ul style="list-style-type: none"> <li>• <b>Business Networks :</b> Business Networks in Industrial marketing, Relationship in Business networks , Technology and Business networks</li> <li>• <b>E-Procurement in Industrial Market:</b> Meaning , Importance of E-procurement , Implementation of E-procurement</li> <li>• <b>E-Commerce:</b> Definition of E-Commerce, Advantages and disadvantages of B2B E-Commerce, Role of E-Commerce in the context B2B marketer, Forms of B2B E-Commerce, Electronic Data Interchange; E-payments; E-security</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**6. Strategic Marketing Management**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to Strategic Marketing Management	15
2	Segmenting, Targeting, Positioning and Creation of Value in the context of Strategic Marketing	15
3	Strategic Decisions in Product, Services and Branding	15
4	Strategic Decisions in Pricing, Promotion and Distribution and strategic growth management	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To understand marketing strategies and their impact on business models
02	To learn strategic marketing tactics related to product, price, service, brand, positioning, incentives and communication for business growth.
03	To learn the various marketing strategies adopted by Companies to create a competitive advantage

Sr. No.	Modules / Units
1	<b>Introduction to Strategic Marketing Management</b> <ul style="list-style-type: none"> <li>• <b>Marketing:</b> Nature of Marketing, marketing as an art, science and business discipline, marketing as a value creation process</li> <li>• <b>Strategic decisions:</b> Nature of strategy, the marketing strategy interface, difference between marketing planning and strategic planning</li> <li>• <b>Identifying the market:</b> The five C framework-customer, company, collaborator, competitor, context</li> <li>• <b>The 7 tactics of Marketing mix:</b> Product, service, brand, price, incentives, communication and distribution</li> <li>• <b>Business Model and Strategic Marketing Planning:</b> Meaning, Role of Business models in marketing management, Strategies for developing a business models: top-down business model generation, bottom up business model generation, The G-STIC framework for marketing planning: Goal-Strategy-Tactics-Implementation-control</li> </ul>
2	<b>Segmenting, Targeting, Positioning and Creation of Value in the context of Strategic Marketing:</b> <ul style="list-style-type: none"> <li>• <b>Segmentation:</b> Essence of segmentation, Factors to be considered while segmenting, key segmenting principles- relevance, similarity, exclusivity</li> <li>• <b>Identifying Target Customers:</b> Factors to be considered while targeting, targeting strategies-One for all strategy, one for each strategy, Strategic Targeting criteria: target attractiveness, target compatibility Essential strategic assets for target compatibility: business infrastructure, collaborator networks, human capital, intellectual property, strong brands, established customer base, synergistic offerings, access to scarce resources and capital.</li> <li>• <b>Creating Customer Value through Positioning:</b> Role of strategic positioning, strategic positioning options: The quality option, value option, the pioneer, a narrow product focus, target segment focus; strategies for creating superior customer value.</li> </ul> <p><b>Creating Company Value:</b> Understanding Company Value: Monetary, functional and psychological value; strategically managing profits--increasing sales revenue-through volume, optimizing price, lowering costs</p> <p><b>Creating Collaborator Value:</b> Meaning of collaborators, collaboration as business process, advantages and drawbacks of collaboration, levels of strategic collaboration: explicit, implicit; alternatives to collaboration: horizontal and vertical integration, managing collaborator relations; gaining collaborator power: offering differentiation; collaborator size, strategic importance, switching costs</p>

3	<b>Strategic Decisions in Product, Services and Branding</b>
	<ul style="list-style-type: none"> <li>• <b>Managing Product and Services:</b> factors affecting product and service decisions- performance, consistency, reliability, durability, compatibility, ease of use, technological design, degree of customization, physical aspects, style, packaging.</li> </ul> <p><b>Managing New Products:</b> Forecasting new product demand using Primary Data and secondary data: offering specific forecasting, forecasting by analogy, category based forecasting.</p> <p><b>New product adoption:</b> Understanding new product adoption, factors influencing diffusion of new offering, new product development process, managing risk in new products- market risk and technological risk, Moore's Model of adoption of new technologies, managing product life cycle at various stages, extending Product lifecycle.</p> <ul style="list-style-type: none"> <li>• <b>Managing Product Lines:</b> Managing vertical, upscale, downscale, horizontal product-Line Extensions, Managing Product Line Cannibalization, Managing Product lines to gain and defend market position-The Fighting Brand Strategy, The sandwich strategy, The Good-better-best strategy</li> <li>• <b>Brand Tactics:</b> Brand: Meaning, brand identity, brand as value creation process brand hierarchy-Individual and umbrella branding, brand extension: vertical and horizontal, brand equity and brand power, measuring brand equity-cost based approach, market based approach and financial based approach.</li> </ul>
4	<b>Strategic Decisions in Pricing, Promotion and Distribution and strategic growth management</b>
	<p><b>A) Managing Price:</b> Major approaches to strategic pricing-cost based pricing, competitive pricing, demand pricing; Price sensitivity: meaning, psychological pricing, Five psychological pricing effects: reference price effects, price quantity effects, price tier effects, price ending effects, product line effects; Understanding competitive pricing and price wars: factors affecting price wars, Approach for developing a strategic response to competitors price cut, Other pricing strategies-captive pricing, cross price elasticity, deceptive pricing, everyday low pricing, experience curve pricing, loss leader pricing, horizontal price fixing, price signalling.</p> <p><b>B) Managing Promotions and incentives:</b> Promotion mix strategy, Factors affecting strategic decisions in promotion mix, Promotion expenditure strategy, Methods to determine promotion expenditure-Breakdown Method, Buildup Method, Push and Pull promotions.</p> <p>Managing incentives as a value creation process, Goals of using customer incentives, Monetary incentives for customers, Non monetary incentives for customers.</p> <p>Collaborator incentives meaning, monetary incentives-slotting allowance, stocking allowance, cooperative advertising allowance, market development allowance, display allowance, spiffs</p> <p><b>C) Managing distribution:</b> Distribution as value creation process, distribution channel design process- Channel structure: Direct, indirect and hybrid channel; channel coordination- common ownership, contractual relationship, implicit channel coordination; channel type, channel coverage, channel exclusivity</p> <p><b>D) Strategic Growth Management:</b> Gaining market position: strategies to gain market position: steal share strategy, market growth strategy, market innovation strategy; Pioneering new markets: Meaning, Types of Pioneers: technology, product, business model, markets; benefits and drawbacks of being a Pioneer.</p> <p><b>Defending market position:</b> Strategies to defend market position- ignoring competitors' action, repositioning the existing offer- repositioning to increase value for current customers, repositioning to attract new customers.</p>



***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**1. Finance for HR Professionals and  
Compensation Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Compensation Plans and HR Professionals	15
2	Incentives and Wages	15
3	Compensation to Special Groups and Recent Trends	15
4	Legal and Ethical issues in Compensation	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To orient HR professionals with financial concepts to enable them to make prudent HR decisions
2	To understand the various compensation plans
3	To study the issues related to compensation management and understand the legal framework of compensation management

SN	Modules/ Units
1	<b>Compensation Plans and HR Professionals</b>
	<ul style="list-style-type: none"> <li>• Meaning, Objectives of Compensation Plans, Role of HR Professionals in Compensation Plans, Types of Compensation: Financial and non-financial, Factors Influencing Compensation</li> <li>• Compensation Tools: Job based and Skill based, Models: Distributive Justice Model and Labour Market Model, Dimensions of Compensation</li> <li>• 3 Ps Compensation Concept, Benefits of Compensation: Personal, Health and Safety, Welfare, Social Security</li> <li>• Pay Structure: Meaning, Features, Factors, Designing the Compensation System, Compensation Scenario in India.</li> </ul>
2	<b>Incentives and Wages</b>
	<ul style="list-style-type: none"> <li>• Incentive Plans – Meaning and Types: Piecework, Team, Incentives for Managers and Executives, Salespeople, Merit pay, Scanlon Pay, Profit Sharing Plan, ESOP, Gain Sharing, Earning at Risk plan, Technology and Incentives. Prerequisites of an Effective Incentive System</li> <li>• Wage Differentials: Concepts, Factors contributing to Wage Differentials, Types of Wage Differentials, Importance of Wage Differentials, Elements of a Good Wage Plan.</li> <li>• Theories of Wages: Subsistence Theory, Wage Fund Theory, Marginal Productivity Theory, Residual Claimant Theory, Bargaining Theory.</li> </ul>
3	<b>Compensation to Special Groups and Recent Trends</b>
	<ul style="list-style-type: none"> <li>• Compensation for Special Groups: Team Based pay, Remunerating Professionals, Contract Employees, Corporate Directors, CEOs, Expatriates and Executives.</li> <li>• Human Resource Accounting – Meaning, Features, Objectives and Methods</li> <li>• Recent Trends: Golden Parachutes, e-Compensation, Salary Progression Curve, Competency and Skill based, Broad banding and New Pay, Cafeteria approach – Features, Advantages and Disadvantages.</li> </ul>
4	<b>Legal and Ethical issues in Compensation</b>
	<ul style="list-style-type: none"> <li>• Legal Framework of Compensation in India: Wage Policy in India, Payment of Bonus Act 1965, Equal Remuneration Act 1976, Payment of Wages Act 1936, Payment of Gratuity Act 1972, Employee Compensation Act 1923, Employees Provident Funds and Miscellaneous Provision Act 1952.</li> <li>• Pay Commissions, Wage Boards, Adjudication, Legal considerations, COBRA requirement, Pay Restructuring in Mergers and Acquisitions, Current Issues and Challenges in Compensation Management, Ethics in Compensation Management.</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**2. Strategic Human Resource Management and  
HR Policies**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	SHRM - An Overview	15
2	HR Strategies	15
3	HR Policies	15
4	Recent Trends in SHRM	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand human resource management from a strategic perspective
2	To link the HRM functions to corporate strategies in order to understand HR as a strategic resource
3	To understand the relationship between strategic human resource management and organizational performance
4	To apply the theories and concepts relevant to strategic human resource management in contemporary organizations
5	To understand the purpose and process of developing Human Resource Policies

SN	Modules/ Units
1	<b>SHRM - An Overview</b>
	<ul style="list-style-type: none"> <li>• Strategic Human Resource Management (SHRM) – Meaning, Features, Evolution, Objectives, Advantages, Barriers to SHRM, SHRM v/s Traditional HRM, Steps in SHRM, Roles in SHRM - Top Management, Front-line Management, HR, Changing Role of HR Professionals, Models of SHRM – High Performance Working Model, High Commitment Management Model, High Involvement Management Model</li> <li>• HR Environment –Environmental trends and HR Challenges</li> <li>• Linking SHRM and Business Performance</li> </ul>
2	<b>HR Strategies</b>
	<ul style="list-style-type: none"> <li>• Developing HR Strategies to Support Organisational Strategies, Resourcing Strategy – Meaning and Objectives, Strategic HR Planning – Meaning, Advantages, Interaction between Strategic Planning and HRP, Managing HR Surplus and Shortages, Strategic Recruitment and Selection – Meaning and Need, Strategic Human Resource Development – Meaning, Advantages and Process, Strategic Compensation as a Competitive Advantage, Rewards Strategies – Meaning, Importance, Employee Relations Strategy, Retention Strategies, Strategies for Enhancing Employee Work Performance</li> </ul>
3	<b>HR Policies</b>
	<ul style="list-style-type: none"> <li>• Human Resource Policies – Meaning, Features, Purpose of HR Policies, Process of Developing HR Policies, Factors affecting HR Policies, Areas of HR Policies in Organisation, Requisites of a Sound HR Policies – Recruitment, Selection, Training and Development, Performance Appraisal, Compensation, Promotion, Outsourcing, Retrenchment, Barriers to Effective Implementation of HR Policies and Ways to Overcome These Barriers, Need for Reviewing and Updating HR Policies, Importance of Strategic HR Policies to Maintain Workplace Harmony</li> </ul>
4	<b>Recent Trends in SHRM</b>
	<ul style="list-style-type: none"> <li>• i.e. Mentoring</li> <li>• Employee Engagement – Meaning, Factors Influencing Employee Engagement, Strategies for Enhancing Employee Engagement</li> <li>• Contemporary Approaches to HR Evaluation – Balance Score Card, HR Score Card, Benchmarking and Business Excellence Model</li> <li>• Competency based HRM – Meaning, Types of Competencies, Benefits of Competencies for Effective Execution of HRM Functions.</li> <li>• Human Capital Management –Meaning and Role</li> <li>• New Approaches to Recruitment – Employer Branding, Special Event Recruiting, Contest Recruitment, e - Recruitment</li> <li>• Strategic International Human Resource Management – Meaning and Features, International SHRM Strategic Issues, Approaches to Strategic International HRM.</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**3. Performance Management and Career Planning**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Performance Management – An Overview	15
2	Performance Management Process	15
3	Ethics, Under Performance and Key Issues in Performance Management	15
4	Career Planning and Development	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand the concept of performance management in organizations
2	To review performance appraisal systems
3	To understand the significance of career planning and practices

SN	Modules/ Units
1	<b>Performance Management – An Overview</b>
	<ul style="list-style-type: none"> <li>• Performance Management– Meaning, Features, Components of Performance Management, Evolution, Objectives, Need and Importance, Scope, Performance Management Process, Pre-Requisites of Performance Management, Linkage of Performance Management with other HR functions, Performance Management and Performance Appraisal, Performance Management Cycle</li> <li>• Best Practices in Performance Management, Future of Performance Management.</li> <li>• Role of Technology in Performance Management</li> </ul>
2	<b>Performance Management Process</b>
	<ul style="list-style-type: none"> <li>• Performance Planning – Meaning, Objectives, Steps for Setting Performance Criteria, Performance Benchmarking</li> <li>• Performance Managing – Meaning, Objectives, Process</li> <li>• Performance Appraisal – Meaning, Approaches of Performance Appraisal – Trait Approach, Behaviour Approach, Result Approach</li> <li>• Performance Monitoring–Meaning, Objectives and Process</li> <li>• Performance Management Implementation – Strategies for Effective Implementation of Performance Management</li> <li>• Linking Performance Management to Compensation</li> <li>• Concept of High Performance Teams</li> </ul>
3	<b>Ethics, Under Performance and Key Issues in Performance Management</b>
	<ul style="list-style-type: none"> <li>• Ethical Performance Management - Meaning, Principles, Significance of Ethics in Performance Management, Ethical Issues in Performance Management, Code of Ethics in Performance Management, Building Ethical Performance Culture, Future Implications of Ethics in Performance Management</li> <li>• Under Performers and Approaches to Manage Under Performers, Retraining</li> <li>• Key Issues and Challenges in Performance Management</li> <li>• Potential Appraisal: Steps, Advantages and Limitations.</li> <li>• Pay Criteria -Performance related pay, Competence related pay, Team based pay, Contribution related pay.</li> </ul>
4	<b>Career Planning and Development</b>
	<ul style="list-style-type: none"> <li>• Career Planning - Meaning, Objectives, Benefits and Limitations, Steps in Career Planning, Factors affecting Individual Career Planning, Role of Mentor in Career Planning, Requisites of Effective Career Planning</li> <li>• Career Development – Meaning, Role of employer and employee in Career Development, Career Development Initiatives</li> <li>• Role of Technology in Career Planning and Development</li> <li>• Career Models – Pyramidal Model, Obsolescence Model, Japanese Career Model</li> <li>• New Organizational Structures and Changing Career Patterns</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**4. Industrial Relations**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Industrial Relations- An overview	15
2	Industrial Disputes	15
3	Trade Unions and Collective Bargaining	15
4	Industrial Relations Related Laws in India	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand the concept of performance management in organizations
2	To review performance appraisal systems
3	To understand the significance of career planning and practices

SN	Modules/ Units
1	<b>Industrial Relations- An overview</b>
	<ul style="list-style-type: none"> <li>• Meaning, Objectives, Characteristics of a good Industrial Relations System/Principles of a good IR/Essentials of good IR, Scope, Significance/Need and Importance of IR, Major Stakeholders of IR, Evolution of IR in India, Factors affecting IR, Role of State, Employers and Unions in IR, Changing Dimensions of IR in India, Impact of Liberalisation, Privatisation and Globalisation on Industrial Relations, Issues and Challenges of industrial relations in India</li> </ul>
2	<b>Industrial Disputes</b>
	<p><b>a) Industrial Disputes:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Industrial Dispute, Causes, Forms/Types, Consequences/Effects, Methods of Settling Industrial Disputes (Arbitration, Joint Consultations, Works Committee, Conciliation, Adjudication etc)</li> <li>• Concepts Related to Industrial Disputes (Relevant Examples): Strike, Layoff, Lockout, Retrenchment</li> </ul> <p><b>b) Employee Discipline:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Determinants, Causes of Indiscipline, Code of Discipline and its Enforcement.</li> </ul> <p><b>c) Grievance Handling:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Grievances, Causes of Grievances, Guidelines for Grievance Handling, Grievance Redressal Procedure in India.</li> </ul> <p><b>d) Workers' Participation in Management:</b></p> <ul style="list-style-type: none"> <li>• Meaning and Types with Respect to India</li> </ul>
3	<b>Trade Unions and Collective Bargaining</b>
	<p><b>a) Trade Unions:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Features, Objectives, Role of Trade Unions, Functions/Activities, Types, Evolution of Trade Unions across Globe, Evolution of Trade Unions in India, Structure of Trade Unions in India, Recognition of Trade Unions, Rights and Privileges of Registered Trade Unions, Impact of Globalisation on Trade Unions in India, Central Organisations of Indian Trade Unions : INTUC, AITUC, HMS, UTUC, Problems of Trade Unions in India.</li> </ul> <p><b>b) Collective Bargaining:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Features, Importance, Scope, Collective Bargaining Process, Prerequisites of Collective Bargaining, Types of Collective Bargaining Contracts, Levels of Collective Bargaining, Growth of Collective Bargaining in India, Obstacles to Collective Bargaining in India.</li> </ul>



SN	Modules/ Units
4	<b>Industrial Relations Related Laws in India</b>
	<ul style="list-style-type: none"> <li>• Role of Judiciary in Industrial Relations: Labour Court, Industrial Tribunal, National Tribunal</li> <li>• The Trade Unions Act, 1926;</li> <li>• The Industrial Employment (Standing Orders) Act, 1946;</li> <li>• The Industrial Disputes Act, 1947;</li> <li>• The Factories' Act, 1948</li> <li>• The Minimum Wages Act, 1948</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**5. Talent & Competency Management**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to Talent Management	15
2	Talent Management System	15
3	Contemporary Issues and Current Trends in Talent Management	15
4	Competency Management and Competency Mapping	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To understand key talent management & competency management concepts
02	To understand the concept and importance of competency mapping
03	To understand the role of talent management and competency management in building sustainable competitive advantage to an organization
04	To know the ethical and legal obligations associated with talent management

Sr. No.	Modules / Units
<b>1</b>	<b>Introduction to Talent Management</b>
	<ul style="list-style-type: none"> <li>Talent Management – Meaning, History, Scope of Talent Management, Need of Talent Management</li> <li>Benefits and Limitations of Talent Management</li> <li>Principles of Talent Management</li> <li>Source of Talent Management</li> <li>Talent Gap – Meaning, Strategies to Fill Gaps</li> <li>The Talent Value Chain</li> <li>Role of HR in Talent Management</li> <li>Role of Talent Management in building Sustainable Competitive Advantage to an Organization</li> </ul>
<b>2</b>	<b>Talent Management System</b>
	<ul style="list-style-type: none"> <li>Talent Management System – Meaning, Key Elements of Talent Management System</li> <li>Critical Success Factors to Create Talent Management System</li> <li>Building Blocks for Talent Management - Introduction, Effective Talent Management System, Building Blocks of Effective Talent Management System</li> <li>Life Cycle of Talent Management - Meaning, Steps in Talent Management Process, Importance of Talent Management Process, Essentials of Talent Management Process</li> <li>Approaches to Talent Management</li> <li>Talent Management Strategy – Meaning, Developing a Talent Management Strategy, Mapping Business Strategies and Talent Management Strategies</li> <li>Talent Management and Succession Planning</li> </ul>
<b>3</b>	<b>Contemporary Issues and Current Trends in Talent Management</b>
	<ul style="list-style-type: none"> <li>Role of Information Technology in Effective Talent Management Systems, Talent Management Information System, Creating Business Value through Information Technology, Five Steps to a Talent Management Information Strategy</li> <li>Contemporary Talent Management Issues, Talent Management Challenges</li> <li>Current Trends in Talent Management</li> <li>Best Practices of Talent Management</li> <li>Ethical and Legal Obligations Associated with Talent Management</li> <li>Talent Management in India</li> </ul>
<b>4</b>	<b>Competency Management and Competency Mapping</b>
	<ul style="list-style-type: none"> <li>Concept of Competency and Competence, Competence v/s Competency</li> <li>Types of Competencies, Benefits and Limitations of implementing competencies</li> <li>Iceberg Model of Competency</li> <li>Competency Management – Meaning, Features and Objectives</li> <li>Benefits and Challenges of Competency Management</li> <li>Competency Development – Meaning, Process</li> <li>Competency Mapping - Meaning, Features, Need and importance of competency mapping</li> <li>Methods of Competency Mapping, Steps in Competency Mapping</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group C: Human Resource Electives***

**6. Stress Management**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Understanding Stress	15
2	Managing Stress – I	15
3	Managing Stress – II	15
4	Stress Management Leading to Success	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To understand the nature and causes of stress in organizations
02	To familiarize the learners with the stress prevention mechanism
03	To understand the strategies that help cope with stress
04	To be able to apply stress management principles in order to achieve high levels of performance
05	To enable to learners to adopt effective strategies, plans and techniques to deal with stress

Sr. No.	Modules / Units
<b>1</b>	<b>Understanding Stress</b>
	<ul style="list-style-type: none"> <li>• Stress – concept, features, types of stress</li> <li>• Relation between Stressors and Stress</li> <li>• Potential Sources of Stress – Environmental, Organizational and Individual</li> <li>• Consequences of Stress – Physiological, Psychological and Behavioural Symptoms</li> <li>• Stress at work place – Meaning, Reasons</li> <li>• Impact of Stress on Performance</li> <li>• Work Stress Model</li> <li>• Burnout – Concept</li> <li>• Stress v/s Burnout</li> </ul>
<b>2</b>	<b>Managing Stress – I</b>
	<ul style="list-style-type: none"> <li>• Pre-requisites of Stress-free Life</li> <li>• Anxiety - Meaning, Mechanisms to cope up with anxiety</li> <li>• Relaxation - Concept and Techniques</li> <li>• Time Management - Meaning, Importance of Time Management</li> <li>• Approaches to Time Management</li> <li>• Stress Management - Concept, Benefits</li> <li>• Managing Stress at Individual level</li> <li>• Role of Organization in Managing Stress/ Stress Management Techniques</li> <li>• Approaches to Manage Stress - Action oriented, Emotion oriented, Acceptance oriented.</li> </ul>
<b>3</b>	<b>Managing Stress – II</b>
	<ul style="list-style-type: none"> <li>• Models of Stress Management - Transactional Model, Health Realization/ Innate Health Model</li> <li>• General Adaption Syndrome (GAS) - Concept, Stages</li> <li>• Measurement of Stress Reaction - The Physiological Response, The Cognitive Response, The Behavioural Response.</li> <li>• Stress prevention mechanism - Stress management through mind control and purification theory and practice of yoga education.</li> <li>• Stress management interventions: primary, secondary, tertiary.</li> <li>• Meditation – Meaning, Importance</li> <li>• Role of Pranayama, Mantras, Nutrition, Music, Non-violence in stress control</li> </ul>
<b>4</b>	<b>Stress Management Leading to Success</b>
	<ul style="list-style-type: none"> <li>• Eustress – Concept, Factors affecting Eustress</li> <li>• Stress Management Therapy - Concept, Benefits</li> <li>• Stress Counselling - Concept</li> <li>• Value education for stress management</li> <li>• Stress and New Technology</li> <li>• Stress Audit Process</li> <li>• Assessment of Stress - Tools and Methods</li> <li>• Future of Stress Management</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Core Course (CC)***

**5. Logistics and Supply Chain Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Overview of Logistics and Supply Chain Management	15
2	Elements of Logistics Mix	15
3	Inventory Management, Logistics Costing, Performance Management and Logistical Network Analysis	15
4	Recent Trends in Logistics and Supply Chain Management	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To provide students with basic understanding of concepts of logistics and supply chain management
2	To introduce students to the key activities performed by the logistics function
3	To provide an insight in to the nature of supply chain, its functions and supply chain systems
4	To understand global trends in logistics and supply chain management

SN	Modules/ Units
1	<b>Overview of Logistics and Supply Chain Management</b>
	<p><b>a) Introduction to Logistics Management</b></p> <ul style="list-style-type: none"> <li>• Meaning, Basic Concepts of Logistics- Logistical Performance Cycle, Inbound Logistics, Inprocess Logistics, Outbound Logistics, Logistical Competency, Integrated Logistics , Reverse Logistics and Green Logistics</li> <li>• Objectives of Logistics, Importance of Logistics, Scope of Logistics, Logistical Functions/Logistic Mix, Changing Logistics Environment</li> </ul> <p><b>b) Introduction to Supply Chain Management</b></p> <ul style="list-style-type: none"> <li>• Meaning, Objectives, Functions, Participants of Supply Chain, Role of Logistics in Supply Chain, Comparison between Logistics and Supply Chain Management, Channel Management and Channel Integration</li> </ul> <p><b>c) Customer Service: Key Element of Logistics</b></p> <ul style="list-style-type: none"> <li>• Meaning of Customer Service, Objectives, Elements, Levels of customer service, Rights of Customers</li> </ul> <p><b>d) Demand Forecasting</b></p> <ul style="list-style-type: none"> <li>• Meaning, Objectives ,Approaches to Forecasting, Forecasting Methods, Forecasting Techniques, (Numerical on Simple Moving Average, Weighted Moving Average)</li> </ul>
2	<b>Elements of Logistics Mix</b>
	<p><b>a) Transportation</b></p> <ul style="list-style-type: none"> <li>• Introduction, Principles and Participants in Transportation, Transport Functionality, Factors Influencing Transportation Decisions, Modes of Transportation- Railways, Roadways, Airways, Waterways, Ropeways, Pipeline, Transportation Infrastructure, Intermodal Transportation</li> </ul> <p><b>b) Warehousing</b></p> <ul style="list-style-type: none"> <li>• Introduction, Warehouse Functionality, Benefits of Warehousing, Warehouse Operating Principles, Types of Warehouses, Warehousing Strategies, Factors affecting Warehousing</li> </ul> <p><b>c) Materials Handling</b></p> <ul style="list-style-type: none"> <li>• Meaning, Objectives, Principles of Materials Handling, Systems of Materials Handling, Equipments used for Materials Handling, Factors affecting Materials Handling Equipments</li> </ul> <p><b>d) Packaging</b></p> <ul style="list-style-type: none"> <li>• Introduction, Objectives of Packaging, Functions/Benefits of Packaging, Design Considerations in Packaging, Types of Packaging Material, Packaging Costs</li> </ul>

SN	Modules/ Units
3	<b>Inventory Management, Logistics Costing, Performance Management and Logistical Network Analysis</b>
	<p><b>a) Inventory Management</b></p> <ul style="list-style-type: none"> <li>• Meaning, Objectives, Functions, Importance, Techniques of Inventory Management (Numericals - EOQ and Reorder levels)</li> </ul> <p><b>b) Logistics Costing</b></p> <ul style="list-style-type: none"> <li>• Meaning, Total Cost Approach, Activity Based Costing, Mission Based Costing</li> </ul> <p><b>c) Performance Measurement in Supply Chain</b></p> <ul style="list-style-type: none"> <li>• Meaning, Objectives of Performance Measurement, Types of Performance Measurement, Dimensions of Performance Measurement, Characteristics of Ideal Measurement System</li> </ul> <p><b>d) Logistical Network Analysis</b></p> <ul style="list-style-type: none"> <li>• Meaning, Objectives, Importance, Scope, RORO/LASH</li> </ul>
4	<b>Recent Trends in Logistics and Supply Chain Management</b>
	<p><b>a) Information Technology in Logistics</b></p> <ul style="list-style-type: none"> <li>• Introduction, Objectives, Role of Information Technology in Logistics and Supply Chain Management, Logistical Information System, Principles of Logistical Information System, Types of Logistical Information System, Logistical Information Functionality, Information Technology Infrastructure</li> </ul> <p><b>b) Modern Logistics Infrastructure</b></p> <ul style="list-style-type: none"> <li>• Golden Quadrilateral, Logistics Parks, Deep Water Ports, Dedicated Freight Corridor, Inland Container Depots/Container Freight Stations, Maritime Logistics, Double Stack Containers/Unit Trains</li> </ul> <p><b>c) Logistics Outsourcing</b></p> <ul style="list-style-type: none"> <li>• Meaning, Objectives, Benefits/Advantages of Outsourcing, Third Party Logistics Provider, Fourth Party Logistics Provider, Drawbacks of Outsourcing, Selection of Logistics Service Provider, Outsourcing-Value Proposition</li> </ul> <p><b>d) Logistics in the Global Environment</b></p> <ul style="list-style-type: none"> <li>• Managing the Global Supply Chain, Impact of Globalization on Logistics and Supply Chain Management, Global Logistics Trends, Global Issues and Challenges in Logistics and Supply Chain Management</li> </ul>



***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019***

***Ability Enhancement Courses (AEC)***

**6. Corporate Communication & Public Relations**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Foundation of Corporate Communication	15
2	Understanding Public Relations	15
3	Functions of Corporate Communication and Public Relations	15
4	Emerging Technology in Corporate Communication and Public Relations	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To provide the students with basic understanding of the concepts of corporate communication and public relations
2	To introduce the various elements of corporate communication and consider their roles in managing organizations
3	To examine how various elements of corporate communication must be coordinated to communicate effectively
4	To develop critical understanding of the different practices associated with corporate communication

SN	Modules/ Units
1	<b>Foundation of Corporate Communication</b> <p>a) <b>Corporate Communication: Scope and Relevance</b></p> <ul style="list-style-type: none"> <li>• Introduction, Meaning, Scope, Corporate Communication in India, Need/ Relevance of Corporate Communication in Contemporary Scenario</li> </ul> <p>b) <b>Keys concept in Corporate Communication</b></p> <ul style="list-style-type: none"> <li>• Corporate Identity: Meaning and Features, Corporate Image: Meaning, Factors Influencing Corporate Image, Corporate Reputation: Meaning, Advantages of Good Corporate Reputation</li> </ul> <p>c) <b>Ethics and Law in Corporate Communication</b></p> <ul style="list-style-type: none"> <li>• Importance of Ethics in Corporate Communication, Corporate Communication and Professional Code of Ethics, Mass Media Laws: Defamation, Invasion of Privacy, Copyright Act, Digital Piracy, RTI</li> </ul>
2	<b>Understanding Public Relations</b> <p>a) <b>Fundamental of Public Relations:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Meaning, Essentials of Public Relations, Objectives of Public Relations, Scope of Public Relations, Significance of Public Relations in Business</li> </ul> <p>b) <b>Emergence of Public Relations:</b></p> <ul style="list-style-type: none"> <li>• Tracing Growth of Public Relations, Public Relations in India, Reasons for Emerging International Public Relations</li> </ul> <p>c) <b>Public Relations Environment:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Social and Cultural Issues, Economic Issues, Political Issues, Legal Issues</li> </ul> <p>d) <b>Theories used in Public Relations:</b></p> <ul style="list-style-type: none"> <li>• Systems Theory, Situational Theory, Social Exchange Theory, Diffusion Theory</li> </ul>
3	<b>Functions of Corporate Communication and Public Relations</b> <p>a) <b>Media Relations:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Importance of Media Relations, Sources of Media Information, Building Effective Media Relations, Principles of Good Media Relations</li> </ul> <p>b) <b>Employee Communication:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Sources of Employee Communications, Organizing Employee Communications, Benefits of Good Employee Communications, Steps in Implementing An Effective Employee Communications Programme, Role of Management in Employee Communications</li> </ul> <p>c) <b>Crisis Communication:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Impact of Crisis, Role of Communication in Crisis, Guidelines for Handling Crisis, Trust Building</li> </ul> <p>d) <b>Financial Communication:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Tracing the Growth of Financial Communication in India, Audiences for Financial Communication, Financial Advertising</li> </ul>

SN	Modules/ Units
4	<b>Emerging Technology in Corporate Communication and Public Relations</b>
	<p><b>a) Contribution of Technology to Corporate Communication</b></p> <ul style="list-style-type: none"> <li>• Introduction, Today's Communication Technology, Importance of Technology to Corporate Communication, Functions of Communication Technology in Corporate Communication, Types of Communication Technology, New Media: Web Conferencing, Really Simple Syndication (RSS)</li> </ul> <p><b>b) Information Technology in Corporate Communication</b></p> <ul style="list-style-type: none"> <li>• Introduction, E-media Relations, E-internal Communication, E-brand Identity and Company Reputation</li> </ul> <p><b>c) Corporate Blogging</b></p> <ul style="list-style-type: none"> <li>• Introduction, Defining Corporate Blogging, Characteristics of a Blog, Types of Corporate Blogs, Role of Corporate Blogs, Making a Business Blog</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019**

**Reference Books**

<b>Reference Books</b>
<b>Investment Analysis &amp; Portfolio Management</b>
<ul style="list-style-type: none"> <li>• Kevin. S, <i>Security Analysis and Portfolio Management</i></li> <li>• Donald Fischer &amp; Ronald Jordon, <i>Security Analysis &amp; Portfolio Management</i></li> <li>• Prasanna Chandra, <i>Security Analysis &amp; Portfolio Management</i></li> <li>• Sudhindhra Bhatt, <i>Security Analysis and Portfolio Management.</i></li> </ul>
<b>Commodity &amp; Derivatives Market</b>
<ul style="list-style-type: none"> <li>• John C. Hull &amp; Basu -Futures, options &amp; other derivatives</li> <li>• Robert McDonald, <i>Derivatives market</i>, Pearson education</li> <li>• John Hull, <i>Fundamentals of futures &amp; options</i></li> <li>• Ankit Gala &amp; Jitendra Gala, <i>Guide to Indian Commodity market</i>, Buzzingstock publishing house</li> <li>• K.Sasidharan &amp; Alex K. Mathews, <i>Option trading – bull market strategies</i>, McGraw Hill publication</li> <li>• Niti Chatnani, <i>Commodity markets</i>, McGraw Hill Publication</li> <li>• S.Kevin, <i>Commodities &amp; financial derivatives</i>, PHI learning Pvt Ltd</li> <li>• Suni K Parmeswaran, <i>Futures &amp; options</i>, McGraw Hill</li> </ul>
<b>Wealth Management</b>
<ul style="list-style-type: none"> <li>• Harold Evensky, <i>Wealth Management</i>, McGraw Hill Publication</li> <li>• NCFM, CFP, IIBF, etc, <i>Wealth Management modules</i></li> <li>• Harold Evensky, <i>The new wealth Management</i>, CFA Institute Investment Series Publication</li> </ul>
<b>Financial Accounting</b>
<ul style="list-style-type: none"> <li>• Ashish K. Bhattacharyya – “Financial Accounting for Business Managers”, Prentice Hall of India Pvt. Ltd.</li> <li>• Shashi K. Gupta – “Contemporary Issues in Accounting”, Kalyani Publishers.</li> <li>• R. Narayanaswamy – “Financial Accounting”, Prentice Hall of India, New Delhi</li> <li>• Ashok Sehgal – “Fundamentals of Financial Accounting”, Taxmann’s Publishers</li> <li>• Financial Accounting Reporting – Barry Elliot and Jamie Elliot – Prentice Hall ( 14th Edition)</li> </ul>
<b>Risk Management</b>
<ul style="list-style-type: none"> <li>• Thomas S. Coleman, <i>Quantitative Risk Management : A Practical Guide to Financial Risk</i></li> <li>• Steve Peterson, <i>Investment Theory and Risk Management</i></li> <li>• Risk Management , M/s Macmillan India Limited</li> <li>• Theory &amp; Practice of Treasury Risk Management: M/s Taxman Publications Ltd.</li> <li>• Sim Segal, <i>Corporate Value of ERM</i></li> <li>• Dr. G Kotreshwar, <i>Risk Management : Insurance and Derivatives</i>, Himalaya Publishing House</li> </ul>
<b>Direct Taxes</b>
<ul style="list-style-type: none"> <li>• Income Tax Act- Bare act</li> <li>• Dr V K Singhania-Direct Tax Law &amp; Practice</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019**

**Reference Books**

Reference Books
<b>Services Marketing</b>
<ul style="list-style-type: none"> <li>• Valarie A. Zeuhaml &amp; Mary Jo Bitner, <i>Service Marketing</i>, Tata McGrawHill, 6th Edition</li> <li>• Christopher Lovelock, Jochen Wirtz, Jayanta Chatterjee, <i>Service Marketing People, Technology, Strategy – A South Asian Perspective</i>, Pearson Education, 7th Edition</li> <li>• Ramneek Kapoor, Justin Paul &amp; Biplab Halder, <i>Services Marketing-Concepts And Practices</i>, McGrawHill, 2011</li> <li>• Harsh V. Verma, <i>Services Marketing Text &amp; Cases</i>, Pearson Education, 2nd Edition</li> <li>• K. Ram Mohan Rao, <i>Services Marketing</i>, Pearson Education, 2nd Edition, 2011</li> <li>• C. Bhattacharjee, <i>Service Sector Management</i>, Jaico Publishing House, Mumbai, 2008</li> <li>• Govind Apte, <i>Services Marketing</i>, Oxford Press, 2004</li> </ul>
<b>E-Commerce &amp; Digital Marketing</b>
<ul style="list-style-type: none"> <li>• D Nidhi, <i>E-Commerce Concepts and Applications</i>, Edn 2011, International Book house P.Ltd</li> <li>• Bajaj Kamlesh K, <i>E-Commerce- The cutting edge of Business</i></li> <li>• Whiteley David, <i>E-Commerce Technologies and Applications-2013</i></li> <li>• E-Business &amp; E-Commerce Management 3rd Ed, Pearson Education</li> <li>• Kalokota &amp; Robinson, <i>E-Business 2.0 Road map for Success</i>, Pearson Education</li> <li>• Elias M. Awad, <i>Electronic Commerce</i>, 3rd Edition, Pearson Education</li> <li>• Erfan Turban et.al, <i>Electronic Commerce - A Managerial Perspective</i>, Pearson Education</li> <li>• R. Kalokota, Andrew V. Winston, <i>Electronic Commerce - A Manager's Guide</i>, Pearson Education</li> <li>• Tripathi, <i>E-Commerce</i>, Jaico Publishing House, Mumbai, Edn. 2010.</li> </ul>
<b>Sales &amp; Distribution Management</b>
<ul style="list-style-type: none"> <li>• A. Nag, <i>Sales And Distribution Management</i>, McGraw Hill, 2013 Edition</li> <li>• Richard R. Still, Edward W. Cundiff, Norman A.P. Govoni, <i>Sales Management</i>, Pearson Education, 5th Edition</li> <li>• Krishna K. Havaldar, Vasant M. Cavale, <i>Sales And Distribution Management – Text &amp; Cases</i>, McGraw Hill Education, 2nd Edition, 2011</li> <li>• Dr. Matin Khan, <i>Sales And Distribution Management</i>, Excel Books, 1st Edition</li> <li>• Kotler &amp; Armstrong, <i>Principles Of Marketing – South Asian Perspective</i>, Pearson Education, 13th Edition</li> </ul>
<b>Customer Relationship Management</b>
<ul style="list-style-type: none"> <li>• Baran Roger J. &amp; Robert J. Galka (2014), <i>Customer Relationship Management: The Foundation of Contemporary Marketing Strategy</i>, Routledge Taylor &amp; Francis Group.</li> <li>• Andersson Kristin and Carol Kerr (2002), <i>Customer Relationship Management</i>, Tata McGraw-Hill.</li> <li>• Ed Peelen, <i>Customer Relationship Management</i>, Pearson Education</li> <li>• Bhasin Jaspreet Kaur (2012), <i>Customer Relationship Management</i>, Dreamtech Press.</li> <li>• Judith W. Kincaid (2006), <i>Customer Relationship Management Getting it Right</i>, Pearson Education.</li> <li>• Jill Dyche' (2007), <i>The CTM Handbook: A Business Guide to Customer Relationship Management</i>, Pearson Education.</li> <li>• Valarie A Zeithmal, Mary Jo Bitner, Dwayne D Gremler and Ajay Pandit (2010), <i>Services Marketing Integrating Customer Focus Across the Firm</i>, Tata McGraw Hill.</li> <li>• Urvashi Makkar and Harinder Kumar Makkar (2013), <i>CRM Customer Relationship Management</i>, McGraw Hill Education.</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019**

**Reference Books**

<b>Reference Books</b>
<b>Industrial Marketing</b> <ul style="list-style-type: none"> <li>• <i>Industrial Marketing: A practices in India</i> by S.L. Gupta, Sanjeev Bahadur, and Hitesh Gupta: Excel Books (First Edition)</li> <li>• <i>Industrial Marketing</i> by Hory, Sankar and Mukerjee by Excel Books (First Edition)</li> <li>• <i>Industrial Marketing: A Process of Creating and Maintaining Exchange</i> by Krishnamacharyulu , Lalitha R, Publisher: Jaico Book House</li> <li>• <i>Industrial Marketing</i> by Ghosh, Publisher: Oxford University Press</li> <li>• <i>Industrial Marketing</i> by K. K. Havaladar, Publisher: Tata McGraw-Hill Publishing Company limited</li> <li>• <i>Industrial Marketing Management</i> by Govindarajan, Publisher: Vikas Publishing House Pvt. Ltd.</li> <li>• <i>Industrial Marketing</i> by Phadtare M. T, Publisher: Prentice Hall of India Private Limited</li> </ul>
<b>Strategic Marketing Management</b> <ul style="list-style-type: none"> <li>• Alexander Chernav, <i>Strategic management</i>, Eight Edition ,June 2014,Cerebellum press</li> <li>• Richardn m.s Wilson, Collin Gilligan, <i>Strategic marketing management</i>,3rd edition, Elsevier</li> <li>• Subhash .C.Jain, <i>Marketing Strategy</i>, India edition, cengage learning</li> <li>• Sharan Jagpal, <i>Marketng strategy</i>, oxford university press</li> <li>• David A. Aker, <i>Startegic Market Management</i>, John Wiley &amp; Sons, 2001</li> <li>• Philip Kotler, Kevin Keller, Abraham Koshy, Mithileshwar Jha, <i>Marketing Management</i>, Pearson, 13th edition</li> </ul>
<b>Finance for HR Professionals &amp; Compensation Management</b> <ul style="list-style-type: none"> <li>• Gary Dessler, Biju Varkkey, <i>Human Resource Management</i>, Pearson, 12th edition</li> <li>• Mick Marchington and Adrian Wilkinson, <i>Human Resource Management at Work – People Management and Development- Illrd Edition</i>,</li> <li>• Shashi K. Gupta, Rosy Joshi, <i>Human Resource Management</i>, Kalyani Publishers</li> <li>• Gary Dessler, <i>Framework for HRM</i>, 3rd Edition, Pearson Education</li> <li>• Ashwathappa, <i>Human Resource Management</i></li> <li>• Luis.R.Gomez, David.B.Balkin, Robert. L. Cardy, <i>Managing Human Resources – IVth Edition</i>, (Eastern Economy Edition)</li> <li>• Milkovich, George T, Newman J.M, <i>Compensation</i>, Tata Mc Graw Hill.</li> <li>• Henderson, R.O, <i>Compensation Management</i>, Pearson Edition .</li> <li>• BD Singh, <i>Compensation and Reward Management</i>, Excel Books.</li> <li>• Karen Permant, Joe Knight, <i>Financial Intelligence for HR Professionals</i></li> <li>• Sharma A.M, <i>Understanding Wage system</i>, Himalaya Publishing House, Mumbai.</li> </ul>
<b>Strategic Human Resource Management &amp; HR Policies</b> <ul style="list-style-type: none"> <li>• Michael Armstrong, Angela Baron, <i>Handbook of Strategic HRM</i>, Jaico publishing House</li> <li>• Armstrong M.-<i>Strategic Human Resource Management_ A Guide to Action</i> (2006)</li> <li>• <i>Strategic Human Resource Management</i>, Tanuja Agarwal</li> <li>• <i>Strategic Human Resource Management</i>, Jeffrey A. Mello</li> <li>• Gary Dessler, <i>Human Resource Management</i>, PHI, New Delhi, 2003</li> <li>• Charles R. Greer, <i>Strategic Human Resource Management</i>, Pearson Education, 2003</li> <li>• Rajib Lochan Dhar, <i>Strategic Human Resource Management</i>, Excel Books, NewDelhi, 2008</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019  
Reference Books**

<b>Reference Books</b>
<b>Performance Management &amp; Career Planning</b> <ul style="list-style-type: none"> <li>• Shashi K. Gupta, Rosy Joshi, Human Resource Management, Kalyani Publishers</li> <li>• Armstrong, Michael, Baron, Performance Management, Jaico Publishers</li> <li>• Robert Bacal, Performance Management, McGraw-Hill Education, 2007</li> <li>• T.V. Rao, Performance Management and Appraisal Systems: HR Tools for Global Competitiveness, Response Books, New Delhi, 2007.</li> <li>• Davinder Sharma, Performance Appraisal and Management, Himalaya Publishing House.</li> <li>• A.S. Kohli, T. Deb, Performance Management, Oxford University Press.</li> <li>• Herman Aguinis, Performance Management, Second edition, Pearson Education.</li> </ul>
<b>Industrial Relations</b> <ul style="list-style-type: none"> <li>• Davar R S: Personnel Management and Industrial Relations in India</li> <li>• Mamoria C B: Industrial Relations</li> <li>• Charles Myeres: Industrial Relations in India</li> <li>• Arun Monappa: Industrial Relations</li> <li>• Sharma A M : Industrial Relations</li> <li>• Ahuja K K : Industrial Relations Theory and Practice</li> <li>• C.S. Vekata Ratnam : Globalisation and Labour-Management Relations</li> <li>• Srivastava K D: Laws relating to Trade Unions and Unfair Labour Practice</li> <li>• A.M.Sarma: A conceptual and legal frame work</li> <li>• Farnham, David and John Pimlot, Understanding Industrial Relations, London: Cassell</li> <li>• Ratna Sen, Industrial Relations in India, Shifting Paradigms, Macmillan India Ltd., New Delhi, 2009.</li> <li>• C.S.Venkata Ratnam, Globalisation and Labour Management Relations, Response Books, 2010.</li> <li>• Srivastava, Industrial Relations and Labour Laws, Vikas, 6 th edition, 2012.</li> <li>• P.R.N Sinha, Indu Bala Sinha, Seema Priyadarshini Shekhar. Industrial Relations, Trade Unions and Labour Legislation.</li> <li>• Srivastava, S. C. :Industrial Relations and Labour Laws, Vikas Publishing House Pvt Ltd, New Delhi.</li> <li>• Sinha, P.R.N., Sinha, Indu Bala and Shekhar, Seema Priyadarshini Industrial Relations, Trade Unions and Labour Legislation, Pearson Education, New Delhi.</li> </ul>
<b>Talent &amp; Competency Management</b> <ul style="list-style-type: none"> <li>• Dessler Gary, A Framework for Human Resource Management, Pearson Publication, 7th Edition.</li> <li>• Dessler Gary, Varkkey Biju, Fundamentals of Human Resource Management, Pearson Publication, 14th Edition Rao VSP, Human Resource Management, Vikas Publishing, New Delhi</li> <li>• K. Aswathappa – Human Resources and Personnel Management, Tata McGraw Hill</li> <li>• Robbins SP, Timothy A, Judge &amp; Sanghi Seema, Organizational Behaviour, Pearson Education, New Delhi, 13th edition.</li> <li>• Lance A Berger, Dorothy R Berger, Talent Management Hand Book, McGraw Hill</li> <li>• Hasan, M., Singh, A. K., Dhamija, S. (eds.), Talent management in India: Challenges and opportunities, Atlantic Publication</li> <li>• Seema Sanghi: The Handbook of Competency Mapping: Understanding, Designing and Implementing Competency Models in Organizations, Sage Publishing</li> </ul>



**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester V  
with effect from the Academic Year 2018-2019**

**Reference Books**

<b>Reference Books</b>
<b>Stress Management</b>
<ul style="list-style-type: none"> <li>• <i>Stress management by Susan R. Gregson</i></li> <li>• <i>Stress management: Leading to Success By B Hiriyappa</i></li> <li>• <i>Strategic Stress Management: An Organizational Approach by V. Sutherland, C. Cooper</i></li> <li>• <i>Stress Management: An Integrated Approach to Therapy by Dorothy H.G. Cotton</i></li> <li>• <i>Stress Management by A. K. Rai</i></li> <li>• <i>Organizational Stress Management: A Strategic Approach By A. Weinberg, V. Sutherland, C. Cooper</i></li> <li>• <i>Stress Management by Dr. Nivedita</i></li> </ul>
<b>Logistics and Supply Chain Management</b>
<ul style="list-style-type: none"> <li>• <i>David Simchi Levi, Philip Kaminshy, Edith Simchi Levi, Designing &amp; Managing the Supply Chain - Concepts, Strategies and Case Studies Logistics</i></li> <li>• <i>Donald Waters, An Introduction to Supply Chain</i></li> <li>• <i>Martin Christopher, Logistics &amp; Supply Chain Management - Strategies for Reducing Cost &amp; Improving Services</i></li> <li>• <i>Vinod Sople, Logistic Management - The Supply Chain Imperative</i></li> <li>• <i>Donald J Bowersox &amp; David J Closs, Logistic Management - The Integrated Supply Chain Process</i></li> <li>• <i>Alan Rushton, Phil Croucher, Peter Baker, The Handbook of Logistics and Distribution Management- Understanding the Supply Chain</i></li> <li>• <i>Donald J. Bowersox &amp; David J Closs, Logistical Management-The Integrated Supply Chain Process, McGraw Hill Education</i></li> <li>• <i>Ronald H Ballou &amp; Samir K Srivastava, Business Logistics/ Supply Chain Management- Pearson</i></li> <li>• <i>Donald J Bowersox, David J Closs &amp; M Bixby Cooper, Supply Chain Logistics Management- The McGraw Hill Companies</i></li> </ul>
<b>Corporate Communication &amp; Public Relations</b>
<ul style="list-style-type: none"> <li>• <i>Richard R. Dolphin, The Fundamentals of Corporate Communication</i></li> <li>• <i>Joep Cornelissen, Corporate Communications: Theory and Practice</i></li> <li>• <i>James L.Horton, Integrating Corporate Communication: The Cost Effective Use of Message &amp; Medium</i></li> <li>• <i>Sandra Oliver, Handbook of Corporate Communication &amp; Public Relations A Cross-Cultural Approach</i></li> <li>• <i>Rosella Gambetti, Stephen Quigley, Managing Corporate Communication</i></li> <li>• <i>Joseph Fernandez, Corporate Communications: A 21st Century Primer</i></li> <li>• <i>C.B.M. van Riel, Chris Blackburn, Principles of Corporate Communication</i></li> <li>• <i>Jaishri Jethwaney, Corporate Communication: Principles and Practice</i></li> </ul>



**Bachelor of Management Studies (BMS)**  
**Programme**  
*Under Choice Based Credit, Grading and Semester System*  
**Course Structure**

(To be implemented from Academic Year- 2018-2019)

## Semester VI

No. of Courses	Semester VI	Credits
<b>1</b>	<b><i>Elective Courses (EC)</i></b>	
1,2,3 & 4	**Any four courses from the following list of the courses	<b>12</b>
<b>2</b>	<b><i>Core Course (CC)</i></b>	
5	Operation Research	<b>04</b>
<b>3</b>	<b><i>Ability Enhancement Course (AEC)</i></b>	
6	Project Work	<b>04</b>
<b>Total Credits</b>		<b>20</b>

<b>** List of group of Elective Courses(EC)for Semester VI (Any Four)</b>	
<b>Group A: Finance Electives (Any four Courses)</b>	
1	International Finance
2	Innovative Financial Services
3	Project Management
4	Strategic Financial Management
5	Financing Rural Development
6	Indirect Taxes
<b>Group B:Marketing Electives (Any four Courses)</b>	
1	Brand Management
2	Retail Management
3	International Marketing
4	Media Planning & Management
5	Sports Marketing
6	Marketing of Non Profit Organisation
<b>Group C: Human Resource Electives (Any four Courses)</b>	
1	HRM in Global Perspective
2	Organisational Development
3	HRM in Service Sector Management
4	Workforce Diversity
5	Human Resource Accounting & Audit
6	Indian Ethos in Management

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group A: Finance Electives***

**1. International Finance**

***Modules at a Glance***

SN	Modules	No. of Lectures
1	Fundamentals of International Finance	15
2	Foreign Exchange Markets, Exchange Rate Determination & Currency Derivatives	15
3	World Financial Markets & Institutions & Risks	15
4	Foreign Exchange Risk, Appraisal & Tax Management	15
Total		60

***Objectives***

SN	Objectives
1	The objective of this course is to familiarize the student with the fundamental aspects of various issues associated with International Finance
2	The course aims to give a comprehensive overview of International Finance as a separate area in International Business
3	To introduce the basic concepts, functions, process, techniques and create an awareness of the role, functions and functioning of International Finance in this Globalised Market

SN	Modules/ Units
1	<b>Fundamentals of International Finance</b>
	<p><b>a) Introduction to International Finance:</b></p> <ul style="list-style-type: none"> <li>• Meaning/ Importance of International Finance, Scope of International Finance, Globalization of the World Economy, Goals of International Finance, The Emerging Challenges in International Finance</li> </ul> <p><b>b) Balance of Payment:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Balance of Payment, Accounting Principles in Balance of Payment, Components of Balance of Payments, Balance of Payment Identity Indian Heritage in Business, Management, Production and Consumption.</li> </ul> <p><b>c) International Monetary Systems:</b></p> <ul style="list-style-type: none"> <li>• Evolution of International Monetary System , Gold Standard System , Bretton Woods System, Flexible Exchange Rate Regimes – 1973 to Present, Current Exchange Rate Arrangements, European Monetary System, Fixed &amp; Flexible Exchange Rate System</li> </ul> <p><b>d) An introduction to Exchange Rates:</b></p> <ul style="list-style-type: none"> <li>• Foreign Bank Note Market, Spot Foreign Exchange Market</li> <li>• Exchange Rate Quotations <ul style="list-style-type: none"> <li>▪ Direct &amp; Indirect Rates</li> <li>▪ Cross Currency Rates</li> <li>▪ Spread &amp; Spread %</li> </ul> </li> <li>• Factors Affecting Exchange Rates</li> </ul>
2	<b>Foreign Exchange Markets, Exchange Rate Determination &amp; Currency Derivatives</b>
	<p><b>a) Foreign Exchange Markets:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Foreign Exchange Markets, Structure of Foreign Exchange Markets, Types of Transactions &amp; Settlement Date, Exchange Rate Quotations &amp; Arbitrage, Forward Quotations (Annualized Forward Margin)</li> </ul> <p><b>b) International Parity Relationships &amp; Foreign Exchange Rate:</b></p> <ul style="list-style-type: none"> <li>• Interest Rate Parity, Purchasing Power Parity &amp; Fishers Parity, Forecasting Exchange Rates (Efficient Market Approach, Fundamental Approach, Technical Approach, Performance of the Forecasters), Global Financial Markets &amp; Interest Rates (Domestic &amp; Offshore Markets, Money Market Instruments)</li> </ul> <p><b>c) Currency &amp; Interest Rate Futures:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Currency Options (Option on Spot, Futures &amp; Futures Style Options), Futures Contracts, Markets &amp; the Trading Process, Hedging &amp; Speculation with Interest Rate Futures, Currency Options in India</li> </ul>

SN	Modules/ Units
3	<b>World Financial Markets &amp; Institutions &amp; Risks</b>
	<p><b>a) Euro Currency Bond Markets:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Euro Currency Market, Origin of Euro Currency Market, Euro Bond Market (Deposit, Loan, Notes Market), Types of Euro Bonds, Innovation in the Euro Bond Markets, Competitive Advantages of Euro Banks, Control &amp; Regulation of Euro Bond Market</li> </ul> <p><b>b) International Equity Markets &amp; Investments:</b></p> <ul style="list-style-type: none"> <li>• Introduction to International Equity Market, International Equity Market Benchmarks, Risk &amp; Return from Foreign Equity Investments, Equity Financing in the International Markets, Depository Receipts – ADR,GDR,IDR</li> </ul> <p><b>c) International Foreign Exchange Markets:</b></p> <ul style="list-style-type: none"> <li>• Meaning of International Foreign Exchange Market, FERA v/s FEMA, Scope &amp; Significance of Foreign Exchange Markets, Role of Forex Manager, FDI v/s FPI, Role of FEDAI in Foreign Exchange Market</li> </ul> <p><b>d) International Capital Budgeting:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Capital Budgeting, Capital Budgeting Decisions, Incremental Cash Flows, Cash Flows at Subsidiary and Parent Company, Repatriation of Profits, Capital Budgeting Techniques – NPV</li> </ul>
4	<b>Foreign Exchange Risk, Appraisal &amp; Tax Management</b>
	<p><b>a) Foreign Exchange Risk Management:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Foreign Exchange Risk Management, Types of Risk, Trade &amp; Exchange Risk, Portfolio Management in Foreign Assets, Arbitrage &amp; Speculation</li> </ul> <p><b>b) International Tax Environment:</b></p> <ul style="list-style-type: none"> <li>• Meaning of International Tax Environment, Objectives of Taxation, Types of Taxation, Benefits towards Parties doing Business Internationally, Tax Havens, Tax Liabilities</li> </ul> <p><b>c) International Project Appraisal:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Project Appraisal, Review of Net Present Value Approach (NPV), Option Approach to Project Appraisal, Project Appraisal in the International Context, Practice of Investment Appraisal</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group A: Finance Electives***

**2. Innovative Financial Services**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to Traditional Financial Services	15
2	Issue Management and Securitization	15
3	Financial Services and its Mechanism	15
4	Consumer Finance and Credit Rating	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To familiarize the learners with the fundamental aspects of various issues associated with various Financial Services
2	To give a comprehensive overview of emerging financial services in the light of globalization
3	To introduce the basic concepts, functions, process, techniques and create an awareness of the role, functions and functioning of financial services

SN	Modules/ Units
1	<b>Introduction to Traditional Financial Services</b>
	<p><b>a) Financial Services:</b></p> <ul style="list-style-type: none"> <li>• Concept, Objectives/Functions, Characteristics, Financial Service Market, Financial Service Market Constituents, Growth of Financial Services in India, Problems in Financial Services Sector, Banking and Non-Banking Companies, Regulatory Framework</li> </ul> <p><b>b) Factoring and Forfaiting:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Types of Factoring, Theoretical Framework, Factoring Cost, Advantages and Disadvantages of Factoring, Factoring in India, Factoring v/s Forfaiting, Working of Forfaiting, Benefits and Drawbacks of Forfaiting, Practical Problems.</li> </ul> <p><b>c) Bill Discounting:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Framework, Bill Market Schemes, Factoring V/s Bill Discounting in Receivable Management.</li> </ul>
2	<b>Issue Management and Securitization</b>
	<p><b>a) Issue Management and Intermediaries:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Merchant Bankers/ Lead Managers, Underwriters, Bankers to an Issue, Brokers to an Issue</li> </ul> <p><b>b) Stock Broking:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Stock Brokers, SubBrokers, Foreign Brokers, Trading and Clearing/Self Clearing Members, Stock Trading ( Cash and Normal) Derivative Trading</li> </ul> <p><b>c) Securitization:</b></p> <ul style="list-style-type: none"> <li>• Definition, Securitization v/s Factoring, Features of Securitization, Pass Through Certificates, Securitization Mechanism, Special Purpose Vehicle, Securitisable Assets, Benefits of Securitization, New Guidelines on Securitization</li> </ul>
3	<b>Financial Services and its Mechanism</b>
	<p><b>a) Lease and Hire-Purchase:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Types of Lease - Finance Lease, Operating Lease, Advantages and Disadvantages of Leasing, Leasing in India, Legal Aspects of Leasing.</li> <li>• Definition of Hire Purchase, Hire Purchase and Installment Sale Characteristics, Hire Purchase and Leasing, Advantages of Hire Purchase, Problems of Hire Purchase.</li> </ul> <p><b>b) Housing Finance:</b></p> <ul style="list-style-type: none"> <li>• Introduction, Housing Finance Industry, Housing Finance Policy Aspect, Sources of Funds, Market of Housing Finance, Housing Finance in India- Major Issues, Housing Finance in India – Growth Factors, Housing Finance Institutions in India, National Housing Bank (NHB), Guidelines for Asset Liability Management System in HFC, Fair Trade Practice Code for HFC's, Housing Finance Agencies</li> </ul>

SN	Modules/ Units
	<b>c) Venture Capital:</b> Introduction, Features of Venture Capital, Types of Venture Capital Financing Stages, Disinvestment mechanisms, Venture Capital Investment process, Indian Scenario
4	<b>Consumer Finance and Credit Rating</b>
	<b>a) Consumer Finance:</b> <ul style="list-style-type: none"> <li>• Introduction, Sources, Types of Products, Consumer Finance Practice in India, Mechanics of Consumer Finance, Terms, Pricing, Marketing and Insurance of Consumer Finance, Consumer Credit Scoring, Case for and against Consumer Finance</li> </ul> <b>b) Plastic Money:</b> <ul style="list-style-type: none"> <li>• Growth of Plastic Money Services in India, Types of Plastic Cards- Credit card- Debit Card- Smart card- Add-on Cards, Performance of Credit Cards and Debit Cards, Benefits of Credit Cards, Dangers of Debit Cards, Prevention of Frauds and Misuse, Consumer Protection. Indian Scenario.</li> <li>• Smart Cards- Features, Types, Security Features and Financial Applications</li> </ul> <b>c) Credit Rating:</b> <ul style="list-style-type: none"> <li>• Meaning, Origin, Features, Advantages of Rating, Regulatory Framework, Credit Rating Agencies, Credit Rating Process, Credit Rating Symbols. Credit Rating Agencies in India, Limitations of Rating</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019**

***Elective Courses (EC)***

***Group A: Finance Electives***

**3. Project Management**

***Modules at a Glance***

SN	Modules	No. of Lectures
1	Introduction to Project Management & Project Initiation	15
2	Analyzing Project Feasibility	15
3	Budgeting, Cost & Risk Estimation in Project Management	15
4	New Dimensions in Project Management	15
Total		60

***Objectives***

SN	Objectives
1	The objective of this course is to familiarize the learners with the fundamental aspects of various issues associated with Project Management
2	To give a comprehensive overview of Project Management as a separate area of Management
3	To introduce the basic concepts, functions, process, techniques and create an awareness of the role, functions and functioning of Project Management



SN	Modules/ Units
1	<b>Introduction to Project Management &amp; Project Initiation</b> <p><b>a) Introduction to Project Management:</b></p> <ul style="list-style-type: none"> <li>• Meaning/Definition of Project &amp; Project Management, Classification of Projects, Why Project Management, Characteristics/Importance of Project Management, Need for Project Management (Objectives), History of Project Management</li> </ul> <p><b>b) Organizational Structure (Project Organization):</b></p> <ul style="list-style-type: none"> <li>• Meaning/Definition of Organizational Structure, Organizational Work Flow, Developing Work Integration Positions, Types of Organizational Structure, Forms of Organization, Strategic Business Units (SBU) in Project Management.</li> </ul> <p><b>c) Project Initiation:</b></p> <ul style="list-style-type: none"> <li>• <b>Project Selection</b>-Meaning of Project Selection, Importance of Project Selection, Criteria for Project Selection ( Models), Types of Project Selection, Understanding Risk &amp; Uncertainty in Project Selection</li> <li>• <b>Project Manager</b>-Meaning of Project Manager, Role of Project Manager, Importance of Project Manager, Role of Consultants in Project Management, Selecting Criteria for Project Manager</li> <li>• <b>Project Planning</b>-Importance of Project Planning, Functions of Project Planning, System Integration, Project Management Life Cycle, Conflicts &amp; Negotiation Handling in Project Management, Planning Cycle &amp; Master Production Scheduling</li> </ul>
2	<b>Analyzing Project Feasibility</b> <p><b>a) Project Feasibility Analysis:</b></p> <ul style="list-style-type: none"> <li>• Meaning/Definition of Project Feasibility, Importance of Project Feasibility, Scope of Project Feasibility</li> <li>• Types of Project Feasibility- Market Feasibility, Technical Feasibility, Financial Feasibility, Economic Viability, Operational Feasibility</li> <li>• SWOT Analysis ( Environment Impact Assessment, Social Cost Benefit Analysis)</li> </ul> <p><b>b) Market Analysis:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Market Analysis, Demand Forecasting, Product Mix Analysis, Customer Requirement Analysis</li> </ul> <p><b>c) Technical Analysis:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Technical Analysis, Use of Various Informational Tools for Analyzing, Advancement in the Era of E- Commerce in Project Management</li> </ul> <p><b>d) Operational Analysis:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Operation Management, Importance of Operation Management, Operation Strategy - Levels of Decisions, Production Planning &amp; Control, Material Management - Work Study &amp; Method Study, Lean Operations</li> </ul>

SN	Modules/ Units
3	<b>Budgeting, Cost &amp; Risk Estimation in Project Management</b>
	<p><b>a) Funds Estimation in Project:</b></p> <ul style="list-style-type: none"> <li>Means of Financing, Types of Financing, Sources of Finance, Government Assistance towards Project Management for Start ups, Cost Control (Operating Cycle, Budgets &amp; Allocations), Determining Financial Needs for Projects, Impact of Leveraging on Cost of Finance</li> </ul> <p><b>b) Risk Management in Projects:</b></p> <ul style="list-style-type: none"> <li>What is Risk, Types of Risk in Projects, Risk Management Process, Risk Analysis &amp; Identification, Impact of Risk Handling Measures, Work break Down Structure, New Venture Valuation (Asset Based, Earnings Based, Discounted Cash flow Models)</li> </ul> <p><b>c) Cost Benefit Analysis in Projects</b></p> <ul style="list-style-type: none"> <li>Introduction to Cost Benefit Analysis, Efficient Investment Analysis, Cash - Flow Projections, Financial Criteria for Capital Allocation, Strategic Investment Decisions</li> </ul>
4	<b>New Dimensions in Project Management</b>
	<p><b>a) Modern Development in Project Management:</b></p> <ul style="list-style-type: none"> <li>Introduction to Modern Development in Project Management, Project Management Maturity Model (PMMM), Continuous Improvement, Developing Effective Procedural Documentation, Capacity Planning</li> </ul> <p><b>b) Project Monitoring &amp; Controlling:</b></p> <ul style="list-style-type: none"> <li>Introduction to Project Monitoring &amp; Controlling, The Planning – Monitoring-Controlling Cycle, Computerized Project Management Information System (PMIS), Balance in Control System in Project Management, Project Auditing – Life Cycle</li> </ul> <p><b>c) Project Termination &amp; Solving Project Management Problems:</b></p> <ul style="list-style-type: none"> <li>Meaning of Project Termination, Reasons for Termination of Projects, Process for Terminating Projects, Strategy/ Ways to Solve Project Management Problems, Project Review &amp; Administrative Aspects, Execution Tools for Closing of Projects</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group A: Finance Electives***

**4. Strategic Financial Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Dividend Decision and XBRL	15
2	Capital Budgeting and Capital Rationing	15
3	Shareholder Value and Corporate Governance/ Corporate Restructuring	15
4	Financial Management in Banking Sector and Working Capital Financing	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To match the needs of current market scenario and upgrade the learner's skills and knowledge for long term sustainability
2	Changing scenario in Banking Sector and the inclination of learners towards choosing banking as a career option has made study of financial management in banking sector inevitable
3	To acquaint learners with contemporary issues related to financial management

SN	Modules/ Units
1	<b>Dividend Decision and XBRL</b>
	<p><b>a) Dividend Decision:</b></p> <ul style="list-style-type: none"> <li>Meaning and Forms of Dividend, Dividend-Modigliani and Miller's Approach, Walter Model, Gordon Model, Factors determining Dividend Policy, Types of Dividend Policy</li> </ul> <p><b>b) XBRL:</b></p> <ul style="list-style-type: none"> <li>Introduction, Advantages and Disadvantages, Features and Users</li> </ul>
2	<b>Capital Budgeting and Capital Rationing</b>
	<p><b>a) Capital Budgeting:</b></p> <ul style="list-style-type: none"> <li>Risk and Uncertainty in Capital Budgeting, Risk Adjusted Cut off Rate, Certainty Equivalent Method, Sensitivity Technique, Probability Technique, Standard Deviation Method, Co-efficient of Variation Method, Decision Tree Analysis, Construction of Decision Tree.</li> </ul> <p><b>b) Capital Rationing:</b></p> <ul style="list-style-type: none"> <li>Meaning, Advantages, Disadvantages, Practical Problems</li> </ul>
3	<b>Shareholder Value and Corporate Governance/Corporate Restructuring</b>
	<p><b>a) Shareholder Value and Corporate Governance:</b></p> <ul style="list-style-type: none"> <li>Financial Goals and Strategy, Shareholder Value Creation: EVA and MVA Approach, Theories of Corporate Governance, Practices of Corporate Governance in India</li> </ul> <p><b>b) Corporate Restructuring:</b></p> <ul style="list-style-type: none"> <li>Meaning, Types, Limitations of Merger, Amalgamation, Acquisition, Takeover, Determination of Firm's Value, Effect of Merger on EPS and MPS, Pre Merger and Post Merger Impact.</li> </ul>
4	<b>Financial Management in Banking Sector and Working Capital Financing</b>
	<p><b>a) Financial Management in Banking Sector:</b></p> <ul style="list-style-type: none"> <li>An Introduction, Classification of Investments, NPA &amp; their Provisioning, Classes of Advances, Capital Adequacy Norms, Rebate on Bill Discounting, Treatment of Interest on Advances</li> </ul> <p><b>b) Working Capital Financing:</b></p> <ul style="list-style-type: none"> <li>Maximum Permissible Bank Finance (Tandon Committee), Cost of issuing Commercial Paper and Trade Credit, Matching Approach, Aggressive Approach, Conservative Approach</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019**

**Elective Courses (EC)  
Group A: Finance Electives**

**5. Financing Rural Development**

**Modules at a Glance**

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Rural Banking	10
2	Micro Finance	15
3	MSME Finance	10
4	Final Accounts of the Banking Companies	15
5	Risk Management in Rural Finance	10
<b>Total</b>		<b>60</b>

**Objectives**

<b>SN</b>	<b>Objectives</b>
01	To acquaint the learners with the concept of rural banking
02	To give an overview of micro finance and MSME finance
03	To study the provisions of final accounts of the Banking Companies
04	To understand risk management in rural finance

Sr. No.	Modules / Units
<b>1</b>	<b>Rural Banking</b>
	<p>Rural India – Demographic Features, Characteristics of Rural Society, Economic Features, Infrastructure in Rural Areas, Agriculture Economy, Rural Issues and Rural Development Policies, Sources and Pattern of agriculture in India, Trends in Agricultural Finance.</p> <p>Institutional Framework – Regulation of Rural Financial Services, Rural Credit Institutions, Financing Agriculture/ Allied Activities, Financing Rural Non Farm Sector, Priority Sector Lending, Rural Housing and Education Loans.</p> <p>Rural Banking – Financial Needs of the Poor, Role of Rural Banking, Transaction Costs, Risk Costs, Financing Poor as Bankable Opportunities Micro Credit and Self Help Groups.</p>
<b>2</b>	<b>Micro Finance</b>
	<p>Introduction – Emergence of Microfinance, Definition, Meaning and Scope, Importance and Assumptions. Lessons from International Experience.</p> <p>Models – Models of Microfinance across the world, Portfolio Securitization, SHG-2, National Rural Livelihood Mission, Impact of Microfinance, Impact Assessment and Monitoring, Microfinance and Poverty Assessment Tools.</p> <p>Financial Products and Services – Objectives, Introduction, The role of MFI – Minimalist V/s Integrated, Financial services/ products, Non – Financial Services, Designing Microfinance Models, Liquidity Management, The Revenue Model of an MFI, Cost, Volume and Profit Analysis, Measuring Operating Efficiency and Productivity in MFI's, Factors affecting Operating Expenses, Operating Efficiency.</p>
<b>3</b>	<b>MSME Finance</b>
	<p>Institutional Framework – Central Government, NIMSME, Indian Institute of Entrepreneurship Guwahati, NIESBUD, NSIC, Organizations under the control of State Government, SIDBI, CGTMSE, SMERA, SSI Association in India, Changing Role of MSME Associations , Policy Orientation &amp; Resource Allocation.</p> <p>Financing Options &amp; Modes – Financing MSME, Why lend to MSME Sector, Debt Finance, Equity Finance, Options for Financing MSME's, Financial Products and their Access, Existing MSME Loan Products and their Nature, Common Guidelines for lending to MSME Sector, Factoring, Credit Process, Credit Assessment, Costs and Risks specific to MSME Lending, Risk Rating, Monitoring and Review of Lending.</p>
<b>4</b>	<b>Final Accounts of the Banking Companies</b>
	<p>Legal Provision in Banking Regulation Act, 1949 relating to Accounts. Statutory reserves including Cash Reserve and Statutory Liquidity Ratio. Bill purchase and discounted, Rebate of Bill Discounted.</p> <p>Final Accounts in prescribed form</p> <p>Non – performing assets and Income from non – performing assets, Classification of Advances, standard, sub – standard, doubtful and provisioning requirement.</p>
<b>5</b>	<b>Risk Management in Rural Finance</b>
	<p>An Introduction –Objectives, Introduction , Types of risks for MFI's, Risk Management Framework for MFI's Indicators of Credit Risk, Portfolio at Risk (PAR), Causes of high Credit Risk , Impact of Delinquencies, Managing Credit Risk, Transaction Risk, Process, System &amp; Technology, Relationship and Portfolio Risk. Cash Planning and Co-ordination between Operation Manager and Finance Manager. Compliance to State Acts, Revised Guidelines on Priority Sector, Compliance to RBI Guidelines on NBFC – MFI's, Self Regulation.</p>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group A: Finance Electives***

**6. Indirect Taxes**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to Indirect Taxation and GST	10
2	Concept of Supply	20
3	Registration and Computation of GST	20
4	Filing of Returns	10
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To understand the basics of GST
02	To study the registration and computation of GST
03	To acquaint the students with filing of returns in GST

Sr. No.	Modules / Units
1	<b>Introduction to Indirect Taxation and GST</b>
	<p><b>A. Basics for Taxation</b> - Direct Taxes and Indirect Taxes – Difference, Advantages and Disadvantages, Sources and Authority of Taxes in India (Art 246 of the Indian Constitution)</p> <p><b>B. Introduction to GST</b> – Genesis of GST in India, Power to tax GST (Constitutional Provisions), Extent and Commencement, Meaning and Definition of GST, Benefits of GST, Conceptual Framework – CGST, IGST,SGST,UTGST, Imports of goods or services or both, Export of goods or services or both, Taxes subsumed and not subsumed under GST.</p> <p><b>C. Definitions</b> – Goods ( 2(52) of CGST Act ), Services ( 2(102) of CGST Act ), Money ( 2(75) of CGST Act ), Securities ( 2(101) of SCRA Act,1956), India( 2(56) of CGST Act ), Persons ( 2(84) of CGST Act ),Taxable Person ( 2(107) of CGST Act ), Business ( 2(17) of CGST Act), Consideration( 2(31) of CGST Act ), E- Commerce Operator ( 2(45) of CGST Act ), Supplier(2(105) of CGST Act ),Recipient( 2(93) of CGST Act )</p> <p><b>D. Levy and Collection of GST</b> – Levy and Collection of CGST, IGST, SGST,UTGST (Sec 9 of CGST Act), Composition Scheme under GST (Sec 10 of CGST Act), Power to Grant Exemption (Sec 11 of CGST Act)GST Rate Schedule for Goods and Services.</p>
2	<b>Concept of Supply</b>
	<p><b>A. Taxable Event Supply</b>– Meaning and Scope of Supply (Section 7 Subsection 1, 2 and 3 of Act) Schedule I, Schedule II, Schedule III, Composite and Mixed Supplies (Sec 8 of CGST Act)</p> <p><b>B. Place of Supply</b> – Location of Supplier of Goods and Services, Place of Supply of Goods (Sec 10, 11,12 and 13 of IGST Act), Special Provision for Payment of Tax by a Supplier of Online Information Database Access Retrieval.</p> <p><b>C. Time of Supply</b>- Time of Supply (Sec 31 of CGST Act), Issue of Invoice by the Supplier (Sec 31 (1) and Sec 31(2)of CGST Act), Continuous Supply of Goods and Services, Goods Sent on Approval (Sec 31(7) of CGST Act )</p> <p><b>D. Value of Supply</b> – Determination of Value of Supply (Sec 15 of CGST Act and CGST Rules 2017), Input Tax Credit (Sec 2(62) of CGST Act) Capital Goods (Sec 2(19) of CGST Act), Input Sec 2(59) of CGST Act), Input Service (Sec 2(60) of CGST Act). Eligibility and Conditions for taking Input Tax Credit (Sec 16 of CGST Act)</p>
3	<b>Registration and Computation of GST</b>
	<p><b>A. Registration</b> – Persons liable for Registration (Sec 22 of the Act), Persons not liable for Registration, Procedure for Registration (Sec 25 of the Act), Deemed Registration(Sec 26 of the Act), Special Provisions (Sec 27 of the Act), Amendment, Cancellation and Revocation of Registration(Sec 28,Sec29and Sec 31 of the Act)</p> <p><b>B. Computation of GST</b> – Computation of GST under Inter State and Intra State Supplies.</p> <p><b>C. Payment of Tax</b>- Payment of Tax, Interest and other Amounts(Sec 49 of the Act), Interest on delayed Payment (Sec 50 of the Act), TDS (Sec 51 of the Act), TCS (Sec 52 of the Act)</p>
4	<b>Filing of Returns</b>
	<p><b>A. Documentation</b>- Tax Invoices (Sec 31 and 32 of the Act), Credit and Debit notes(Sec 34 of the Act), Electronic Way Bill</p> <p><b>B. Returns</b> –Types of Returns and Provisions relating to filing of Returns (Sec 37 to Sec 48 of the Act)</p>



***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**1. Brand Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to Brand Management	15
2	Planning and Implementing Brand Marketing Programs	15
3	Measuring and Interpreting Brand Performance	15
4	Growing and Sustaining Brand Equity	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand the meaning and significance of Brand Management
2	To Know how to build, sustain and grow brands
3	To know the various sources of brand equity

SN	Modules/ Units
1	<b>Introduction to Brand Management</b>
	<b>a) Introduction to Brand Management:</b> <ul style="list-style-type: none"> <li>• Meaning of Brand, Branding, Brand Management, Importance of Branding to Consumers, Firms, Brands v/s Products, Scope of Branding, Branding Challenges and Opportunities, Strategic Brand Management Process, Customer Based Brand Equity model (CBBE), Sources of Brand Equity, Steps of Brand Building including Brand Building Blocks, Brand Positioning: Meaning, Importance, Basis</li> </ul>
2	<b>Planning and Implementing Brand Marketing Programs</b>
	<b>a) Planning and Implementing Brand Marketing Programs:</b> <ul style="list-style-type: none"> <li>• Brand Elements: Meaning, Criteria for choosing Brand Elements, Types of Brand Elements</li> <li>• Integrating Marketing Programs and Activities</li> <li>• Personalising Marketing: Experiential Marketing, One to One Marketing, Permission Marketing</li> <li>• Product Strategy: Perceived Quality and Relationship Marketing</li> <li>• Pricing Strategy: Setting Prices to Build Brand Equity</li> <li>• Channel Strategy: Direct, Indirect Channels</li> <li>• Promotion Strategy: Developing Integrated Marketing Communication Programs</li> <li>• Leveraging Secondary Brand Associations to Build Brand Equity: Companies, Countries, Channel of Distribution, Co-branding, Characters, Events.</li> </ul>
3	<b>Measuring and Interpreting Brand Performance</b>
	<b>a) The Brand Value Chain</b> <b>b) Measuring Sources of Brand Equity:</b> <ul style="list-style-type: none"> <li>• <b>Qualitative Research Techniques:</b> Projective Techniques: Completion, Comparison, Brand Personality and Values: The Big Five, Free Association</li> <li>• <b>Quantitative Research Techniques:</b> Brand Awareness: Recognition, Recall, Brand Image, Brand Responses</li> </ul> <b>c) Young and Rubicam's Brand Asset Valuator</b> <b>d) Measuring Outcomes of Brand Equity</b> <ul style="list-style-type: none"> <li>• <b>Comparative Methods:</b> Brand based Comparative Approaches, Marketing Based Comparative Approaches, Conjoint Analysis</li> <li>• <b>Holistic Methods:</b> Residual Approaches, Valuation Approaches: Historical Perspectives and Interbrand's Brand Valuation Methodology</li> </ul>

4	<b>Growing and Sustaining Brand Equity</b>
	<p><b>a) Designing &amp; Implementing Branding Strategies:</b></p> <ul style="list-style-type: none"> <li>• <b>Brand Architecture:</b> Meaning of Brand Architecture, The Brand-Product Matrix, Breadth of a Branding Strategy, Depth of a Branding Strategy</li> <li>• <b>Brand Hierarchy:</b> Meaning of Brand Hierarchy, Building Equity at Different Hierarchy Levels</li> <li>• <b>Cause Marketing to Build Brand Equity:</b> Meaning of Cause Marketing, Advantages, Green Marketing</li> </ul> <p><b>b) Brand Extensions:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Advantages, Disadvantages, Brand Extension and Brand Equity</li> </ul> <p><b>c) Managing Brands over Time:</b></p> <ul style="list-style-type: none"> <li>• Reinforcing Brands, Revitalising Brands</li> </ul> <p><b>d) Building Global Customer Based Brand Equity</b></p>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**2. Retail Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Retail Management- An overview	15
2	Retail Consumer and Retail Strategy	15
3	Merchandise Management and Pricing	15
4	Managing and Sustaining Retail	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To familiarize the students with retail management concepts and operations
2	To provide understanding of retail management and types of retailers
3	To develop an understanding of retail management terminology including merchandize management, store management and retail strategy.
4	To acquaint the students with legal and ethical aspects of retail management
5	To create awareness about emerging trends in retail management

SN	Modules/ Units
1	<b>Retail Management- An overview</b>
	<p><b>a) Retail Management:</b></p> <ul style="list-style-type: none"> <li>• Introduction and Meaning, Significance, Factors Influencing Retail Management, Scope of Retail Management</li> </ul> <p><b>b) Retail Formats:</b></p> <ul style="list-style-type: none"> <li>• Concept of Organized Retailing: Factors Responsible for the Growth of Organized Retail in India, Multichannel Retailing: Meaning and Types, E-tailing: Meaning, Advantages and Limitations</li> </ul> <p><b>c) Emerging Trends in Retailing</b></p> <ul style="list-style-type: none"> <li>• Impact of Globalization on Retailing</li> <li>• I.T in Retail: Importance, Advantages and Limitations, Applications of I.T. in Retail: EDI, Bar Coding, RFID Tags, Electronic Surveillance, Electronic Shelf Labels</li> <li>• FDI in Retailing: Meaning, Need for FDI in Indian Retail Scenario</li> <li>• Franchising: Meaning, Types, Advantages and Limitations, Franchising in India</li> <li>• Green Retailing</li> <li>• Airport Retailing</li> </ul>
2	<b>Retail Consumer and Retail Strategy</b>
	<p><b>a) Retail Consumer/Shopper:</b></p> <ul style="list-style-type: none"> <li>• Meaning of Retail Shopper, Factors Influencing Retail Shoppers, Changing Profile of Retail Shoppers, Market Research as a Tool for Understanding Retail Markets and Shoppers</li> </ul> <p><b>b) CRM in Retail:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Objectives</li> <li>• Customer Retention Approaches: Frequent Shopper Programme, Special Customer Services, Personalization, Community</li> </ul> <p><b>c) Retail Strategy:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Steps in Developing Retail Strategy, Retail Value Chain</li> </ul> <p><b>d) Store Location Selection:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Types of Retail Locations, Factors Influencing Store Location</li> </ul> <p><b>e) HRM in Retail:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Significance, Functions</li> <li>• Organization Structure in Retail: Meaning, Factors Influencing Designing Organization Structure, Organization Structure for Small Stores/Single Stores/Independent Retailers and Retail Store Chain/Department Store</li> </ul>

SN	Modules/ Units
3	<b>Merchandise Management and Pricing</b>
	<p><b>a) Merchandise Management</b></p> <ul style="list-style-type: none"> <li>• Concept, Types of Merchandise, Principles of Merchandising, Merchandise Planning- Meaning and Process, Merchandise Category – Meaning, Importance, Components, Role of Category Captain, Merchandise Procurement/Sourcing- Meaning, Process, Sources for Merchandise</li> </ul> <p><b>b) Buying Function:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Buying Cycle, Factors Affecting Buying Functions, Functions of Buying for Different Types of Organizations Young and Rubicam's Brand Asset Valuator- Independent Store, Retail Chain, Non-store Retailer</li> </ul> <p><b>c) Concept of Lifestyle Merchandising</b></p> <p><b>d) Private Label</b></p> <ul style="list-style-type: none"> <li>• Meaning, Need and Importance, Private Labels in India</li> </ul> <p><b>e) Retail Pricing</b></p> <ul style="list-style-type: none"> <li>• Meaning, Considerations in Setting Retail Pricing</li> <li>• Pricing Strategies: High/ Low Pricing: Meaning, Benefits, Everyday Low Pricing: Meaning, Benefits, Market Skimming, Market Penetration, Leader Pricing, Odd Pricing, Single Pricing, Multiple Pricing, Anchor Pricing</li> <li>• Variable Pricing and Price Discrimination- Meaning Types: <ul style="list-style-type: none"> <li>▪ Individualized Variable Pricing/First Degree Price</li> <li>▪ Self-Selected Variable Pricing/ Second Degree Price Discrimination- Clearance and Promotional Markdowns, Coupons, Price Bundling, Multiple – Unit Pricing</li> <li>▪ Variable Pricing by Market Segment/ Third Degree Price Discrimination</li> </ul> </li> </ul>
4	<b>Managing and Sustaining Retail</b>
	<p><b>a) Retail Store Operations:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Responsibilities of Store Manager, The 5 S's of Retail Operations (Systems, Standards, Stock, Space, Staff)</li> </ul> <p><b>b) Store Design and Layout:</b></p> <ul style="list-style-type: none"> <li>• Store Design- Meaning, Objectives, Principles, Elements of Exterior and Interior Store Design, Store Atmospherics and Aesthetics</li> <li>• Store Layout- Meaning, Types: Grid, Racetrack, Free Form</li> <li>• Signage and Graphics: Meaning, Significance, Concept of Digital Signage</li> <li>• Feature Areas: Meaning, Types: Windows, Entrances, Freestanding Displays, End Caps, Promotional Aisles, Walls, Dressing Rooms, Cash Wraps</li> </ul>

SN	Modules/ Units
	<p><b>c) Visual Merchandising and Display:</b></p> <ul style="list-style-type: none"> <li>• Visual Merchandising- Meaning, Significance, Tools Used for Visual Merchandising</li> <li>• The Concept of Planogram</li> <li>• Display- Meaning, Methods of Display, Errors in Creating Display</li> </ul> <p><b>d) Mall Management</b></p> <ul style="list-style-type: none"> <li>• Meaning and Components: Positioning, Zoning, Promotion and Marketing, Facility Management, Finance Management</li> </ul> <p><b>e) Legal and Ethical Aspects of Retailing</b></p> <ul style="list-style-type: none"> <li>• Licenses/Permissions Required to Start Retail Store in India</li> <li>• Ethical Issues in Retailing</li> </ul> <p><b>Career Options in Retailing</b></p>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group B: Marketing Electives***

**3. International Marketing**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to International Marketing & Trade	15
2	International Marketing Environment and Marketing Research	15
3	International Marketing Mix	15
4	Developments in International Marketing	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand International Marketing, its Advantages and Challenges.
2	To provide an insight on the dynamics of International Marketing Environment.
3	To understand the relevance of International Marketing Mix decisions and recent developments in Global Market



SN	Modules/ Units
1	<b>Introduction to International Marketing &amp; Trade</b> <p><b>a) Introduction of International Marketing:</b></p> <ul style="list-style-type: none"> <li>Meaning, Features of International Marketing, Need and Drivers of International Marketing, Process of International Marketing, Phases of International Marketing, Benefits of International Marketing, Challenges of International Marketing, Difference between Domestic and International Marketing, Different Orientations of International Marketing : EPRG Framework, Entering International Markets :Exporting, Licensing, Franchising, Mergers and Acquisition, Joint Ventures, Strategic Alliance, Wholly Owned Subsidiaries, Contract Manufacturing and Turnkey Projects, Concept of Globalization</li> </ul> <p><b>b) Introduction to International Trade:</b></p> <ul style="list-style-type: none"> <li>Concept of International Trade, Barriers to Trade: Tariff and Non Tariff, Trading Blocs : SAARC, ASEAN, NAFTA, EU, OPEC</li> </ul>
2	<b>International Marketing Environment and Marketing Research</b> <p><b>a) International Marketing Environment:</b></p> <ul style="list-style-type: none"> <li>Economic Environment : International Economic Institution (World Bank, IMF, IFC) ,International Economic Integration (Free Trade Agreement, Customs Union, Common Market, Economic Union)</li> <li>Political and Legal Environment: Political System (Democracy, Authoritarianism, Communism), Political Risk, Political Instability, Political Intervention. Legal Systems (Common Law, Civil Law, Theocratic Law), Legal Differences, Anti Dumping Law and Import License.</li> <li>Cultural Environment : Concept , Elements of Culture (Language, Religion, Values and Attitude , Manners and Customs, Aesthetics and Education) , HOFSTEDE's Six Dimension of Culture , Cultural Values ( Individualism v/s Collectivism)</li> </ul> <p><b>b) Marketing Research:</b></p> <ul style="list-style-type: none"> <li>Introduction, Need for Conducting International Marketing Research, International Marketing Research Process, Scope of International Marketing Research, IT in Marketing Research</li> </ul>
3	<b>International Marketing Mix</b> <p><b>a) International Product Decision</b></p> <ul style="list-style-type: none"> <li>International Product Line Decisions, Product Standardization v/s Adaptation Argument, International Product Life Cycle, Role of Packaging and Labelling in International Markets, Branding Decisions in International Markets, International Market Segmentation and Targeting, International Product Positioning</li> </ul>

SN	Modules/ Units
	<p><b>b) International Pricing Decision:</b></p> <ul style="list-style-type: none"> <li>• Concept of International Pricing, Objectives of International Pricing, Factors Affecting International Pricing</li> <li>• International Pricing Methods: Cost Based, Demand Based, Competition Based , Value Pricing, Target Return Pricing and Going Rate Pricing</li> <li>• International Pricing Strategies : Skimming Pricing, Penetration Pricing , Predatory Pricing</li> <li>• International Pricing Issues : Gray Market , Counter Trade, Dumping, Transfer Pricing</li> </ul> <p><b>c) International Distribution Decisions</b></p> <ul style="list-style-type: none"> <li>• Concept of International Distribution Channels, Types of International Distribution Channels, Factors Influencing Selection of International Distribution Channel</li> </ul> <p><b>d) International Promotion Decisions</b></p> <ul style="list-style-type: none"> <li>• Concept of International Promotion Decision</li> <li>• Planning International Promotional Campaigns: Steps - Determine the Target Audience, Determine Specific Campaigns, Determine Budget, Determine Message, Determine Campaign Approach and Determine Campaign Effectiveness</li> <li>• Standardization V/S Adaptation of International Promotional Strategies</li> <li>• International Promotional Tools/Elements</li> </ul>
<b>4</b>	<b>Developments in International Marketing</b>
	<p><b>a) Introduction -Developing International Marketing Plan:</b></p> <ul style="list-style-type: none"> <li>• Preparing International Marketing Plan, Examining International Organisational Design, Controlling International Marketing Operations, Devising International Marketing Plan</li> </ul> <p><b>b) International strategies:</b></p> <ul style="list-style-type: none"> <li>• Need for International Strategies, Types of International Strategies</li> </ul> <p><b>c) International Marketing of Services</b></p> <ul style="list-style-type: none"> <li>• Concept of International Service Marketing, Features of International Service Marketing, Need of International Service Marketing, Drivers of Global Service Marketing, Advantages and Disadvantages of Global Service Marketing, Service Culture</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**4. Media Planning and Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Overview of Media and Media Planning	15
2	Media Mix & Media Strategy	15
3	Media Budgeting, Buying & Scheduling	15
4	Media Measurement, Evaluation	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand Media Planning, Strategy and Management with reference to current business scenario.
2	To know the basic characteristics of all media to ensure most effective use of advertising budget.
3	To provide an insight on Media Planning, Budgeting, Scheduling and Evaluating the Different Media Buys.

SN	Modules/ Units
1	<b>Overview of Media and Media Planning</b> <p><b>a) Overview of Media and Media Planning:</b></p> <ul style="list-style-type: none"> <li>Meaning of Media &amp; Features of Media, Meaning of Media Planning , Scope of Media planning , Media Planning Elements, Role of Media in Business, Media Planning Process, Impact of Marketing Objectives on Media Planning, Factors Influencing Media Planning Decisions, Role and Importance of Media in Consumer Buying Decision, Role of Media Planner, Challenges of Media Planning, Organization Structure of Media Company, Regulatory Framework and Legal Aspects in Media Planning</li> </ul> <p><b>b) Media Research:</b></p> <ul style="list-style-type: none"> <li>Meaning, Role and Importance</li> <li>Sources of Media Research : Audit Bureau of Circulation, Press Audits, National Readership Survey/IRS, Businessmen's Readership Survey, TRP, National Television Study, ADMAR Satellite Cable Network Study, Reach and Coverage Study, CIB Listenership Survey</li> </ul>
2	<b>Media Mix and Media Strategy</b> <p><b>a) Media Mix:</b></p> <ul style="list-style-type: none"> <li>Meaning, Need for Media Mix, Identifying Audience for Mass Media , Factors Affecting Media Mix Decision, Types of Media Mix Decisions: Broad Media Classes, Media Vehicles, Media Units, Deciding Ideal Media Mix</li> </ul> <p><b>b) Media Choices:</b></p> <ul style="list-style-type: none"> <li><b>Print Meaning-</b> Factors Affecting Selection of Print Media Decisions , Types of Print Media, Advantages and Limitations</li> <li><b>Television-</b> Meaning, Factors Affecting Selection of Television Media Decisions, Advantages and Limitations</li> <li><b>Radio-</b> Meaning, Factors Affecting Selection of Radio Media Decision, Advantages and Limitations</li> <li><b>Out of Home (OOH)-</b> Meaning, Types of OOH, Factors Affecting OOH Planning Decision, Advantages and Limitations</li> </ul> <p><b>c) Emerging Media:</b></p> <ul style="list-style-type: none"> <li>Online, Mobile, Gaming, In flight, In Store, Interactive Media</li> </ul> <p><b>d) Media Strategy:</b></p> <ul style="list-style-type: none"> <li>Meaning, Need for Media Strategy, Situation Analysis for Media Strategy and its Components</li> <li>Steps in Formulating Media Strategies: Defining the Target Group, Market Prioritization, Media Weights, Media Mix, Media Scheduling.</li> </ul>

SN	Modules/ Units
3	<b>Media Budgeting, Buying &amp; Scheduling</b>
	<p><b>a) Media Budget</b></p> <ul style="list-style-type: none"> <li>• Meaning</li> <li>• Factors to be considered while Framing a Budget: Advertising Task, Competitive Framework, Market Dominance, Market Coverage, Media Cost, Market Task, Pricing ,Frequency of Purchase</li> <li>• Importance of Media Budget.</li> <li>• Methods of Setting Media Budget - Status Quo, Inflation Adjusted, Advertising Sales, Case Rate &amp; Advertising Margin Method, Share of Market, Yardstick Method, Effective Frequency &amp; Reach Method &amp; Margin Analysis ROI Based Approach, Experimental Approach, Break Even Planning.</li> </ul> <p><b>b) Media Buying:</b></p> <ul style="list-style-type: none"> <li>• Meaning, Role of Media Buyer, Objectives of Media Buying,</li> <li>• Buying Process: Buying Brief, Environmental Analysis, Science and Art of Buying, Benchmarking Buying Plan Presentation Deal Management and Post Buy</li> <li>• Buying brief: Concept &amp; Elements of Buying Brief, Art of Media Buying – Negotiation in Media Buying, Plan Presentation and Client Feedback</li> <li>• Criteria in Media Buying</li> </ul> <p><b>c) Media Scheduling</b></p> <ul style="list-style-type: none"> <li>• Meaning, Importance</li> <li>• Factors Affecting Scheduling: Sales Pattern, Purchase Cycle, Product Availability, Competitive Activity, Marketing Task, Budget Constraints, Target Group.</li> <li>• Scheduling Patterns – Continuity, Flighting, Pulsing</li> <li>• Scheduling Strategies for Creating Impact: Road Block , Day or Day part</li> <li>• Emphasis, Multiple Spotting, Teasers</li> </ul>

SN	Modules/ Units
4	Developments in International Marketing
	<p><b>a) Media Measurement:</b></p> <ul style="list-style-type: none"> <li>• <b>Basic Metrics:</b> Reach, Cumulative/Frequency Reach, Discrete &amp; Cumulative distribution, Average Opportunity to See (AOTS), Effective frequency/Reach</li> <li>• <b>Television Metrics:</b> Dairy v/s Peoplemeter,TRP,/TVR, Program Reach &amp; Time Spent, Stickiness Index, Ad Viewership</li> <li>• <b>Radio Metrics:</b> Arbitron Radio Rating</li> <li>• <b>Print Metrics:</b> Circulation, Average Issue Readership (AIR), Total or Claimed Reader, Sole or Solus reader.</li> <li>• <b>OOH Metrics:</b> Traffic Audit Bureau (TAB)</li> </ul> <p><b>b) Benchmarking Metrics:</b></p> <ul style="list-style-type: none"> <li>• Share, Profile, and Selectivity Index</li> </ul> <p><b>c) Plan Metrics:</b></p> <ul style="list-style-type: none"> <li>• Gross Rating Points (GRP), Gross Impressions (GI), Share of Voice (SOV).</li> </ul> <p><b>d) Evaluating Media Buys</b></p> <ul style="list-style-type: none"> <li>• <b>Evaluating Television Media Buying:</b> Dysfunctional Card Rate, Secondary and Effective Rate, Deal Composition, Cost Per Rating Point(CPRP), Reach Delivered by the Buy, Visibility Spots, Bonus Percentage, Upgrades and Spot Fixing, Sponsorships</li> <li>• <b>Evaluating Print Media Buying:</b> Discount on Rate Card, Negotiated Rate, Cost Per Thousand (CPT), Market Share Incentives, Readership v/s Circulation Track, Growth Incentives, Combination Rate Incentives, Full Page Discounts and Size Upgrades, Discount for Colour Ads, Date Flexibility Incentives, Positioning, Innovations.</li> <li>• <b>Evaluating Other Media Buys:</b> Radio Buys, Outdoor Buys, Cinema Buys, Internet Buys, and Mobile Buys</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group B: Marketing Electives***

**5. Sports Marketing**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Sports Marketing: Introduction, Environment & Research	15
2	The Sports Product, Pricing Strategies & Sponsorship	15
3	Promotion & Distribution Strategies in Sports Marketing	15
4	Legal aspects & Marketing of Major Sport Events	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To equip the learner with an understanding of the business of sports marketing
02	To help the learner understand environmental factors influencing sports marketing
03	To help the learner understand components of marketing mix in the context of sports marketing
04	To understand legal aspects in sports marketing & franchising agreements

Sr. No.	Modules / Units
<b>1</b>	<b>Sports Marketing: Introduction, Environment &amp; Research</b>
	Introduction to sports marketing: Sports marketing definition & characteristics, marketing myopia in sports, distinctive features of sports marketing, Model of sports Industry, Implementation of sports marketing programme Environment & Research in Sports Marketing: Environmental factors, individual factors, decision making for sports involvement, role of research in sports marketing: types of primary market research, common problems in sports marketing research
<b>2</b>	<b>The sports Product, Pricing Strategies &amp; Sponsorship</b>
	The sports products: Core & extensions, key issues in sports products strategy, managing sports brands, brand equity: benefits & development, Sales: Definition, sales approaches used in sports, selling sports to the community Pricing strategies: The basics of pricing, core issues, factors affecting pricing Sponsorship: Definition, growth of sponsorship, evaluating and ensuring sponsorship effectiveness, selling the sponsorship, ethical issues in selling the sponsorships
<b>3</b>	<b>Promotion &amp; Distribution Strategies in Sports Marketing</b>
	Promotional strategies: Promotional concepts & practice, components of promotion mix for sports marketing: Sales promotion, sponsorship, public relation, digital marketing & advertising. Media options in sports marketing, Distribution strategies: Placing core products & their extensions, the facility: marketing channels, the product-place matrix
<b>4</b>	<b>Legal Aspects &amp; Marketing of major Sport Events</b>
	Cross impact among the 5Ps of sports marketing mix Legal aspects of sports marketing: Endorsement agreement, Player agreement, Franchise agreement & Sponsorship agreement Marketing of major sport events: Olympic Games, Commonwealth Games, ICC Cricket World Cup, Indian Premier League, FIFA Football World Cup, Wimbledon tennis tournament



**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019**

**Elective Courses (EC)  
Group B: Marketing Electives**

**6. Marketing of Non-Profit Organisation**

**Modules at a Glance**

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Introduction to Non-profit Organization	15
2	Segmenting Targeting Positioning, Product mix & Pricing mix in Non-profit organizations	15
3	Promotion mix, Place mix of non-profit organizations & advocacy of non-profit organizations	15
4	Corporate Social Responsibility, innovations & Ethics in non-profit organizations	15
<b>Total</b>		<b>60</b>

**Objectives**

<b>SN</b>	<b>Objectives</b>
01	This course introduces students to the challenges of marketing in the non-profit sector.
02	To understand the role and application of marketing to promote social change and to achieve social goals for non-profits organizations including social and cause related marketing, fundraising
03	To apply marketing in a diverse range of non-profit environments including charities, social programs and ideas, health, education, arts, as well as goods and services
04	To understand the advocacy v/s lobbying and the concept of CSR and the policy framework of CSR under the Companies Act of 2013

Sr. No.	Modules / Units
1	<b>Introduction to Non-profit Organization</b>
	<p>a) <b>Non-profit organization:</b> Meaning of Non-Profit Organization, Features of non-profit organization, Characteristics of Non Profit marketing, Stakeholders in non-profit organization, Types of non-profit organization: Charities, newly emerging social enterprise sector, public sector, political parties and campaign organizations, classification of non-profit organizations, Social need: concept, social need as a basis for developing sustainable business model for a non-profit organization.</p> <p>b) <b>Fundraising:</b> meaning, common techniques to solicit funds, fund raising loyalty ladder, marketing and communication for fundraising</p>
2	<b>Segmenting Targeting Positioning, Product mix &amp; Pricing mix in Non-profit organizations</b>
	<p>a) <b>Segmentation, Targeting &amp; Positioning of non-profit organizations:</b> Strategic Marketing for Non-Profit Organization, Steps in Strategic Marketing of non-profit organization, Market Segmentation, Targeting &amp; Positioning in non-profit organization</p> <p>b) <b>Product mix &amp; Pricing mix in non-profit organization:</b> Budgeting, cost effective marketing mix, Cost Management, Product or offer in non-profit organization, level of offer in non-profit organization, Pricing Objectives in non-profit organizations, Pricing Strategies in non-profit organizations</p>
3	<b>Promotion mix, Place mix of non-profit organizations &amp; advocacy of non-profit organizations</b>
	<p>a) <b>Promotion Mix:</b> Promotion of non-profit Organizations: Marketing Communication Strategies, Integrated Marketing Communication in nonprofit organizations, Image &amp; reputation, Marketing Communication process, Marketing communication process, Role of Audience, message and vehicle in non-profit organization communication. Significance of place in non-profit organizations, Challenges for non-profit organizations in rural areas.</p> <p>b) <b>Advocacy &amp; Fund Raising in non-profit organization:</b> Meaning, steps in building support for advocacy, advocacy tactics: lobbying, Coalition Building, outreach to media, educating policy makers on issues, educating public on policy issue, building relationship with policy maker. Distinctive characteristics of advocacy groups, Steps in crafting an advocacy plan, steps in engaging policy makers for lobbying, advocacy v/s lobbying, Evaluating advocacy.</p> <p><b>Fund Raising:</b> meaning, Principles of fundraising, Fund raising cycle, The fund raising pyramid and donor life cycle.</p>
4	<b>Corporate Social Responsibility, innovations &amp; Ethics in non-profit organizations</b>
	<p>a) <b>Corporate social responsibility:</b> CSR, Importance of CSR, history and evolution of CSR, Policy framework for CSR in India, Section 135 of Companies Act 2013, Role of CSR committee on Boards</p> <p>Code of Ethics in non-profit organization, hierarchy of ethical values in non-profit organization, careers in CSR.</p> <p>b) <b>Trends and Innovations:</b> Current trends, innovations and opportunities in CSR, Influence of non-profit organizations and their impact on corporate CSR, Challenges faced by non-profit organizations in India.</p> <p>c) <b>Non-Governmental Organization (NGO):</b> Meaning of Non-Government Organization (NGO), Difference between Voluntary Organization &amp; NGO, Steps of Voluntarism, Types of NGO: advocacy of chosen cause, Small or Grassroot NGO, Mother NGO, National NGO, corporate NGO, Global NGO's</p>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**1. HRM in Global Perspective**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	International HRM – An Overview	15
2	Global HRM Functions	15
3	Managing Expatriation and Repatriation	15
4	International HRM Trends and Challenges	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To introduce the students to the study and practice of IHRM
2	To understand the concepts, theoretical framework and issues of HRM in Global Perspective
3	To get insights of the concepts of Expatriates and Repatriates
4	To find out the impact of cross culture on Human Resource Management
5	To provide information about Global Workforce Management
6	To study International HRM Trends and Challenges

SN	Modules/ Units
1	<b>International HRM – An Overview</b>
	<p><b>a) International HRM – An Overview:</b></p> <ul style="list-style-type: none"> <li>• International HRM- Meaning and Features, Objectives, Evolution of IHRM, Reasons for Emergency of IHRM, Significance of IHRM in International Business, Scope/Functions</li> <li>• Difference between International HRM and Domestic HRM</li> <li>• Approaches to IHRM- Ethnocentric, Polycentric, Geocentric and Regiocentric</li> <li>• Limitations to IHRM</li> <li>• Qualities of Global Managers</li> <li>• Organizational Dynamics and IHRM</li> <li>• Components of IHRM- Cross Cultural Management and Comparative HRM</li> <li>• Cross Cultural Management- Meaning, Features, Convergence of Cultures, Role of IHRM in Cross Culture Management, Problems of Cross Cultural Issues in Organizations, Importance of Cultural Sensitivity to International Managers</li> <li>• Comparative HRM- Meaning, Importance, Difference between IHRM and Comparative HRM</li> <li>• Managing Diversity in Workforce</li> <li>• Dealing with Cultural Shock</li> </ul>
2	<b>Global HRM Functions</b>
	<p><b>a) Global HRM Functions:</b></p> <ul style="list-style-type: none"> <li>• International Recruitment and Selection- Meaning- Sources of International Labour Market, Global Staffing, Selection Criteria, Managing Global Diverse Workforce</li> <li>• International Compensation – Meaning, Objectives, Components of International Compensation Program, Approaches to International Compensation</li> <li>• HRM Perspectives in Training and Development - Meaning, Advantages, Cross Cultural Training, Issues in Cross Cultural Training</li> <li>• International Performance Management – Meaning, Factors Influencing Performance, Criterion used for Performance Appraisal of International Employees, Problems Faced in International Performance Management</li> <li>• Motivation and Reward System- Meaning, Benchmarking Global Practices</li> <li>• International Industrial Relations – Meaning, Key Issues in International Industrial Relations, Trade Union and International IR</li> </ul>

SN	Modules/ Units
3	<b>Managing Expatriation and Repatriation</b>
	<p><b>a) Managing Expatriation and Repatriation</b></p> <ul style="list-style-type: none"> <li>• Concepts of PCNs (Parent-Country Nationals), TCNs(Third-Country Nationals) and HCNs(Host-Country Nationals)</li> <li>• Expatriation- Meaning, Reasons for Expatriation, Factors in Selection of Expatriates, Advantages of Using Expatriates, Limitations of using Expatriates, Role of Family, the Role of Non-expatriates, Reasons for Expatriate Failure, Women and Expatriation, Requirements/Characteristics of Effective Expatriate Managers</li> <li>• Repatriation- Meaning, Repatriation Process, Factors affecting Repatriation Process, Role of Repatriate, Challenges faced by Repatriates</li> </ul>
4	<b>International HRM Trends and Challenges</b>
	<p><b>a) International HRM Trends and Challenges:</b></p> <ul style="list-style-type: none"> <li>• Emerging Trends in IHRM</li> <li>• Off Shoring – Meaning, Importance, Off Shoring and HRM in India</li> <li>• International Business Ethics and IHRM – Meaning of Business Ethics, Global Values, International Corporate Code of Conduct, Criminalization of Bribery, Operationalizing Corporate Ethics of HR in Overall Corporate Ethics Programme</li> <li>• Managing International Projects and Teams- Meaning, How Projects are Managed across the World and Challenges in Managing International Projects across the World</li> <li>• HR in MNCs – Industrial Relations in MNCs</li> <li>• Role of Technology on IHRM</li> <li>• IHRM and Virtual Organization- Meaning and Features of Virtual Organization, Difference between Virtual Organization and Traditional Organization, Managing HR in Virtual Organization</li> <li>• Growth in Strategic Alliances and Cross Border Mergers and Acquisitions- Impact on IHRM</li> <li>• Knowledge Management and IHRM</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**2. Organisational Development**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	International HRM – An Overview	15
2	Global HRM Functions	15
3	Managing Expatriation and Repatriation	15
4	International HRM Trends and Challenges	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand the concept of Organisational Development and its Relevance in the organisation
2	To Study the Issues and Challenges of OD while undergoing Changes
3	To get an Understanding of Phases of OD Programme
4	To Study the OD Intervention to meet the Challenges faced in the Organisation
5	To get an Insight into Ethical Issues in OD

SN	Modules/ Units
1	<b>Organisational Development – An Overview</b>
	<b>a) Organisational Development – An Overview:</b> <ul style="list-style-type: none"> <li>• Organisational Development – Meaning, Features, Evolution, Components, Objectives, Principles, Process, Importance</li> <li>• Relevance of Organisational Development for Managers, OD- HRD Interface, Participation of Top Management in OD</li> <li>• OD Practitioner – Meaning, Role of OD Practitioner, Competencies of an OD Practitioner</li> <li>• Emerging Trends in OD</li> <li>• OD in Global Setting</li> </ul>
2	<b>Organisational Diagnosis, Renewal and Change</b>
	<b>a) Organisational Diagnosis, Renewal and Change:</b> <ul style="list-style-type: none"> <li>• Organisational Diagnosis - Meaning, Need, Phases, Levels of Organisational Diagnosis, Techniques of Organisational Diagnosis, Tools used in Organisational Diagnosis</li> <li>• Organizational Renewal, Re-energising, OD and Business Process Re-Engineering (BPR), OD and Leadership Development</li> <li>• Organisational Change- Meaning, Organisational Life Cycle, Planned Change, Organizational Growth and its Implication for Change</li> <li>• Change Agents- Meaning, Features, Types, Role, Skills required</li> </ul>
3	<b>OD Interventions</b>
	<b>a) Managing Expatriation and Repatriation</b> <ul style="list-style-type: none"> <li>• OD Interventions- Meaning, Features, Factors Affecting Success of Interventions, Steps in OD Interventions</li> <li>• Types of Interventions- Human Resource Intervention, Structural Intervention, Strategic Interventions, Third Party Peace Making Intervention</li> <li>• Techniques of OD Intervention : <ul style="list-style-type: none"> <li>▪ Traditional: Sensitive Training, Grid Training, Survey Feedback.</li> <li>▪ Modern : Process Consultation, Third Party, Team Building, Transactional Analysis</li> </ul> </li> <li>• Evaluation of OD Interventions : Process, Types, Methods, Importance</li> </ul>

SN	Modules/ Units
4	OD Effectiveness
	<p><b>a) OD Effectiveness:</b></p> <ul style="list-style-type: none"> <li>• Issues Faced in OD- Issues Related to Client Relationship, Power-Individual skills and Attributes as a Source of Power, Power and Influence Tactics, Politics and OD</li> <li>• Values in OD – Meaning, Professional Values, Value Conflict and Dilemma</li> <li>• Ethics in OD – Meaning, Factors Influencing Ethical Judgement, Ethical Guidelines for OD Professionals</li> <li>• Organisational Effectiveness- Meaning , Effectiveness v/s Efficiency, Approaches of Organisational Effectiveness : Goal Approach, System Resource Approach, Strategic Constituency Approach, Internal Process Approach; Parameters for Judging Organisational Effectiveness, Ways to Enhance Organisational Effectiveness</li> </ul>



***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**3. HRM in Service Sector Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Service Sector Management- An Overview	15
2	Managing Human Element in Service Sector	15
3	Issues and Challenges of HR in Service Sector	15
4	HRP Evaluation, Attrition, Retention & Globalization	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand the concept and growing importance of HRM in service sector
2	To understand how to manage human resources in service sector
3	To understand the significance of human element in creating customer satisfaction through service quality
4	To understand the Issues and Challenges of HR in various service sectors

SN	Modules/ Units
1	<b>Service Sector Management- An Overview</b>
	<p><b>a) Service Sector Management- An Overview:</b></p> <ul style="list-style-type: none"> <li>• <b>Services</b> - Meaning, Features, Classification of Services: End User, Degree of Tangibility, People Based Services, Expertise Required, Orientation Towards Profit, By Location</li> <li>• <b>Service Sector Management</b> – Meaning, Significance of Service Sector, Reasons for Growth in Service Sector</li> <li>• <b>Service Organization</b> - Importance of Layout and Design of Service Organization, Servicescape</li> <li>• <b>Service Culture in Organization</b> – Meaning, Developing Service Culture in Organization</li> <li>• <b>Relationship Marketing</b> – Meaning, Need and Importance in Service Sector Organizations, Six Market Model</li> <li>• Role of Service Employee</li> <li>• <b>Role of Customers in Service Process</b>– Customers as Productive Resources, Customers as Contributors to Service Quality, Customers as Competitors</li> <li>• <b>Service Encounter and Moment of Truth</b> –Meaning, Nature, Elements of Service Encounter</li> </ul>
2	<b>Managing Human Element in Service Sector</b>
	<p><b>a) Managing Human Element in Service Sector:</b></p> <ul style="list-style-type: none"> <li>• <b>Human Element in Service Sector</b> – Introduction, Role and Significance</li> <li>• The Services Triangle</li> <li>• <b>Front Line Employees /Boundary Spanners</b>– Meaning, Issues Faced by Front Line Employees: Person/ Role Conflicts, Organization/ Client Conflict, Interclient Conflict</li> <li>• <b>Emotional Labour</b> – Meaning, Strategies for Managing Emotional Labour</li> <li>• <b>Recruitment in Service Sector</b>– Recruiting Right People, Recruitment Procedures and Criteria, Challenges in Recruitment in Service Sector</li> <li>• <b>Selection of Employees in Service Sector</b> – Interviewing Techniques: Abstract Questioning, Situational Vignette, Role Playing</li> <li>• Develop People to Deliver Service Quality</li> <li>• Compensating Employees in Service Sector</li> <li>• Motivating Employees for Services</li> <li>• <b>Empowerment of Service Workers</b> – Meaning, Advantages and Limitations</li> </ul>

SN	Modules/ Units
3	<b>Issues and Challenges of HR in Service Sector</b>
	<p><b>a) Issues and Challenges of HR in Service Sector:</b></p> <ul style="list-style-type: none"> <li>• <b>Quality Issues in Services:</b> Meaning and Dimensions of Service Quality, The Service – Gap Model, Reasons and Strategies to fill the Gaps</li> <li>• <b>Delivering Services through Agents and Brokers</b> - Meaning, Advantages, Challenges, Strategies for Effective Service Delivery through Agents and Brokers</li> <li>• <b>HRM in Public Sector Organizations and Non – Profit Sector in India</b></li> <li>• <b>Issues and Challenges of HR in Specific Services:</b> <ul style="list-style-type: none"> <li>▪ Business and Professional Services: Banking and Insurance, Legal, Accountancy</li> <li>▪ Infrastructure: Roads, Railways, Power</li> <li>▪ Public Services: Police, Defense, Disaster Management</li> <li>▪ Trade Services: Wholesale and Retail, Advertising, Maintenance and Repairs</li> <li>▪ Personnel Services: Education, Health Care, Hotels</li> </ul> </li> <li>• Social and Charitable Services</li> </ul>
4	<b>HRP Evaluation, Attrition, Retention &amp; Globalization</b>
	<p><b>a) HRP Evaluation, Attrition, Retention &amp; Globalization:</b></p> <ul style="list-style-type: none"> <li>• <b>Human Resource Planning Evaluation in Service Sector</b> – Meaning, HRP Evaluation Process, Purpose of HRP Evaluation in Service Sector, Issues Influencing HRP Evaluation in Service Sector</li> <li>• <b>Service Leadership</b> – Meaning, Integrating Marketing Operation and Human Resources, Creating a Leading Service Organization, The Service – Profit Chain Model</li> <li>• <b>Attrition in Service Sector</b> –Meaning, Reasons for Attrition in Service Sector, Cycle of Failure, Cycle of Mediocrity and Cycle of Success</li> <li>• <b>Retaining the Best People in Service Sector</b> – Including Employees in Company's Vision, Treat Employees as Customers, Measure and Reward String Service Performers</li> <li>• <b>Globalization of Services-</b> Meaning, Reasons for Globalization of Services, Impact of Globalization on Indian Service Sector. Organisational Effectiveness, Ways to Enhance Organisational Effectiveness</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)  
Group C: Human Resource Electives***

**4. Workforce Diversity**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Workforce Diversity - An Overview	15
2	Workforce Diversity and HRM Functions	15
3	Strategies to Manage Diversity	15
4	Issues in Managing Diversity and Recent Trends	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To understand the nature of workforce diversity
02	To familiarize the learners with the strategies to deal with work force diversity
03	To understand the impact of technology in managing workforce diversity
04	To be able to interlink between workforce diversity and HRM functions

Sr. No.	Modules / Units
<b>1</b>	<b>Workforce Diversity - An Overview</b>
	<ul style="list-style-type: none"> <li>• Meaning of Workforce</li> <li>• Workforce Diversity - Meaning, Features and Significance</li> <li>• Dimensions of Workforce Diversity</li> <li>• Advantages and Limitations of having a diverse workforce</li> <li>• Positive and Negative effects of workforce diversity in workplace</li> </ul>
<b>2</b>	<b>Workforce Diversity and HRM Functions</b>
	<ul style="list-style-type: none"> <li>• Steps to Recruiting and Retaining a Diverse Workforce</li> <li>• Workforce Diversity and HRM Functions – Diversity and Recruitment, Diversity and Supervision, Diversity and Training, Diversity and Compensation, Diversity and Performance Management, Diversity and Work life Balance</li> <li>• Role of Recruiter in Hiring Diversified Workforce</li> <li>• Workforce Diversity – Key to Organizational Performance</li> <li>• Workforce Diversity as a Determinant of Sustainable Competitive Advantage</li> </ul>
<b>3</b>	<b>Strategies to Manage Diversity</b>
	<ul style="list-style-type: none"> <li>• Organizational Strategies for Managing Workforce Diversity –Workplace Inclusion Strategies through Corporate Leadership, Diversity Training and Mentoring</li> <li>• Diversity Management Programmes - Concept</li> <li>• Corporate Culture and Diversity at workplace</li> <li>• Techniques of Managing Work Force Diversity</li> <li>• Approaches to Diversity Management System</li> </ul>
<b>4</b>	<b>Issues in Managing Diversity and Recent Trends</b>
	<ul style="list-style-type: none"> <li>• Best Practices in Achieving Workforce Diversity</li> <li>• Diversity and Multi-culturism</li> <li>• Global workforce diversity management</li> <li>• Recent Trends of Diversity</li> <li>• Role of Technology in Handling Workforce Diversity</li> <li>• Workforce Diversity Management for Creativity and Innovation</li> <li>• Ethical and Legal Issues in Managing Diversity</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**5. Human Resource Accounting & Auditing**

***Modules at a Glance***

<b>Sr. No.</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Human Resource Accounting: An Overview	15
2	Methods and Human Resource Accounting Practices in India	15
3	Human Resource Audit: An Overview	15
4	HR Audit for Legal Compliance and Safe Business Practices	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
01	To understand the value of human resource in organizations
02	To understand the importance of Human Resource Accounting at National and International level
03	To familiarize with the Human Resource Accounting Practices in India
04	To familiarize the learners with the process and approaches of Human Resources Accounting and Audit
05	To understand the significance of Human Resource Auditing as a Tool of Human Resource Valuation

Sr. No.	Modules / Units
<b>1</b>	<b>Human Resource Accounting: An Overview</b>
	<ul style="list-style-type: none"> <li>• Human Resource Accounting – Meaning, Need and Objectives of HR Accounting</li> <li>• Historical Development of Human Resource Accounting,</li> <li>• Cost of Human Resource - Acquisition Cost, Training and Development Cost and additional Cost</li> <li>• Benefits and Limitations of Human Resource Accounting</li> <li>• Reporting of Human Resource Accounting at National Levels</li> <li>• Disclosures at International Level</li> </ul>
<b>2</b>	<b>Methods and Human Resource Accounting Practices in India</b>
	<ul style="list-style-type: none"> <li>• <b>Methods of Human Resource Accounting:</b> <ol style="list-style-type: none"> <li><b>1. Cost of Production Approach - Concept</b> <ol style="list-style-type: none"> <li>i. Historical Cost Model – Meaning, Advantages and Limitations</li> <li>ii. Replacement Cost Model – Meaning, Advantages and Limitations</li> <li>iii. Opportunity Cost - – Meaning, Advantages and Limitations</li> </ol> </li> <li><b>2. Capitalized Earnings Approach - Concept</b> <ol style="list-style-type: none"> <li>i. Economic Value Model - Meaning, Advantages and Limitations</li> <li>ii. Capitalization of Salary - Meaning, Advantages and Limitations</li> </ol> </li> </ol> </li> <li>• <b>Statutory Provisions governing HR accounts</b></li> <li>• <b>Human Resource Accounting Practices in India</b></li> </ul>
<b>3</b>	<b>Human Resource Audit: An Overview</b>
	<ul style="list-style-type: none"> <li>• Human Resource Audit - Meaning, Features, Objectives of HR Audit</li> <li>• Benefits and limitations of HR Audit</li> <li>• Need and Significance of HR Audit</li> <li>• Process of HR Audit</li> <li>• Approaches of HR Audit</li> <li>• Principles of Effective HR Auditing</li> <li>• Role of HR Auditor</li> <li>• Methods of conducting HR Audit – Interview, Workshop, Observation, Questionnaire.</li> <li>• Components of HR Audit</li> <li>• HR Audit and Workforce Issues : Workforce Communication and Employee Relations, Performance Management, Compensation System, Teambuilding System</li> </ul>
<b>4</b>	<b>HR Audit for Legal Compliance and Safe Business Practices</b>
	<ul style="list-style-type: none"> <li>• Areas covered by HR Audit - Pre-employment Requirements, Hiring Process, New-hire Orientation Process, Workplace Policies and Practices</li> <li>• HR Audit as Intervention - Introduction, Effectiveness of Human Resource Development Audit as an Intervention</li> <li>• Human Resource Audit and Business Linkages</li> <li>• Human Resource Auditing as a Tool of Human Resource Valuation: Introduction, Rationale of Human Resource Valuation and Auditing, Valuation of Human Resources, Issues in Human Capital Measurement and Reporting.</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Elective Courses (EC)***

***Group C: Human Resource Electives***

**6. Indian Ethos in Management**

***Modules at a Glance***

<b>SN</b>	<b>Modules</b>	<b>No. of Lectures</b>
1	Indian Ethos – An Overview	15
2	Work Ethos and Values	15
3	Stress Management	15
4	Indian Systems of Learning	15
<b>Total</b>		<b>60</b>

***Objectives***

<b>SN</b>	<b>Objectives</b>
1	To understand the concept of Indian Ethos in Management
2	To link the Traditional Management System to Modern Management System
3	To understand the Techniques of Stress Management
4	To understand the Evolution of Learning Systems in India



SN	Modules/ Units
1	<b>Indian Ethos – An Overview</b>
	<p><b>a) Indian Ethos</b></p> <ul style="list-style-type: none"> <li>Meaning, Features, Need, History, Relevance, Principles Practised by Indian Companies, Requisites, Elements, Role of Indian Ethos in Managerial Practices</li> </ul> <p><b>b) Management Lessons from Scriptures:</b></p> <ul style="list-style-type: none"> <li>Management Lessons from Vedas, Management Lessons from Mahabharata, Management Lessons from Bible, Management Lessons from Quran, Management Lessons from Kautilya's Arthashastra</li> </ul> <p>Indian Heritage in Business, Management, Production and Consumption. Ethics v/s Ethos Indian Management v/s Western Management</p>
2	<b>Work Ethos and Values</b>
	<p><b>a) Work Ethos:</b></p> <ul style="list-style-type: none"> <li>Meaning, Levels, Dimensions, Steps, Factors Responsible for Poor Work Ethos</li> </ul> <p><b>b) Values:</b></p> <ul style="list-style-type: none"> <li>Meaning, Features, Values for Indian Managers, Relevance of Value Based Management in Global Change, Impact of Values on Stakeholders: Employees, Customers, Government, Competitors and Society.</li> <li>Values for Managers, Trans-Cultural Human Values in Management and Management Education, Secular v/s Spiritual Values in Management, Importance of Value System in Work Culture</li> </ul>
3	<b>Stress Management</b>
	<p><b>a) Stress Management:</b></p> <ul style="list-style-type: none"> <li>Meaning, Types of Stress at Work, Causes of Stress, Consequences of Stress</li> </ul> <p><b>b) Stress Management Techniques:</b></p> <ul style="list-style-type: none"> <li>Meditation : Meaning, Techniques, Advantages, Mental Health and its Importance in Management, Brain Storming, Brain Stilling, Yoga: Meaning, Significance</li> </ul> <p><b>c) Leadership:</b></p> <ul style="list-style-type: none"> <li>Meaning, Contemporary Approaches to Leadership, Joint Hindu Family Business – Leadership Qualities of Karta</li> </ul> <p><b>d) Motivation:</b></p> <ul style="list-style-type: none"> <li>Meaning, Indian Approach to Motivation, Techniques</li> </ul>

SN	Modules/ Units
4	<b>Indian Systems of Learning</b>
	<p><b>a) Learning: Meaning, Mechanisms</b></p> <ul style="list-style-type: none"> <li>• Gurukul System of Learning : Meaning, Features, Advantages, Disadvantages</li> <li>• Modern System of Learning: Meanings, Features, Advantages, Disadvantages</li> <li>• Karma: Meaning, Importance of Karma to Managers, Nishkama Karma</li> <li>• Laws of Karma: The Great Law, Law of Creation, Law of Humility, Law of Growth, Law of Responsibility, Law of Connection</li> <li>• Corporate Karma: Meaning, Methodology, Guidelines for good Corporate Karma</li> <li>• Self-Management: Personal growth and Lessons from Ancient Indian Education System</li> <li>• Personality Development: Meaning, Determinants, Indian Ethos and Personality Development</li> </ul>

***Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019***

***Core Course (CC)***

**5. Operations Research**

***Modules at a Glance***

SN	Modules	No. of Lectures
1	Introduction to Operations Research and Linear Programming	15
2	Assignment and Transportation Models	15
3	Network Analysis	15
4	Job Sequencing and Theory of Games	15
Total		60

***Objectives***

SN	Objectives
1	To help students to understand operations research methodologies
2	To help students to solve various problems practically
3	To make students proficient in case analysis and interpretation

SN	Modules/ Units
1	<b>Introduction to Operations Research and Linear Programming</b> <p><b>a) Introduction To Operations Research</b></p> <ul style="list-style-type: none"> <li>Operations Research - Definition, Characteristics of OR, OR Techniques, Areas of Application, Limitations of OR.</li> </ul> <p><b>b) Linear Programming Problems: Introduction and Formulation</b></p> <ul style="list-style-type: none"> <li>Introduction to Linear Programming</li> <li>Applications of LP</li> <li>Components of LP</li> <li>Requirements for Formulation of LP Problem</li> <li>Assumptions Underlying Linear Programming</li> <li>Steps in Solving LP Problems</li> <li>LPP Formulation (Decision Variables, Objective Function, Constraints, Non Negativity Constraints)</li> </ul> <p><b>c) Linear Programming Problems: Graphical Method</b></p> <ul style="list-style-type: none"> <li>Maximization &amp; Minimization Type Problems. (Max. Z &amp; Min. Z)</li> <li>Two Decision Variables and Maximum Three Constraints Problem</li> <li>Constraints can be “less than or equal to”, “greater than or equal to” or a combination of both the types i.e. mixed constraints.</li> <li>Concepts: Feasible Region of Solution, Unbounded Solution, Redundant Constraint, Infeasible Solution, Alternative Optima.</li> </ul> <p><b>d) Linear Programming Problems: Simplex Method</b></p> <ul style="list-style-type: none"> <li>Only Maximization Type Problems. (<u>Only Max. Z</u>). No Minimization problems. (No Min. Z) Numericals on Degeneracy in Maximization Simplex Problems.</li> <li>Two or Three Decision Variables and Maximum Three Constraints Problem. (Up to Maximum Two Iterations)</li> <li>All Constraints to be “less than or equal to” Constraints. (“Greater than or Equal to” Constraints not included.)</li> <li>Concepts : Slack Variables, Surplus Variables, Artificial Variables, Duality, Product Mix and Profit, Feasible and Infeasible Solution, Unique or Alternate Optimal Solution, Degeneracy, Non Degenerate, Shadow Prices of Resources, Scarce and Abundant Resources, Utilized and Unutilized Capacity of Resources, Percentage Utilization of Resources, Decision for Introduction of a New Product.</li> </ul> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>Surplus Variable, Artificial Variable and Duality to be covered only at <u>Conceptual</u> level for Theory Questions only and not included in Numerical.</li> <li>Sensitivity Analysis including Profit Range and Capacity Range is not included.</li> </ol>

SN	Modules/ Units
2	<b>Assignment and Transportation Models</b> <p><b>a) Assignment Problem – Hungarian Method</b></p> <ul style="list-style-type: none"> <li>• Maximization &amp; Minimization Type Problems.</li> <li>• Balanced and Unbalanced Problems.</li> <li>• Prohibited Assignment Problems, Unique or Multiple Optimal Solutions.</li> <li>• Simple Formulation of Assignment Problems.</li> <li>• Maximum 5 x 5 Matrix. Up to Maximum Two Iterations after Row and Column Minimization.</li> </ul> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. Travelling Salesman Assignment Problem is not included.</li> </ol> <p><b>b) Transportation Problems</b></p> <ul style="list-style-type: none"> <li>• Maximization &amp; Minimization Type Problems.</li> <li>• Balanced and Unbalanced problems.</li> <li>• Prohibited Transportation Problems, Unique or Multiple Optimal Solutions.</li> <li>• Simple Formulation of Transportation Problems.</li> <li>• <u>Initial Feasible Solution</u> (IFS) by: <ol style="list-style-type: none"> <li>a. North West Corner Rule (NWCR)</li> <li>b. Least Cost Method (LCM)</li> <li>c. Vogel's Approximation Method (VAM)</li> </ol> </li> <li>• Maximum 5 x 5 Transportation Matrix.</li> <li>• Finding Optimal Solution by <u>Modified Distribution (MODI) Method</u>. (u, v and <math>\Delta</math>)</li> <li>• <u>Maximum Two Iterations</u> (i.e. Maximum Two Loops) after IFS.</li> </ul> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. Production Scheduling Problem is not included.</li> <li>2. Time Minimization Problem is not included.</li> <li>3. Degeneracy Concept to be covered only at Conceptual Level. Not to be included in Numerical.</li> </ol>

SN	Modules/ Units
3	<b>Network Analysis</b>
	<p><b>a) Critical Path Method (CPM)</b></p> <ul style="list-style-type: none"> <li>• Concepts: Activity, Event, Network Diagram, Merge Event, Burst Event, Concurrent and Burst Activity,</li> <li>• Construction of a Network Diagram. Node Relationship and Precedence Relationship.</li> <li>• Principles of Constructing Network Diagram.</li> <li>• Use of Dummy Activity</li> <li>• Numerical Consisting of Maximum Ten ( 10) Activities.</li> <li>• Critical Path, Sub-critical Path, Critical and Non-critical Activities, Project Completion Time.</li> <li>• Forward Pass and Backward Pass Methods.</li> <li>• Calculation of EST, EFT, LST, LFT, Head Event Slack, Tail Event Slack, Total Float, Free Float, Independent Float and Interfering Float</li> </ul> <p><b>b) Project Crashing</b></p> <ul style="list-style-type: none"> <li>• Meaning of Project Crashing.</li> <li>• Concepts: Normal Time, Normal Cost, Crash Time, Crash Cost of Activities. Cost Slope of an Activity.</li> <li>• Costs involved in Project Crashing: Numericals with Direct, Indirect, Penalty, crash cost and Total Costs.</li> <li>• Time – Cost Trade off in Project Crashing.</li> <li>• Optimal (Minimum) Project Cost and Optimal Project Completion Time.</li> <li>• Process of Project Crashing.</li> <li>• Numerical Consisting of Maximum Ten (10) Activities.</li> <li>• Numerical based on Maximum Four (04) Iterations of Crashing</li> </ul> <p><b>c) Program Evaluation and Review Technique (PERT)</b></p> <ul style="list-style-type: none"> <li>• Three Time Estimates of PERT: Optimistic Time (a), Most Likely Time (m) and Pessimistic Time (b).</li> <li>• Expected Time (te) of an Activity Using Three Time Estimates.</li> <li>• Difference between CPM and PERT.</li> <li>• Numerical Consisting of Maximum Ten (10) Activities.</li> <li>• Construction of PERT Network using tevalues of all Activities.</li> <li>• Mean (Expected) Project Completion Time.</li> <li>• Standard Deviation and Variance of Activities.</li> <li>• Project Variance and Project Standard Deviation.</li> <li>• 'Prob. Z' Formula.</li> <li>• Standard Normal Probability Table. Calculation of Probability from the Probability Table using 'Z' Value and Simple Questions related to PERT Technique.</li> <li>• Meaning, Objectives, Importance, Scope, RORO/LASH</li> </ul>

SN	Modules/ Units
4	<b>Job Sequencing and Theory of Games</b>
	<p><b>a) Job Sequencing Problem</b></p> <ul style="list-style-type: none"> <li>• Processing Maximum 9 Jobs through Two Machines only.</li> <li>• Processing Maximum 6 Jobs through Three Machines only.</li> <li>• Calculations of Idle Time, Elapsed Time etc.</li> </ul> <p><b>b) Theory of Games</b></p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Terminology of Game Theory: Players, Strategies, Play, Payoff, Payoff matrix, Maximin, Maximax, Saddle Point.</li> <li>• Types of Games.</li> <li>• Numericals based on: <ul style="list-style-type: none"> <li>▪ Two Person Zero Sum Games including strictly determinable and Fair Game <ul style="list-style-type: none"> <li>- Pure Strategy Games (Saddle Point available). Principles of Dominance method.</li> </ul> </li> </ul> </li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019**

**Reference Books**

<b>Reference Books</b>
<b>International Finance</b>
<ul style="list-style-type: none"> <li>• P G Apte, <i>International Financial Management</i>, 5th Edition, The McGraw Hill</li> <li>• Cheol . S. Eun &amp; Bruce G. Resnick, <i>International Finance Management</i></li> <li>• Maurice D. Levi, <i>International Finance – Special Indian Edition</i></li> <li>• Prakash G. Apte, <i>International Finance – A Business Perspective</i></li> <li>• V A. Aadhani, <i>International Finance</i></li> </ul>
<b>Innovative Financial Services</b>
<ul style="list-style-type: none"> <li>• IM Pandey, <i>Financial Management</i>, Vikas Publishing House Ltd.</li> <li>• Khan M.Y., <i>Financial Services</i>, Mc Graw Hill Education.</li> <li>• Dr.S.Gurusamy, <i>Financial Services</i>, Vijay Nicole Imprints.</li> <li>• <i>Financial Market and Services</i>, E, Gordon and K. Natrajan, Himalaya Publishing House</li> </ul>
<b>Project Management</b>
<ul style="list-style-type: none"> <li>• Harold Kerzer, <i>Project Management – A System Approach to Planning, Scheduling &amp; Controlling</i></li> <li>• Jack.R.Meredith &amp; Samuel.J.Mantel, Jr., <i>Project Management – A Managerial Approach</i></li> <li>• Bhavesh.M.Patel, <i>Project Management – Strategic Financial Planning , Evaluation &amp; Control</i></li> </ul>
<b>Strategic Financial Management</b>
<ul style="list-style-type: none"> <li>• C. Paramasivan&amp; T. Subramanian, <i>Financial Management</i></li> <li>• IM Pandey, <i>Financial Management</i></li> <li>• Ravi Kishor, <i>Financial Management</i></li> <li>• Khan &amp; Jain, <i>Financial Management</i></li> <li>• Van Horne &amp; Wachowiz, <i>Fundamentals of Financial Management</i></li> <li>• Prasanna Chandra, <i>Strategic Financial Management</i></li> </ul>
<b>Financing Rural Development</b>
<ul style="list-style-type: none"> <li>• <i>Rural Banking – IIB Macmillan</i></li> <li>• <i>MicroFinance Perspective and Finance - IIB Macmillan</i></li> <li>• <i>MSME in India – Taxman</i></li> </ul>
<b>Indirect Taxes</b>
<ul style="list-style-type: none"> <li>• <i>GST Bare Act 2017</i></li> <li>• <i>GST Law &amp; Practice - V.S Datey (6th Edition)</i></li> <li>• <i>GST Laws – National Academy of Customs, Indirect Tax</i></li> </ul>
<b>Brand Management</b>
<ul style="list-style-type: none"> <li>• Keller Kevin Lane, <i>Strategic Brand Management: Building, Measuring and Managing Brand Equity</i></li> <li>• Keller Kevin Lane, <i>Strategic Brand Management-2008</i></li> <li>• Elliot, Richard, <i>Strategic Brand Management-2008</i></li> <li>• Kapferer, Jean-Noel, <i>Strategic Brand Management-2000</i></li> <li>• Kishen, Ram, <i>Strategic Brand Management- 2013</i></li> <li>• Keller Kevin Lane, <i>Strategic Brand Management 4e-2015</i></li> </ul>



**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019**

**Reference Books**

<b>Reference Books</b>
<b>Retail Management</b>
<ul style="list-style-type: none"> <li>• Michael Levy &amp; Barton A Weitz, "Retailing Management", Tata Mc Graw Hill</li> <li>• Gibson G. Vedamani, "Retail Management- Functional Principles and Practices", Jaico Publishing House, Mumbai.</li> <li>• Jim, "Retail Strategies-understanding why we shop", Jaico Publishing House, Mumbai.</li> <li>• Dunne Lusch, "Retail Management", South Western Cengage Learning</li> <li>• K.S. Menon, "Store Management", Macmillan India Ltd.,</li> <li>• Keith Lincoln, Lars Thomessen &amp; Anthony Aconis, "Retailization -Brand Survival in the Age of Retailer Power", Kogan Page Ltd.,</li> <li>• Swapna Pradhan, "Retailing Management-Text and Cases", 4th Edn, Tata Mc Graw Hill.</li> <li>• Bajaj, Tulli &amp; Shrivastava, "Retail Management", Oxford University Press</li> <li>• Kishore Biyani, "It Happens in India", &amp; "The Wall Mart Story"</li> <li>• Store Manager, Organiser / Planner- DMS Retail</li> <li>• Dr. RamKishen Y. "International Retail Marketing Strategies", Jaico Publishing House, Mumbai.</li> </ul>
<b>International Marketing</b>
<ul style="list-style-type: none"> <li>• Dr. Shakeel Ahmad Siddiqui, International Marketing, Dreamtech press , Edition 2011</li> <li>• Philip R.Cateora, John L. Graham, Prashanth Salwan, International Marketing , Tata Mcgraw hill Education Private limited, New Delhi, Thirteenth Edition .</li> <li>• RajGopal, International Marketing, Vikas Publishing House Pvt. Ltd., Edition 2007.</li> <li>• Sak Onkvisit, John J.Shaw, International Marketing Analysis and Strategy, Pearson Publication, Third Edition</li> <li>• Francis Cherunilam, International Business, PHI Learning Private Limited New Delhi, Fifth Edition .</li> <li>• Justin Paul and Ramneek Kapoor, International Marketing Text and Cases, Tata Mcgraw Hill Education Private Limited New Delhi, Second Edition.</li> <li>• Rakesh Mohan Joshi, International Marketing, Oxford University Press, Second Edition</li> <li>• Philip R. Cateora, John L. Graham, International Marketing, Tata Mcgraw Hill, Twelfth Edition</li> <li>• Rakesh Mohan Joshi, International Marketing Oxford University Press, First Edition</li> <li>• Michael R. Czinkota, Iikka A Ronkainen, International Marketing, Cengage Learning Edition 2007</li> <li>• Gerald Albaun, Edwin Duerr, Jesper Strandskov, International Marketing and Export Management, Pearson Publication , Fifth Edition</li> </ul>
<b>Media Planning &amp; Management</b>
<ul style="list-style-type: none"> <li>• Arpita Menon , Media Planning and Buying, Tata McGraw Hill Education Private Limited , Second Edition 2010</li> <li>• Jack Z Sissors and Roger B. Baron, Advertising Media Planning, McGraw Hill Education India Pvt. Limited, Seventh Edition.</li> <li>• Larry Percy and Richard Elliott, Strategic Advertising Management , Oxford University Press, Second Edition</li> <li>• Larry d. Kelly and Donald W.Jugeneimer, Advertising Media Planning , PHI learning Private Limited,</li> <li>• Dennis .F.Herrick, Media Management in Age of Giants, Surjeet Publications</li> <li>• Charles Warner and Joseph Buchman, Media selling ,Surjeet Publication,3rd edition</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019**

**Reference Books**

Reference Books
<b>Sports Marketing</b>
<ul style="list-style-type: none"> <li>• Phil Schaaf -Sports Marketing - It's not just a game anymore .</li> <li>• Bernard J. Mullin (Author), Stephen Hardy (Author), William A. and Sutton (Author) - Sport Marketing</li> <li>• Larry DeGaris- Sports Marketing: A Practical Approach February 2015</li> <li>• Matthew D.Shank and Mark R. Lyberger, Sports Marketing: A Strategic Perspective, 5th edition3 October 2014</li> <li>• David Shilbury; Hans Westerbeek; Shayne Quick; Daniel Funk Allen &amp; Unwin, 2009 (3rd edition), Strategic Sport Marketing</li> </ul>
<b>Marketing of Non-Profit Organisation</b>
<ul style="list-style-type: none"> <li>• Philip Kotler &amp; Alan R Andersen, Strategic Marketing for nonprofit organization, 07th Edition, 2008, Prentice Hall.</li> <li>• Banies, Fill &amp; Rosengren (2016), Marketing, Oxford University Press.</li> <li>• TCC Group &amp; The California Endowment Fund, what makes an effective advocacy organization – A framework for determining advocacy capacity, June 2009, TCC Group.</li> <li>• Global CSR Summit, A study by Ernst &amp; Young and PHD Chamber, 2013.</li> <li>• PWC &amp; CII, Handbook on Corporate Social responsibility, 2013, CII Development Initiative Council.</li> <li>• Sahu Pani, Non- Governmental Organisations Development Actors, 2010, Himalaya Publishing, New Delhi</li> <li>• O.P.Goel, Strategic Management &amp; Policy issues of NGO's, 2004, Isha Books, Delhi</li> <li>• B.R., Nanda, NGO Management, 2010, Surendra Publications, New Delhi</li> <li>• Snehlata Chnadra,,Guidelines for NGOs Management in India, 2003, Kanishka Publishers, Distributors, New Delhi</li> <li>• Shilaja Nagendra, Voluntary Organisations &amp; Social Work,2007, Oxford Book Company, Jaipur</li> </ul>
<b>HRM in Global Perspective</b>
<ul style="list-style-type: none"> <li>• Peter J. Dowling, Marion Festing, Allen d. Engle Sr: International Human Resource Management, 5th Edition, Cengage Learning</li> <li>• P. L. Rao: International Human Resource Management, Text and Cases, Excel Books</li> <li>• Peer J. Dowling, Denise E. Welch and Randall S. Schuler (1999): International Human Resource Management, Managing People in a Multinational Context', South Western College Publishing.</li> <li>• Chris Brewster, Paul Sparrow and Guy Vernon, International Human Resource Management, The Universities Press</li> <li>• A.V.Phatak: International Dimensions of Management, Cincinnati, South Western College</li> <li>• Peter J. Dowling, Marion Festing, Allen D. Engle, International Human Resource Management, Thomson Learning.</li> <li>• Dennis R. Briscoe, Randall S. Schuler, International Human Resource Management: Policy and Practice for the Global Enterprise, Psychology Press</li> <li>• S C. Gupta: International Human Resource Management- Text and Cases, MacMillan Publishers</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019**

**Reference Books**

Reference Books
<b>Organisational Development</b>
<ul style="list-style-type: none"> <li>• Dr. Mrs. Anjali Ghanekar, <i>Essentials of Organisation Development</i>, Everest Publishing House</li> <li>• French, W.L. and Bell, C.H., <i>Organisation Development</i>, Prentice-Hall, New Delhi, 1995.</li> <li>• Harvey, D.F. and Brown, D.R., <i>An Experimental Approach to Organization Development</i>, Prentice-Hall, Englewood Cliffs, N.J., 1990</li> <li>• Cummings, T. G. &amp; Worley, C. G. (2009). <i>Organization Development and Change</i> (9th edition). Canada: South-Western Cengage Learning</li> <li>• Thomas G. Cummings and Christopher G. Worley, <i>Organization Development and Change</i>, Thomson South-Western, 8th Edition 2004.</li> <li>• Cummings, T. G., <i>Theory of Organization Development and Change</i>, South Western.</li> <li>• Ramanarayan, S. and Rao, T.V., <i>Organization Development: Accelerating Learning and Transformation</i>, 2nd Edition, Sage India, 2011.</li> <li>• Richard L, <i>Organisation, Theory, Change and Design</i>, India Edition (Cengage Learning)</li> <li>• Garath R Jones, Mary Mathew, <i>Organisation Theory, Design and Change: Sixth Edition</i>, Pearson</li> <li>• Wendell L French, Cecil H Bell, Jr, Veena Vohra, <i>Organisation Development</i>, Sixth Edition, Pearson Education</li> </ul>
<b>HRM in Service Sector Management</b>
<ul style="list-style-type: none"> <li>• C. Bhattacharjee: <i>Service Sector Management, An Indian Perspective</i>, Jaico Publishing House</li> <li>• Christopher Lovelock, Jochen Wirtz, Jayanta Chatterjee: <i>Services Marketing</i>, Pearson</li> <li>• Christopher Lovelock: <i>Services Marketing, People, Technology, Strategy</i>, Pearson Education Asia</li> <li>• James A. Fitzsimmons, Mona J, Fitzsimmons: <i>Service Management, Operations, Strategy, Information Technology</i>, Tata McGraw – Hill</li> <li>• Zeithmal, Bitner, Gremler, Pandit: <i>Services Marketing</i>, Tata McGraw – Hill</li> <li>• Lovelock, Wirtz: <i>Services Marketing</i>, Pearson Education, 5th Edition</li> <li>• K. Rao: <i>Services Marketing</i>, Pearson Education</li> <li>• Ramneek Kapoor, Justin Paul, Biplab Halder: <i>Services Marketing</i></li> </ul>
<b>Workforce Diversity</b>
<ul style="list-style-type: none"> <li>• Dessler Gary, <i>A Framework for Human Resource Management</i>, Pearson Publication, 7th Edition.</li> <li>• <i>Handbook of Research on Workforce Diversity in a Global Society</i>, edited by Scott, Chaunda L.</li> <li>• <i>Diversity in the Workforce: Current Issues and Emerging Trends</i> edited by Marilyn Y. Byrd, Chaunda L. Scott</li> <li>• <i>Managing Diversity: Human Resource Strategies for Transforming the Workplace</i> Ellen Ernst Kossek, Sharon A. Lobel</li> <li>• <i>Workforce Diversity Management: Challenges, Competencies and Strategies</i> - Bahaudin Mujtaba</li> <li>• <i>Handbook of Research on Organizational Culture and Diversity in the Modern</i>, edited by Christiansen, Bryan, Chandan, Harish C</li> </ul>

**Revised Syllabus of Courses of Bachelor of Management Studies  
(BMS) Programme at Semester VI  
with effect from the Academic Year 2018-2019  
Reference Books**

Reference Books
<b>Human Resource Accounting &amp; Auditing</b>
<ul style="list-style-type: none"> <li>• HR Audit : Evaluating the human resource functions for business improvement by T.V. Rao, Response Books</li> <li>• Eric G. Flamholtz, Human Resource Accounting, Springer</li> <li>• Jac Fitzenz, How To Measure Human Resource Management, McGraw Hill</li> <li>• Rakesh Chandra Katiyar, Accounting For Human Resources , UK Publishing</li> <li>• M. Saeed, D.K. Kulshreshtha , Human Resource Accounting, Anmol Publications.</li> <li>• D. Prabakara Rao, Human Resource Accounting, Inter India Publications</li> <li>• Human Resource Management by Gary Dessler, Pearson Publications.</li> <li>• Rao, T.V. 2008. HRD Scorecard 2500, 1/e; New Delhi: Response Books</li> <li>• Udai Pareek and Rao T V (2003). Designing and Managing Human Resource</li> </ul>
<b>Indian Ethos in Management</b>
<ul style="list-style-type: none"> <li>• R Nandagopal, Ajith Sankar RN: Indian Ethics and Values in Management, Tata Mc Graw Hill</li> <li>• Bhatta, S.K., Business Ethics &amp; Managerial Values.</li> <li>• Dave, Nalini V: Vedanta and Mana</li> <li>• Chakraborty, S.K.: Foundation of Managerial Work-Contributions from Indian Thought, Himalaya Publication House, Delhi 1998</li> <li>• Chakraborty, S.K.: Managerial Effectiveness and Quality of Work life – Indian Insights, Tata McGraw Hill Publishing Company, New Delhi – 1987</li> <li>• Chakraborty, S.K.: Management by Values, Oxford University Press 1991.</li> <li>• Nandagopal, Ajith Shankar, Indian Ethos and Values in Management, Tata Mc Graw Hill, 2010</li> <li>• Khandelwal Indian Ethos and Values for Managers, Himalaya Publishing House, 2009</li> <li>• Biswanath Ghosh, Ethics In Management and Indian Ethos, Vikas Publishing House, 2009</li> <li>• Joseph Des Jardins, An Introduction to Business Ethics , Tata Mc Graw Hill, 2009</li> <li>• S K Chakraborty, Management by Values, Oxford University Press, New Delhi, 2008</li> </ul>
<b>Operation Research</b>
<ul style="list-style-type: none"> <li>• Taha H.A., Operations Research - An Introduction, 6th Edition , Hall of India</li> <li>• Kapoor V.K., Operations Research Techniques for Management, 7th Edition, Sultan Chand &amp; Sons</li> <li>• Kantiswarup, Gupta P.K. &amp; Manmohan, Operations Research 9th Edition, Sultan Chand &amp; Sons</li> <li>• Sharma S.D., Operations Research, 8th Edition, Kedarnath, Ramnath &amp; Company</li> <li>• Bronson R, Operations Research, 2nd Edition, Shaum's Outline Series</li> <li>• Vora N.D, Quantitative Techniques in Management, 3rd Edition, Tata McGraw Hill co.</li> <li>• Shreenath L.S, Principles &amp; Application 3rd Ed.,, PERT &amp; CPM, Affiliated East-West Press Pvt. Ltd.</li> <li>• Wagener H.M., Principles of Operations Research 2nd Edition, Prentice - Hall of India</li> <li>• Sasieni M, Yaspan A &amp; John Wiley &amp; Sons Friedman L, Operations Research - Methods &amp; Problems 1st Edition</li> <li>• Natrajan Balasubramani, Tamilarasi, Operations Research, Pearson Education</li> <li>• G. Hadley, Linear Programming, Narosa Book Distributors Private Ltd</li> <li>• L.C. Jhamb, Quantitative Techniques (For Managerial Decisions VOL I), Everest Publishing House, Pune.</li> <li>• Paul Loomba, Linear Programming, Tata McGraw Hill Publishing Co. Ltd.</li> <li>• Aditham B. Rao , Operations Research Edition 2008, Jaico Publishing House, Mumbai</li> </ul>

# University of Mumbai



## **Bachelor of Management Studies Programme Guidelines for Project Work at Third Year Semester VI**

**Under Choice Based Credit, Grading and  
Semester System**

*(To be implemented from Academic Year 2018-2019)*

***Board of Studies-in-Business Management***

## Introduction

Inclusion of project work in the course curriculum of the Bachelor of Management Studies programme is one of the ambitious aspects in the programme structure. The main objective of inclusion of project work is to inculcate the element of research analyse and scientific temperament challenging the potential of learner as regards to his/ her eager to enquire and ability to interpret particular aspect of the study. It is expected that the guiding teacher should undertake the counselling sessions and make the awareness among the learners about the methodology of formulation, preparation and evaluation pattern of the project work.

- There are two modes of preparation of project work
  1. Project work based on research methodology in the study area
  2. Project work based on internship in the study area

### **Guidelines for preparation of Project Work**

#### **1. General guidelines for preparation of project work based on Research Methodology**

- The project topic may be undertaken in any area of Elective Courses.
- Each of the learner has to undertake a Project individually under the supervision of a teacher-guide.
- The learner shall decide the topic and title which should be specific, clear and with definite scope in consultation with the teacher-guide concerned.
- University/college shall allot a guiding teacher for guidance to the students based on her / his specialization.
- The project report shall be prepared as per the broad guidelines given below:
  - Font type: Times New Roman
  - Font size: 12-For content, 14-for Title
  - Line Space : 1.5-for content and 1-for in table work
  - Paper Size: A4
  - Margin : in Left-1.5, Up-Down-Right-1
  - The Project Report shall be bounded.
  - The project report should be 80 to 100 pages

# Format

*1<sup>st</sup> page (Main Page)*

*Title of the problem of the Project*

**A Project Submitted to**

**University of Mumbai for partial completion of the degree of**

**Bachelor of Management Studies**

**Under the Faculty of Commerce**

**By**

*Name of the Learner*

**Under the Guidance of**

*Name of the Guiding Teacher*

*Name and address of the College*

*Month and Year*

*2<sup>nd</sup> Page*

*This page to be repeated on 2<sup>nd</sup> page (i.e. inside after main page)*

*On separate page*

## **Index**

Chapter No. 1	Title of the Chapter	Page No.
(sub point 1.1, 1.1.1, .... And so on)		

Chapter No. 2	Title of the Chapter
---------------	----------------------

Chapter No. 3	Title of the Chapter
---------------	----------------------

Chapter No. 4	Title of the Chapter
---------------	----------------------

Chapter No. 5	Title of the Chapter
---------------	----------------------

**List of tables, if any, with page numbers.**

**List of Graphs, if any, with page numbers.**

**List of Appendix, if any, with page numbers.**

**Abbreviations used:**



# **Structure to be followed to maintain the uniformity in formulation and presentation of Project Work**

## ***(Model Structure of the Project Work)***

- **Chapter No. 1: Introduction**

In this chapter Selection and relevance of the problem, historical background of the problem, brief profile of the study area, definition/s of related aspects, characteristics, different concepts pertaining to the problem etc can be incorporated by the learner.

- **Chapter No. 2: Research Methodology**

This chapter will include Objectives, Hypothesis, Scope of the study, limitations of the study, significance of the study, Selection of the problem, Sample size, Data collection, Tabulation of data, Techniques and tools to be used, etc can be incorporated by the learner.

- **Chapter No. 3: Literature Review**

This chapter will provide information about studies done on the respective issue. This would specify how the study undertaken is relevant and contribute for value addition in information/ knowledge/ application of study area which ultimately helps the learner to undertake further study on same issue.

- **Chapter No. 4: Data Analysis, Interpretation and Presentation**

This chapter is the core part of the study. The analysis pertaining to collected data will be done by the learner. The application of selected tools or techniques will be used to arrive at findings. In this, table of information's, presentation of graphs etc. can be provided with interpretation by the learner.

- **Chapter No. 5: Conclusions and Suggestions**

In this chapter of project work, findings of work will be covered and suggestion will be enlisted to validate the objectives and hypotheses.

***Note: If required more chapters of data analysis can be added.***

- **Bibliography**
- **Appendix**

*On separate page*

*Name and address of the college*

## ***Certificate***

This is to certify that Ms/Mr \_\_\_\_\_ has worked and duly completed her/his Project Work for the degree of Bachelor of Management Studies under the Faculty of Commerce in the subject of \_\_\_\_\_ and her/his project is entitled, “ \_\_\_\_\_ *Title of the Project* \_\_\_\_\_ ” under my supervision.

I further certify that the entire work has been done by the learner under my guidance and that no part of it has been submitted previously for any Degree or Diploma of any University.

It is her/ his own work and facts reported by her/his personal findings and investigations.



Name and Signature of  
Guiding Teacher

Date of submission:

*On separate page*

## ***Declaration by learner***

I the undersigned Miss / Mr. \_\_\_\_\_ *Name of the learner* \_\_\_\_\_ here by,  
declare that the work embodied in this project work titled “ \_\_\_\_\_  
\_\_\_\_\_ *Title of the Project* \_\_\_\_\_ ”,  
forms my own contribution to the research work carried out under the guidance of  
\_\_\_\_\_ *Name of the guiding teacher* \_\_\_\_\_ is a result of my own research work and has  
not been previously submitted to any other University for any other Degree/ Diploma  
to this or any other University.

Wherever reference has been made to previous works of others, it has been clearly  
indicated as such and included in the bibliography.

I, here by further declare that all information of this document has been obtained and  
presented in accordance with academic rules and ethical conduct.

Name and Signature of the learner

Certified by

Name and signature of the Guiding Teacher

## ***Acknowledgment***

### ***(Model structure of the acknowledgement)***

To list who all have helped me is difficult because they are so numerous and the depth is so enormous.

I would like to acknowledge the following as being idealistic channels and fresh dimensions in the completion of this project.

I take this opportunity to thank the **University of Mumbai** for giving me chance to do this project.

I would like to thank my **Principal**, \_\_\_\_\_ for providing the necessary facilities required for completion of this project.

I take this opportunity to thank our **Coordinator** \_\_\_\_\_, for her moral support and guidance.

I would also like to express my sincere gratitude towards my project guide \_\_\_\_\_ whose guidance and care made the project successful.

I would like to thank my **College Library**, for having provided various reference books and magazines related to my project.

Lastly, I would like to thank each and every person who directly or indirectly helped me in the completion of the project especially **my Parents and Peers** who supported me throughout my project.

## 2. Guidelines for Internship based project work

- Minimum 20 days/ 100 hours of Internship with an Organisation/ NGO/ Charitable Organisation/ Private firm.
- The theme of the internship should be based on any study area of the elective courses
- Experience Certificate is Mandatory
- A project report has to be brief in content and must include the following aspects:
  - **Executive Summary:**  
A bird's eye view of your entire presentation has to be precisely offered under this category.
  - **Introduction on the Company:**  
A Concise representation of company/ organization defining its scope, products/ services and its SWOT analysis.
  - **Statement and Objectives:**  
The mission and vision of the organization need to be stated enshrining its broad strategies.
  - **Your Role in the Organisation during the internship:**  
The key aspects handled, the department under which you were deployed and brief summary report duly acknowledged by the reporting head.
  - **Challenges:**  
The challenges confronted while churning out theoretical knowledge into practical world.
  - **Conclusion:**  
A brief overview of your experience and suggestions to bridge the gap between theory and practice.
- The project report based on internship shall be prepared as per the broad guidelines given below:
  - Font type: Times New Roman
  - Font size: 12-For content, 14-for Title
  - Line Space : 1.5-for content and 1-for in table work
  - Paper Size: A4
  - Margin : in Left-1.5, Up-Down-Right-1
  - The Project Report shall be bounded.
  - The project report should be of minimum 50 pages

## Evaluation pattern of the project work

The Project Report shall be evaluated in two stages viz.	
<b>• Evaluation of Project Report (Bound Copy)</b>	<b>60 Marks</b>
▪ Introduction and other areas covered	20 Marks
▪ Research Methodology, Presentation, Analysis and interpretation of data	30 Marks
▪ Conclusion & Recommendations	10 Marks
<b>• Conduct of Viva-voce</b>	<b>40 Marks</b>
▪ In the course of Viva-voce, the questions may be asked such as importance / relevance of the study, objective of the study, methodology of the study/ mode of Enquiry (question responses)	10 Marks
▪ Ability to explain the analysis, findings, concluding observations, recommendation, limitations of the Study	20 Marks
▪ Overall Impression (including Communication Skill)	10 Marks

**Note:**

- *The guiding teacher along with the external evaluator appointed by the University/ College for the evaluation of project shall conduct the viva-voce examination as per the evaluation pattern*

## Passing Standard

- Minimum of Grade E in the project component
- In case of failing in the project work, the same project can be revised for ATKT examination.
- Absence of student for viva voce: If any student fails to appear for the viva voce on the date and time fixed by the department such student shall appear for the viva voce on the date and time fixed by the Department, such student shall appear for the viva voce only along with students of the next batch.

**Revised Syllabus of Courses of Bachelor of Management Studies Programme  
at Semester V and VI  
with effect from the Academic Year 2018-2019**

**Scheme of Evaluation**

The performance of the learners will be evaluated in two Components. One component will be the Internal Assessment component carrying 25% marks and the second component will be the Semester-wise End Examination component carrying 75% marks. The allocation of marks for the Internal Assessment and Semester End Examinations will be as shown below:-

**A) Internal Assessment: 25 %**

**Question Paper Pattern  
(Internal Assessment- Courses without Practical Courses)**

Sr. No.	Particular	Marks
1	<b>One class test (20 Marks)</b>	
	Match the Column/ Fill in the Blanks/ Multiple Choice Questions (½ Mark each)	05 Marks
	Answer in One or Two Lines (Concept based Questions) (01 Mark each)	05 Marks
	Answer in Brief (Attempt Any Two of the Three) (05 Marks each)	10 Marks
2	Active participation in routine class instructional deliveries and overall conduct as a responsible learner, mannerism and articulation and exhibit of leadership qualities in organizing related academic activities	05 Marks

**B) Semester End Examination: 75 %**

- i) Duration: The examination shall be of 2 ½ Hours duration
- ii) Theory question paper pattern
  - There shall be five questions each of 15 marks.
  - All questions shall be compulsory with internal choice within the questions.
  - Question may be subdivided into sub-questions a, b, c... and the allocation of marks depends on the weightage of the topic.

**(Detail question paper pattern has been given separately)**

**❖ Passing Standard**

The learners to pass a course shall have to obtain a minimum of 40% marks in aggregate for each course where the course consists of Internal Assessment and Semester End Examination. The learners shall obtain minimum of 40% marks (i.e. 10 out of 25) in the Internal Assessment and 40% marks in Semester End Examination (i.e. 30 Out of 75) separately, to pass the course and minimum of Grade E to pass a particular semester A learner will be said to have passed the course if the learner passes the Internal Assessment and Semester End Examination together.

## **Question Paper Pattern (Practical Courses)**

Maximum Marks: 75

Questions to be set: 05

Duration: 2 1/2 Hrs.

All Questions are Compulsory Carrying 15 Marks each.

Question No	Particular	Marks
Q-1	Objective Questions A. Sub Questions to be asked 10 and to be answered any 08 B. Sub Questions to be asked 10 and to be answered any 07 (*Multiple choice / True or False / Match the columns/Fill in the blanks)	15 Marks
Q-2	Full Length Practical Question <b>OR</b>	15 Marks
Q-2	Full Length Practical Question	15 Marks
Q-3	Full Length Practical Question <b>OR</b>	15 Marks
Q-3	Full Length Practical Question	15 Marks
Q-4	Full Length Practical Question <b>OR</b>	15 Marks
Q-4	Full Length Practical Question	15 Marks
Q-5	A) Theory questions B) Theory questions <b>OR</b>	08 Marks 07 Marks
Q-5	Short Notes To be asked 05 To be answered 03	15 Marks

**Note:**

**Practical question of 15 marks may be divided into two sub questions of 7/8 and 10/5 Marks. If the topic demands, instead of practical questions, appropriate theory question may be asked.**



## **Question Paper Pattern (Theoretical Courses)**

Maximum Marks: 75

Questions to be set: 05

Duration: 2 1/2 Hrs.

All Questions are Compulsory Carrying 15 Marks each.

Question No	Particular	Marks
Q-1	Objective Questions A) Sub Questions to be asked 10 and to be answered any 08 B) Sub Questions to be asked 10 and to be answered any 07 (*Multiple choice / True or False / Match the columns/Fill in the blanks)	15 Marks
Q-2	Full Length Question <b>OR</b>	15 Marks
Q-2	Full Length Question	15 Marks
Q-3	Full Length Question <b>OR</b>	15 Marks
Q-3	Full Length Question	15 Marks
Q-4	Full Length Question <b>OR</b>	15 Marks
Q-4	Full Length Question	15 Marks
Q-5	A) Theory questions B) Theory questions <b>OR</b>	08 Marks 07 Marks
Q-5	Short Notes To be asked 05 To be answered 03	15 Marks

**Note:**

**Theory question of 15 marks may be divided into two sub questions of 7/8 and 10/5Marks.**

**AC 27/2/13**  
**Item No. 4.12**

# **UNIVERSITY OF MUMBAI**



**Syllabus for sem V & VI**  
**Program: B.Sc.**  
**Course: Horticulture**  
**Applied Component**

(Credit Based Semester and Grading System with  
effect from the academic year 2013–2014)

**T.Y.B.Sc. Applied Component Horticulture Syllabus**  
**Credit Based and Grading System**  
**To be implemented from the Academic year 2013-2014**

**SEMESTER V**

Course Code	UNIT	TOPICS	Credits	L / Week
USACHO501	<b><u>HORTICULTURE &amp; GARDENING -I</u></b>		<b>2</b>	<b>4</b>
	<b>I</b>	<b>INTRODUCTION TO HORTICULTURE</b>	<b>2</b>	<b>1</b>
	<b>II</b>	<b>PROPAGATION PRACTICES</b>		<b>1</b>
	<b>III</b>	<b>MANURES, FERTILIZERS AND DISEASES</b>		<b>1</b>
	<b>IV</b>	<b>GARDEN OPERATIONS FOR HORTICULTURE</b>		<b>1</b>
<b>USACHO5P1</b>	<b>Practicals based on all courses in theory</b>		<b>2</b>	<b>4</b>

**SEMESTER VI**

Course Code	UNIT	TOPICS	Credits	L / Week
USACHO601	<b><u>HORTICULTURE &amp; GARDENING - II</u></b>		<b>2</b>	<b>4</b>
	<b>I</b>	<b>LANDSCAPE GARDENING</b>	<b>2</b>	<b>1</b>
	<b>II</b>	<b>HORTICULTURE PRODUCE</b>		<b>1</b>
	<b>III</b>	<b>COMMERCIAL PRODUCTION</b>		<b>1</b>
	<b>IV</b>	<b>POST HARVEST TECHNOLOGY &amp; ENTREPRENEURSHIP IN HORTICULTURE</b>		<b>1</b>
<b>USBO6P1</b>	<b>Practicals based on all the courses in theory</b>		<b>2</b>	<b>4</b>

**SEMESTER V**  
**THEORY**

Course Code	Title	Credits
USACHO501	<u>HORTICULTURE AND GARDENING –I</u>	2 Credits (60 lectures )
<u>Unit 1 INTRODUCTION TO HORTICULTURE</u>		15 L
<ul style="list-style-type: none"><li>• Definition, importance and objectives of Horticulture, branches of Horticulture, Pomology, Olericulture, Landscape Gardening, Nurseries and development</li><li>• .Allied branches – Apiculture – Bee box, honey bee life cycle and role of apiculture in pollination, Sericulture – Silkworm life cycle, different types with host plant, Social Forestry, Exhibition: aims and objectives.</li><li>• Important Horticulture Research Institutes and Government Schemes for strategy plantations<ul style="list-style-type: none"><li>○ Konkan Krishi Vidyapeeth – Dapoli</li><li>○ National Research Centre for grapes.</li><li>○ Regional Fruit Research centre Pune</li><li>○ Horticulture Training Centre (H.T.C.) – Talegaon.</li><li>○ Central Potato Tuber Research Institute ( CPTRI) – Shimla</li></ul></li><li>• Horticulture Consultancy</li><li>• Strategy plantation – Lakhibaug Yojana</li></ul>		
<u>Unit 2 PROPAGATION PRACTICES</u>		15 L
<ul style="list-style-type: none"><li>• <b>By Seeds</b> Advantages and disadvantages, method of seed propagation Production of seeds, Handling, Collection and Storage Sowing, Transplanting of seedlings and Hardening Seed treatment to control diseases Seedling diseases and their control.</li><li>• <b>By specialized Vegetative structures</b> Bulbs, Tubers, Corms, Rhizomes, Root stock, runners, Offsets and suckers.</li><li>• <b>Artificial methods of plant propagation</b><ul style="list-style-type: none"><li>○ Cutting– Root cutting, Stem cuttings, and leaf cuttings. Use of PGR’s for rooting.</li><li>○ Layering – Definition, Types: Simple, compound, (Serpentine) Tip, Trench, Mound, Air Layering.</li><li>○ Grafting-Definition, advantages and disadvantages. Types: Splice, Whip/ Tongue, side, veneer, cleft, bark, epicotyls, approach, repair grafting – enarching, bridge and bracing.</li><li>○ Budding – Definition, advantages and disadvantages. Types: T-budding, shield, patch , ring budding.</li><li>○ Developing new varieties: Technique of Emasculation and bagging, role of polyploidy n production of seedless varieties in</li></ul></li></ul>		

plants.	
<ul style="list-style-type: none"> <li>• <b>Application of Tissue Culture in relation to Horticulture.</b></li> </ul>	
<b><u>UNIT-3 MAURES, FERTILIZERS AND DISEASES</u></b> <ul style="list-style-type: none"> <li>• <b>Manures:</b> Definition, importance, important manures FYM(compost), oil cakes, green manure, organic manures and vermicompost.</li> <li>• <b>Fertilizers:</b> Definition, Types – Straight, Compound and mixed. Nitrogenous (NH<sub>4</sub>)<sub>2</sub> SO<sub>4</sub>, Urea, Ca (NO<sub>3</sub>)<sub>2</sub>, NH<sub>4</sub>Cl, Phosphatic (Superphosphate, Bone meal), Potassic (Muriate of potash, K<sub>2</sub>SO<sub>4</sub>)</li> <li>• <b>Biofertilizers:</b> Bacteria, Cyanobacteria, Mycorrhiza, Sea weeds.</li> <li>• <b>Diseases:</b> Horticultural plant diseases and their control. Fungal diseases- Rust, Smut, Powdery mildew. Bacterial – Citrus canker, Bacterial wilt. Viral – TMV, Leaf curl.</li> <li>• <b>Pests</b> – common pests on horticultural crops – Aphids, beetle, stem borer, caterpillars and rats.</li> <li>• <b>Friends of farmers:</b> Eartworm, snakes and predaceous fungi.</li> </ul>	15 L
<b><u>UNIT 4 GARDEN OPERATIONS FOR HORTICULTURE</u></b> <ul style="list-style-type: none"> <li>• Selection of site, Preparation of soils for garden</li> <li>• Mulching, top- dressing, blanching</li> <li>• Sowing, transplanting, tree transplanting,</li> <li>• Irrigation, - Overhead, Surface, Underground</li> <li>• Weeding and pruning, - Principles, Objectives and general technique.</li> <li>• Water management and conservation through horticulture, Dry land Horticulture.</li> <li>• <b>Organic Farming</b> Definition, Scope, Indian scenario, Future scope</li> </ul>	15 L

### Practicals

Semester V USACHO5P1		Cr
PRACTICAL		2
	Garden implements and their uses .	
	Different types of pots & Potting medium , Potting and repotting	
	Propagation practices by seed, Vegetative propagation , cutting ,layering , budding, grafting .	
	Identification of :	

<p>Fertilizers – Identification by physical and chemical methods –Urea , Ammonium sulphate , Potassium sulphate, super phosphate .</p> <p>Manures – Identification of plants as green manure – <i>Glyricidia</i> , <i>Crotolaria</i>, <i>Leucaena</i> .</p> <p>Biofertilizers – Identification (material as slides) VAM, <i>Nostoc</i> ,<i>Rhizobium</i> .</p>	
Soil pH, Use of soil testing Kit, electrical conductivity, pH of water, liquid fertilizers .	
Method of preparing bonsai, Bottle Garden / Terrarium, Hanging baskets ,Dish garden .	
<p>Diseases and pests</p> <p>Fungal – Powdery mildew ,Rust ,Wilt, Blight, Smut,</p> <p>Bacterial – Canker ,Wilt</p> <p>Viral – Leaf curl ,yellow vein Mosaic</p> <p>Insects – Sucking, Biting, Chewing, Borers &amp; Ants .</p> <p>Non Insects pests- Nematodes, Rodents.</p>	
Preparation of natural insecticides – Neem arka , Dashparni arka, Seetaphal powder, Tobacco extracts .	
Project – Each student should individually present a project related to any topic related to Horticulture .It should be duly certified presented at practical examination.Project presentation college at level compulsory.	

**SEMESTER VI**  
**THEORY**

Course Code	Title	Credits
<b>USACHO601</b>	<b><u>HORTICULTURE AND GARDENING –II</u></b>	<b>2 Credits (60 lectures )</b>
<b><u>Unit 1 LANDSCAPE GARDENING</u></b> <ul style="list-style-type: none"> <li>Principles of landscaping &amp; garden design.</li> <li>Indoor plants &amp; Indoor gardens- Hydroponics, Terrarium/ Bottle garden,</li> </ul>		<b>15 L</b>

<p>Dish garden.</p> <ul style="list-style-type: none"> <li>• Important garden features- Paths &amp; Avenues, Hedges &amp; Edges, Lawn, Flowerbeds, Arches&amp; Pergolas, Fencing, Water bodies, Rock garden &amp; Plants suitable for different locations &amp; climates.</li> <li>• Lawn- Purpose of preparation of lawn, Method of preparation of lawn &amp; management of lawn &amp; lawn plants.</li> <li>• Soil manipulation for plantation of desirable varieties.</li> <li>• Mughal, Buddist, Botanical garden, Vertical wall garden &amp; Theme park</li> <li>• Important Gardens of India—Shalimar (Shrinagar), Vrindavan( Mysore), Veer Jijamata Udyan( Mumbai)</li> </ul>	
<p><b><u>Unit 2 - HORTICULTURE PRODUCE</u></b></p> <ul style="list-style-type: none"> <li>• <b>High –tech Horticultural production-</b> Green house technology- Meaning, types, layout &amp; construction, irrigation systems. Care &amp; attention. Hardening of plants. Space gardens.</li> <li>• <b>Floriculture</b> – Scope &amp; importance, soil and climatic requirement and cultivation practices and Economics of green house production of Gerbera, Carnation, Roses, Orchids. Propagation techniques, packing and marketing, enhancing and delaying period of bloom by special methods. Floral decoration, Florist shop management.</li> </ul>	15 L
<p><b><u>UNIT-3 COMMERCIAL PRODUCTION</u></b></p> <ul style="list-style-type: none"> <li>• <b>Commercial production of the following</b> – in relation to propagation, post plantation care, harvesting, post harvest management &amp; varieties. <ul style="list-style-type: none"> <li>○ Tubers- potato</li> <li>○ Vegetables- Tomato</li> <li>○ Fruits- Mango, Grapes &amp; Coconut- products like coco peat/ Coir etc.</li> <li>○ Spices/condiments- chilly</li> <li>○ Medicinal plants- <i>Aloe vera</i>, <i>Stevia rebaurdina</i>(Madura)</li> <li>○ Aromatic plant- <i>Citronella</i>, Patchouli</li> </ul> </li> </ul>	15 L
<p><b><u>UNIT 4 POST HARVEST TECHNOLOGY &amp; ENTREPRENEURSHIP IN HORTICULTURE</u></b></p> <ul style="list-style-type: none"> <li>• <b>Maturity-</b> Factors responsible for maturity &amp; ripening methods used for delaying ripening.</li> <li>• <b>Harvest-</b> Time of harvest, harvesting and handling of harvested products</li> <li>• <b>Storage of fresh produce-</b> Types of storage of fruits &amp; vegetables</li> </ul>	15 L

<ul style="list-style-type: none"> <li>• <b>Fruit &amp; vegetables preservation technology.</b></li> <li>• <b>Marketing-</b> grading, packing &amp; transportation. Ways of increasing the market value and shelf life of horticultural produce.</li> <li>• <b>Horticultural business, management and Entrepreneurship development</b> Horticulture as a business definition and nature, organization, planning and operation of Horticulture farm business.</li> </ul>	
---	--

### Practicals

Semester VI USACHO6P1		Cr
PRACTICAL		2
	Preparation of garden layout	
	List of plants suitable for garden locations- 2-3 plants for each location .	
	Identification of important horticultural plants <ol style="list-style-type: none"> <li>1. Herbs – foliage any 2 and flowering any 2</li> <li>2. Shrubs – foliage any 2 flowering any 2</li> <li>3. Trees – foliage any 2 and flowering any 2</li> <li>4. Climbers – any 2</li> <li>5. Lianas – any 2</li> <li>6. Epiphytes – any 2</li> <li>7. Creepers –any 2</li> <li>8. Trailers – any 2</li> <li>9. Aquatic plants – any 3 ( preferably various habitat)</li> <li>10. Succulents – any 2</li> <li>11. Weeds –any 10</li> </ol>	
	Flower arrangements –Indian (Gajara , veni, garland , bouquet - Baskets , hand ,torch type , table floral arrangement), Japanese and western all type	
	Preparation of Jams, Jellies, Squashes/ Syrups, Pickle, sauces	
	Fruit & vegetable carving & Bio-jewelery	
	Green house plants- Information regarding to soil, temperature, irrigation, fertilizer requirements and propagation methods for <i>Anthurium</i> , <i>Gerbera</i> , Orchids, Tuberose, Carnation, Roses, <i>Capsicum</i>	



	Preparation of garden layout	
	List of plants suitable for garden locations- 2-3 plants for each location .	

**Visits :** To Garden /Parks / Nurseries/ Exhibition / Horticulture industries / Research Station and record of visits should be duly certified and presented at practical examination.

### Modality of Assessment :

#### Theory Examination Pattern:

**A) Internal Assessment - 40%**

**40 marks.**

**Theory**

**40 marks**

Sr No	Evaluation type	Marks
1	One Assignments/Case study/Project	10
2	One class Test (multiple choice questions / objective)	20
3	Active participation in routine class instructional deliveries(case studies/ seminars//presentation)	05
4	Overall conduct as a responsible student, manners, skill in articulation, leadership qualities demonstrated through organizing co-curricular activities, etc.	05

**B ) External examination - 60 %**

**Semester End Theory Assessment - 60%**

**60 marks**

- i. Duration - These examinations shall be of two hours duration.
- ii. Theory question paper pattern :-
  1. There shall be **five** questions each of **12** marks. On each unit there will be one question & fifth one will be based on all the four units .
  2. All questions shall be compulsory with internal choice within the questions. Each question will be of **24** marks with options.
  3. Questions may be sub divided into sub questions a, b, c & d only, each carrying **six** marks **OR** a, b, c, d,e & f only each carrying **four** marks and the allocation of marks depends on the weightage of the topic.

#### Practical Examination Pattern:

**(A) Internal Examination:-**

**There will not be any internal examination/ evaluation for practicals.**

**(B) External (Semester end practical examination) :-**

<b>Sr.No.</b>	<b>Particulars</b>	<b>Marks</b>
<b>1.</b>	<b>Laboratory work</b>	<b>80</b>
<b>2.</b>	<b>Journal</b>	<b>10</b>
<b>3.</b>	<b>Viva</b>	<b>10</b>

**Assessment pattern for semester end / External practical examination of 80 marks shall be finalized in the workshop of the subject**

**Semester end practical examination in applied component shall be conducted by the concerned department of the Institute/ College at the end of each semester and the marks of the candidates are to be sent to the University in the prescribed format.**

**Semester V:**

Practical examination will be held at the college / institution at the end of the semester.

The students are required to present a duly certified journal for appearing at the practical examination, failing which they will not be allowed to appear for the examination.

**In case of loss of Journal and/ or Report, a Lost Certificate should be obtained from Head of the Department/ Co-ordinator of the department ; failing which the student will not be allowed to appear for the practical examination.**

**Semester VI**

Practical examination will be held at the college / institution at the end of the semester. The students are required to present a duly certified journal for appearing at the practical examination, failing which they will not be allowed to appear for the examination.

**In case of loss of Journal and/ or Report, a Lost Certificate should be obtained from Head of the Department/ Co-ordinator of the department ; failing which the student will not be allowed to appear for the practical examination.**

# **UNIVERSITY OF MUMBAI**



**Syllabus for Sem V & VI**  
**Program: Bachelor of Science**  
**Course: Computer Science**

Credit Based Semester and Grading System with  
effect from  
Academic Year 2018-2019

## **Preamble**

This is the third year curriculum in the subject of Computer Science. The revised structure is designed to transform students into technically competent, socially responsible and ethical Computer Science professionals. In these Semesters we have made the advancements in the subject based on the previous Semesters Knowledge.

In the first year basic foundation of important skills required for software development is laid. Second year of this course is about studying core computer science subjects. The third year is the further advancement which covers developing capabilities to design formulations of computing models and its applications in diverse areas.

The proposed curriculum contains two semesters, each Semester contains two Electives: Elective-I and II. Every Elective contains three papers based on specific areas of Computer Science. It also includes one Skill Enhancement paper per semester, helps the student to evaluate his/her computer science domain specific skills and also to meet industry expectations. This revised curriculum has not only taken the specific areas of computer science into consideration but will also give the opportunity to the student to prove his/her ability in the subject practically through the Project Implementation. In Semester V and Semester VI student has to undertake a Project. It can boost his/her confidence and also can encourage the student to perform innovations in the subject as the choice of the Project topic is kept open covering most of the areas of Computer Science subject as per the students interest and the subject they have learned during the Course.

Proposed Curriculum contains challenging and varied subjects aligned with the current trend with the introduction of Machine Intelligence specific subject such as Artificial Intelligence, Information Retrieval. Data Management related subjects such as Cloud Computing and Data Science. Image processing topics such as Game Programming, Digital Image Processing. Introduction of physical world through Architecting of IoT and Wireless Sensor Networks and Mobile Communication. Security domain is also evolved by the introduction of Ethical Hacking, Cyber Forensic and Information and Network Security. To get the hands on experience Linux Server Administration and Web Services topics are included.

In essence, the objective of this syllabus is to create a pool of technologically savvy, theoretically strong, innovatively skilled and ethically responsible generation of computer science professionals. Hope that the teacher and student community of University of Mumbai will accept and appreciate the efforts.

**T.Y.B.Sc. (Semester V and VI)**  
**Computer Science Syllabus**  
**Credit Based Semester and Grading System**  
**To be implemented from the Academic year 2018-2019**

<b>SEMESTER V</b>			
<b>Course</b>	<b>TOPICS</b>	<b>Credits</b>	<b>L / Week</b>
	<b>Elective-I (Select Any Two)</b>		
USCS501	Artificial Intelligence	3	3
USCS502	Linux Server Administration	3	3
USCS503	Software Testing and Quality Assurance	3	3
	<b>Elective-II (Select Any Two)</b>		
USCS504	Information and Network Security	3	3
USCS505	Architecting of IoT	3	3
USCS506	Web Services	3	3
	<b>Skill Enhancement</b>		
USCS507	Game Programming	2	3
	<b>Practical</b>		
USCSP501	Practical of Elective-I	2	6
USCSP502	Practical of Elective-II	2	6
USCSP503	Project Implementation	1	3
USCSP504	Practical of Skill Enhancement : USCS507	1	3

<b>SEMESTER VI</b>			
<b>Course</b>	<b>TOPICS</b>	<b>Credits</b>	<b>L / Week</b>
	<b>Elective-I (Select Any Two)</b>		
USCS601	Wireless Sensor Networks and Mobile Communication	3	3
USCS602	Cloud Computing	3	3
USCS603	Cyber Forensics	3	3
	<b>Elective-II (Select Any Two)</b>		

USCS604	Information Retrieval	3	3
USCS605	Digital Image Processing	3	3
USCS606	Data Science	3	3
	<b>Skill Enhancement</b>		
USCS607	Ethical Hacking	2	3
	<b>Practical</b>		
USCSP601	Practical of Elective-I	2	6
USCSP602	Practical of Elective-II	2	6
USCSP603	Project Implementation	1	3
USCSP604	Practical of Skill Enhancement : USCS607	1	3

## SEMESTER V

### THEORY

<b>Course:</b> <b>USCS501</b>	<b>TOPICS (Credits : 03 Lectures/Week:03)</b> <b>Artificial Intelligence</b>	
<b>Objectives:</b> Artificial Intelligence (AI) and accompanying tools and techniques bring transformational changes in the world. Machines capability to match, and sometimes even surpass human capability, make AI a hot topic in Computer Science. This course aims to introduce the learner to this interesting area.		
<b>Expected Learning Outcomes:</b> After completion of this course, learner should get a clear understanding of AI and different search algorithms used for solving problems. The learner should also get acquainted with different learning algorithms and models used in machine learning.		
<b>Unit I</b>	<b>What Is AI:</b> Foundations, History and State of the Art of AI.  <b>Intelligent Agents:</b> Agents and Environments, Nature of Environments, Structure of Agents.  <b>Problem Solving by searching:</b> Problem-Solving Agents, Example Problems, Searching for Solutions, Uninformed Search Strategies, Informed (Heuristic) Search Strategies, Heuristic Functions.	<b>15L</b>
<b>Unit II</b>	<b>Learning from Examples:</b> Forms of Learning, Supervised Learning, Learning Decision Trees, Evaluating and Choosing the Best Hypothesis, Theory of Learning, Regression and Classification with Linear Models, Artificial Neural Networks, Nonparametric Models, Support Vector Machines, Ensemble Learning, Practical Machine Learning	<b>15L</b>

<b>Unit III</b>	<b>Learning probabilistic models:</b> Statistical Learning, Learning with Complete Data, Learning with Hidden Variables: The EM Algorithm. Reinforcement learning: Passive Reinforcement Learning, Active Reinforcement Learning, Generalization in Reinforcement Learning, Policy Search, Applications of Reinforcement Learning.	<b>15L</b>
<b>Textbook(s):</b> 1) Artificial Intelligence: A Modern Approach, Stuart Russell and Peter Norvig, 3rd Edition, Pearson, 2010. <b>Additional Reference(s):</b> 1) Artificial Intelligence: Foundations of Computational Agents, David L Poole, Alan K. Mackworth, 2nd Edition, Cambridge University Press, 2017. 2) Artificial Intelligence, Kevin Knight and Elaine Rich, 3rd Edition, 2017 3) The Elements of Statistical Learning, Trevor Hastie, Robert Tibshirani and Jerome Friedman, Springer, 2013		

<b>Course:</b> <b>USCS502</b>	<b>TOPICS (Credits : 03 Lectures/Week:03)</b> <b>Linux Server Administration</b>
<b>Objectives:</b> Demonstrate proficiency with the Linux command line interface, directory & file management techniques, file system organization, and tools commonly found on most Linux distributions. Effectively operate a Linux system inside of a network environment to integrate with existing service solutions. Demonstrate the ability to troubleshoot challenging technical problems typically encountered when operating and administering Linux systems. <b>Expected Learning Outcomes:</b> Learner will be able to develop Linux based systems and maintain. Learner will be able to install appropriate service on Linux server as per requirement. Learner will have proficiency in Linux server administration.	



<b>Unit I</b>	<p><b>Introduction:</b> Technical Summary of Linux Distributions, Managing Software</p> <p><b>Single-Host Administration:</b> Managing Users and Groups, Booting and shutting down processes, File Systems, Core System Services, Process of configuring, compiling, Linux Kernel</p> <p><b>Networking and Security:</b> TCP/IP for System Administrators, basic network Configuration, Linux Firewall (Netfilter), System and network security</p>	<b>15L</b>
<b>Unit II</b>	<p><b>Internet Services:</b> Domain Name System (DNS), File Transfer Protocol (FTP), Apache web server, Simple Mail Transfer Protocol (SMTP), Post Office Protocol and Internet Mail Access Protocol (POP and IMAP), Secure Shell (SSH), Network Authentication, OpenLDAP Server, Samba and LDAP, Network authentication system (Kerberos), Domain Name Service (DNS), Security</p>	<b>15L</b>
<b>Unit III</b>	<p><b>Intranet Services:</b> Network File System (NFS), Samba, Distributed File Systems (DFS), Network Information Service (NIS), Lightweight Directory Access Protocol (LDAP), Dynamic Host Configuration Protocol (DHCP), MySQL, LAMP Applications File Servers, Email Services, Chat Applications, Virtual Private Networking.</p>	<b>15L</b>
<p><b>Textbook(s):</b></p> <ol style="list-style-type: none"> <li>1) Linux Administration: A Beginner's Guide, Wale Soyinka, Seventh Edition, McGraw-Hill Education, 2016</li> <li>2) Ubuntu Server Guide, Ubuntu Documentation Team, 2016</li> </ol> <p><b>Additional Reference(s):</b></p> <ol style="list-style-type: none"> <li>1) Mastering Ubuntu Server, Jay LaCroix, PACKT Publisher, 2016</li> </ol>		

<b>Course:</b> <b>USCS503</b>	<b>TOPICS (Credits : 03 Lectures/Week:03)</b> <b>Software Testing and Quality Assurance</b>	
<b>Objectives:</b>  To provide learner with knowledge in Software Testing techniques. To understand how testing methods can be used as an effective tools in providing quality assurance concerning for software.  To provide skills to design test case plan for testing software  <b>Expected Learning Outcomes:</b>  Understand various software testing methods and strategies. Understand a variety of software metrics, and identify defects and managing those defects for improvement in quality for given software. Design SQA activities, SQA strategy, formal technical review report for software quality control and assurance.		
<b>Unit I</b>	<b>Software Testing and Introduction to quality :</b> Introduction, Nature of errors, an example for Testing, Definition of Quality , QA, QC, QM and SQA , Software Development Life Cycle, Software Quality Factors  <b>Verification and Validation :</b> Definition of V &V , Different types of V & V Mechanisms, Concepts of Software Reviews, Inspection and Walkthrough  <b>Software Testing Techniques :</b> Testing Fundamentals, Test Case Design, White Box Testing and its types, Black Box Testing and its types	<b>15L</b>
<b>Unit II</b>	<b>Software Testing Strategies :</b> Strategic Approach to Software Testing, Unit Testing, Integration Testing, Validation Testing, System Testing  <b>Software Metrics :</b> Concept and Developing Metrics, Different types of Metrics, Complexity metrics  <b>Defect Management:</b> Definition of Defects, Defect Management Process, Defect Reporting, Metrics Related to Defects, Using Defects for Process Improvement.	<b>15L</b>
<b>Unit III</b>	<b>Software Quality Assurance :</b> Quality Concepts, Quality Movement, Background Issues, SQA activities, Software Reviews, Formal Technical Reviews, Formal approaches to SQA, Statistical Quality Assurance, Software Reliability, The ISO 9000 Quality Standards, , SQA Plan , Six sigma, Informal Reviews	<b>15L</b>

	<p><b>Quality Improvement :</b> Introduction, Pareto Diagrams, Cause-effect Diagrams, Scatter Diagrams, Run charts</p> <p><b>Quality Costs :</b> Defining Quality Costs, Types of Quality Costs, Quality Cost Measurement, Utilizing Quality Costs for Decision-Making</p>	
<p><b>Textbook(s):</b></p> <ol style="list-style-type: none"> <li>1. Software Engineering for Students, A Programming Approach, Douglas Bell, 4<sup>th</sup> Edition,, Pearson Education, 2005</li> <li>2. Software Engineering – A Practitioners Approach, Roger S. Pressman, 5<sup>th</sup> Edition, Tata McGraw Hill, 2001</li> <li>3. Quality Management, Donna C. S. Summers, 5<sup>th</sup> Edition, Prentice-Hall, 2010.</li> <li>4. Total Quality Management, Dale H. Besterfield, 3<sup>rd</sup> Edition, Prentice Hall, 2003.</li> </ol> <p><b>Additional Reference(s):</b></p> <ol style="list-style-type: none"> <li>1. Software engineering: An Engineering approach, J.F. Peters, W. Pedrycz , John Wiley,2004</li> <li>2. Software Testing and Quality Assurance Theory and Practice, Kshirsagar Naik, Priyadarshi Tripathy , John Wiley &amp; Sons, Inc. , Publication, 2008</li> <li>3. Software Engineering and Testing, B. B. Agarwal, S. P. Tayal, M. Gupta, Jones and Bartlett Publishers, 2010</li> </ol>		

<b>Course:</b>	<b>TOPICS (Credits : 03 Lectures/Week:03)</b>
<b>USCS504</b>	<b>Information and Network Security</b>
<p><b>Objectives:</b></p> <p>To provide students with knowledge of basic concepts of computer security including network security and cryptography.</p> <p><b>Expected Learning Outcomes:</b></p> <p>Understand the principles and practices of cryptographic techniques. Understand a variety of generic security threats and vulnerabilities, and identify &amp; analyze particular security problems for a given application. Understand various protocols for network security to protect against the threats in a network</p>	

<b>Unit I</b>	<p><b>Introduction:</b> Security Trends, The OSI Security Architecture, Security Attacks, Security Services, Security Mechanisms</p> <p><b>Classical Encryption Techniques:</b> Symmetric Cipher Model, Substitution Techniques, Transposition Techniques, Steganography, Block Cipher Principles, The Data Encryption Standard, The Strength of DES, AES (round details not expected), Multiple Encryption and Triple DES, Block Cipher Modes of Operation, Stream Ciphers</p> <p><b>Public-Key Cryptography and RSA:</b> Principles of Public-Key Cryptosystems, The RSA Algorithm</p>	<b>15L</b>
<b>Unit II</b>	<p><b>Key Management:</b> Public-Key Cryptosystems, Key Management, Diffie-Hellman Key Exchange</p> <p><b>Message Authentication and Hash Functions:</b> Authentication Requirements, Authentication Functions, Message Authentication Codes, Hash Functions, Security of Hash Functions and Macs, Secure Hash Algorithm, HMAC</p> <p><b>Digital Signatures and Authentication:</b> Digital Signatures, Authentication Protocols, Digital Signature Standard</p> <p><b>Authentication Applications:</b> Kerberos, X.509 Authentication, Public-Key Infrastructure</p>	<b>15L</b>
<b>Unit III</b>	<p><b>Electronic Mail Security:</b> Pretty Good Privacy, S/MIME</p> <p><b>IP Security:</b> Overview, Architecture, Authentication Header, Encapsulating Security Payload, Combining Security Associations, Key Management</p> <p><b>Web Security:</b> Web Security Considerations, Secure Socket Layer and Transport Layer Security, Secure Electronic Transaction</p> <p><b>Intrusion:</b> Intruders, Intrusion Techniques, Intrusion Detection</p> <p><b>Malicious Software:</b> Viruses and Related Threats, Virus Countermeasures, DDOS</p> <p><b>Firewalls:</b> Firewall Design Principles, Types of Firewalls</p>	<b>15L</b>
<p><b>Textbook(s):</b></p> <p>1) Cryptography and Network Security: Principles and Practice 5th Edition, William</p>		

Stallings, Pearson,2010

**Additional Reference(s):**

- 1) Cryptography and Network Security, Atul Kahate, Tata McGraw-Hill, 2013.
- 2) Cryptography and Network, Behrouz A Fourouzan, Debdeep Mukhopadhyay, 2<sup>nd</sup> Edition, TMH, 2011

<b>Course:</b> <b>USCS505</b>	<b>TOPICS (Credits : 03 Lectures/Week:03)</b> <b>Architecting of IoT</b>	
<b>Objectives:</b> Discovering the interconnection and integration of the physical world. Learner should get knowledge of the architecture of IoT. <b>Expected Learning Outcomes:</b> Learners are able to design & develop IoT Devices. They should also be aware of the evolving world of M2M Communications and IoT analytics.		
<b>Unit I</b>	<b>IoT-An Architectural Overview:</b> Building architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations. <b>IoT Architecture-State of the Art :</b> Introduction, State of the art, Reference Model and architecture, IoT reference Model - IoT Reference Architecture Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views	<b>15L</b>
<b>Unit II</b>	<b>IoT Data Link Layer and Network Layer Protocols:</b> PHY/MAC Layer(3GPP MTC, IEEE 802.11, IEEE 802.15), Wireless HART,Z-Wave, Bluetooth Low Energy, Zigbee Smart Energy DASH7 <b>Network Layer:</b> IPv4, IPv6, 6LoWPAN, 6TiSCH,ND, DHCP, ICMP, RPL, CORPL, CARP	<b>15L</b>

<b>Unit III</b>	<b>Transport layer protocols :</b> Transport Layer (TCP, MPTCP, UDP, DCCP, SCTP)-(TLS, DTLS) <b>Session layer:</b> Session Layer-HTTP, CoAP, XMPP, AMQP, MQTT <b>Service layer protocols:</b> Service Layer -oneM2M, ETSI M2M, OMA, BBF	<b>15L</b>
<b>Textbook(s):</b> <ol style="list-style-type: none"> <li>1. From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence, Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle,1st Edition, Academic Press, 2014.</li> <li>2. Learning Internet of Things, Peter Waher, PACKT publishing, BIRMINGHAM – MUMBAI,2015</li> </ol> <b>Additional References(s):</b> <ol style="list-style-type: none"> <li>1. Building the Internet of Things with IPv6 and MIPv6: The Evolving World of M2M Communications, Daniel Minoli, Wiley Publications,2013</li> <li>2. Internet of Things (A Hands-onApproach), Vijay Madisetti and ArshdeepBahga,1st Edition, VPT, 2014.</li> <li>3. <a href="http://www.cse.wustl.edu/~jain/cse570-15/ftp/iot_prot/index.html">http://www.cse.wustl.edu/~jain/cse570-15/ftp/iot_prot/index.html</a></li> </ol>		

<b>Course:</b>  <b>USCS506</b>	<b>TOPICS (Credits : 03 Lectures/Week:03)</b>  <b>Web Services</b>
<b>Objectives:</b> To understand the details of web services technologies like SOAP, WSDL, and UDDI. To learn how to implement and deploy web service client and server. To understand the design principles and application of SOAP and REST based web services (JAX-Ws and JAX-RS).To understand WCF service. To design secure web services and QoS of Web Services <b>Expected Learning Outcomes:</b> Emphasis on SOAP based web services and associated standards such as WSDL. Design SOAP based / RESTful / WCF services Deal with Security and QoS issues of Web Services	

<b>Unit I</b>	<b>Web services basics :</b>  What Are Web Services? Types of Web Services Distributed computing infrastructure, overview of XML, SOAP, Building Web Services with JAX-WS, Registering and Discovering Web Services, Service Oriented Architecture, Web Services Development Life Cycle, Developing and consuming simple Web Services across platform	<b>15L</b>
<b>Unit II</b>	<b>The REST Architectural style :</b>  Introducing HTTP, The core architectural elements of a RESTful system, Description and discovery of RESTful web services, Java tools and frameworks for building RESTful web services, JSON message format and tools and frameworks around JSON, Build RESTful web services with JAX-RS APIs, The Description and Discovery of RESTful Web Services, Design guidelines for building RESTful web services, Secure RESTful web services	<b>15L</b>
<b>Unit III</b>	<b>Developing Service-Oriented Applications with WCF :</b>  What Is Windows Communication Foundation, Fundamental Windows Communication Foundation Concepts, Windows Communication Foundation Architecture, WCF and .NET Framework Client Profile, Basic WCF Programming, WCF Feature Details. Web Service QoS	<b>15L</b>
<b>Textbook(s):</b>  1) Web Services: Principles and Technology, Michael P. Papazoglou, Pearson Education Limited, 2008  2) RESTful Java Web Services, Jobinesh Purushothaman, PACKT Publishing, 2 <sup>nd</sup> Edition, 2015  3) Developing Service-Oriented Applications with WCF, Microsoft, 2017 <a href="https://docs.microsoft.com/en-us/dotnet/framework/wcf/index">https://docs.microsoft.com/en-us/dotnet/framework/wcf/index</a>  <b>Additional Reference(s):</b>  1) Leonard Richardson and Sam Ruby, RESTful Web Services, O'Reilly, 2007  2) The Java EE 6Tutorial, Oracle, 2013		

<b>Course:</b> <b>USCS507</b>	<b>TOPICS (Credits : 03 Lectures/Week: 03)</b> <b>Game Programming</b>	
<b>Objectives:</b> Learner should get the understanding computer Graphics programming using Directx or Opengl. Along with the VR and AR they should also aware of GPU, newer technologies and programming using most important API for windows. <b>Expected Learning Outcomes:</b> Learner should study Graphics and gamming concepts with present working style of developers where everything remains on internet and they need to review it, understand it, be a part of community and learn.		
<b>Unit I</b>	<b>Mathematics for Computer Graphics, DirectX Kickstart:</b>  <b>Cartesian Coordinate system:</b> The Cartesian XY-plane, Function Graphs, Geometric Shapes, Polygonal Shapes, Areas of Shapes, Theorem of Pythagoras in 2D, Coordinates, Theorem of Pythagoras in 3D, 3D Polygons, Euler's Rule  <b>Vectors:</b> Vector Manipulation, multiplying a Vector by a Scalar, Vector Addition and Subtraction, Position Vectors, Unit Vectors, Cartesian Vectors, Vector Multiplication, Scalar Product, Example of the Dot Product, The Dot Product in Lighting Calculations, The Dot Product in Back-Face Detection, The Vector Product, The Right-Hand Rule, deriving a Unit Normal Vector for a Triangle Areas, Calculating 2D Areas  <b>Transformations:</b> 2D Transformations, Matrices, Homogeneous Coordinates, 3D Transformations, Change of Axes, Direction Cosines, rotating a Point about an Arbitrary Axis, Transforming Vectors, Determinants, Perspective Projection, Interpolation  <b>DirectX:</b> Understanding GPU and GPU architectures. How they are different from CPU Architectures? Understanding how to solve by GPU?	<b>15L</b>



Unit II	<p><b>DirectX Pipeline and Programming:</b></p> <p><b>Introduction To DirectX 11:</b> COM, Textures and Resources Formats, The swap chain and Page flipping, Depth Buffering, Texture Resource Views, Multisampling Theory and MS in Direct3D, Feature Levels</p> <p><b>Direct3D 11 Rendering Pipeline:</b> Overview, Input Assembler Stage (IA), Vertex Shader Stage (VS), The Tessellation Stage (TS), Geometry Shader Stage (GS), Pixel Shader Stage (PS), Output merger Stage (OM)</p> <p>Understanding Meshes or Objects, Texturing, Lighting, Blending.</p> <p><b>Interpolation and Character Animation:</b></p> <p><b>Trigonometry:</b> The Trigonometric Ratios, Inverse Trigonometric Ratios, Trigonometric Relationships, The Sine Rule, The Cosine Rule, Compound Angles, Perimeter Relationships</p> <p><b>Interpolation:</b> Linear Interpolant, Non-Linear Interpolation, Trigonometric Interpolation, Cubic Interpolation, Interpolating Vectors, Interpolating Quaternions</p> <p><b>Curves:</b> Circle, Bezier, B-Splines</p> <p><b>Analytic Geometry:</b> Review of Geometry, 2D Analytic Geometry, Intersection Points, Point in Triangle, and Intersection of circle with straight line.</p>	15L
Unit III	<p><b>Introduction to Rendering Engines:</b> Understanding the current market Rendering Engines. Understanding AR, VR and MR. Depth Mappers, Mobile Phones, Smart Glasses, HMD's</p> <p><b>Unity Engine: Multi-platform publishing, VR + AR:</b> Introduction and working in Unity, 2D, Graphics, Physics, Scripting, Animation, Timeline, Multiplayer and Networking, UI, Navigation and Pathfinding, XR, Publishing.</p> <p><b>Scripting:</b> Scripting Overview, Scripting Tools and Event Overview</p> <p><b>XR:</b> VR, AR, MR, Conceptual Differences. SDK, Devices</p>	15L
<p><b>Text Book(s):</b></p> <ol style="list-style-type: none"> <li>1) Mathematics for Computer Graphics, John Vince, Springer-Verlag London, 5<sup>th</sup> Edition, 2017</li> <li>2) Mathematics for 3D Game Programming and Computer Graphic, Eric Lengyel, Delmar</li> </ol>		

Cengage Learning, Delmar Cengage Learning,2011

- 3) Introduction To 3D Game Programming With DirectX® 11, Frank D Luna, Mercury Learning And Information,2012.
- 4) <https://docs.unity3d.com/Manual/index.html> - Free

**Additional Reference(s):**

- 1) Computer Graphics, C Version, Donald Hern and Pauline Baker, Pearson Education, 2<sup>nd</sup> Edition, 1997
- 2) HLSL Development Cookbook, Doron Feinstein, PACKT Publishing,2013

## Suggested List of Practical- SEMESTER V

<b>Course:</b> <b>USCSP501</b>	<b>(Credits : 02 Lectures/Week: 06)</b> <b>Practical of Elective-I</b>	
<b>USCS501: Artificial Intelligence</b>		
<p><b><i>Practical shall be implemented in LISP</i></b></p> <ol style="list-style-type: none"> <li>1. Implement Breadth first search algorithm for Romanian map problem.</li> <li>2. Implement Iterative deep depth first search for Romanian map problem.</li> <li>3. Implement A* search algorithm for Romanian map problem.</li> <li>4. Implement recursive best-first search algorithm for Romanian map problem.</li> <li>5. Implement decision tree learning algorithm for the restaurant waiting problem.</li> <li>6. Implement feed forward back propagation neural network learning algorithm for the restaurant waiting problem.</li> <li>7. Implement Adaboost ensemble learning algorithm for the restaurant waiting problem.</li> <li>8. Implement Naive Bayes' learning algorithm for the restaurant waiting problem.</li> <li>9. Implement passive reinforcement learning algorithm based on adaptive dynamic programming (ADP) for the 3 by 4 world problem</li> <li>10. Implement passive reinforcement learning algorithm based on temporal differences (TD) for 3 by 4 world problem.</li> </ol>		
<b>USCS502: Linux Server Administration</b>		
<p><b><i>- Practical shall be performed using any Linux Server (with 8GB RAM).</i></b></p> <p><b><i>- Internet connection will be required so that Linux server (command line mode) can be connected to Internet.</i></b></p> <ol style="list-style-type: none"> <li>1. Install DHCP Server in Ubuntu 16.04</li> <li>2. Initial settings: Add a User, Network Settings, Change to static IP address, Disable IPv6 if not needed, Configure Services, display the list of services which are running, Stop and turn OFF auto-start setting for a service if you don't need it, Sudo Settings</li> <li>3. Configure NTP Server (NTPd), Install and Configure NTPd, Configure NTP Client (Ubuntu and Windows)</li> <li>4. SSH Server : Password Authentication</li> </ol>		

Configure SSH Server to manage a server from the remote computer, SSH Client : (Ubuntu and Windows)

5. Install DNS Server BIND, Configure DNS server which resolves domain name or IP address, Install BIND 9, Configure BIND, Limit ranges you allow to access if needed.
6. Configure DHCP Server, Configure DHCP (Dynamic Host Configuration Protocol) Server, Configure NFS Server to share directories on your Network, Configure NFS Client. (Ubuntu and Windows Client OS)
7. Configure LDAP Server, Configure LDAP Server in order to share users' accounts in your local networks, Add LDAP User Accounts in the OpenLDAP Server, Configure LDAP Client in order to share users' accounts in your local networks. Install phpLDAPadmin to operate LDAP server via Web browser.
8. Configure NIS Server in order to share users' accounts in your local networks, Configure NIS Client to bind NIS Server.
9. Install MySQL to configure database server, Install phpMyAdmin to operate MySQL on web browser from Clients.
10. Install Samba to share folders or files between Windows and Linux.

### **USCS503: Software Testing and Quality Assurance**

1. Install Selenium IDE; Write a test suite containing minimum 4 test cases for different formats.
2. Conduct a test suite for any two web sites.
3. Install Selenium server (Selenium RC) and demonstrate it using a script in Java/PHP.
4. Write and test a program to login a specific web page.
5. Write and test a program to update 10 student records into table into Excel file
6. Write and test a program to select the number of students who have scored more than 60 in any one subject (or all subjects).
7. Write and test a program to provide total number of objects present / available on the page.
8. Write and test a program to get the number of items in a list / combo box.
9. Write and test a program to count the number of check boxes on the page checked and unchecked count.
10. Load Testing using JMeter, Android Application testing using Appium Tools, Bugzilla Bug tracking tools.

<b>Course:</b> <b>USCSP502</b>	<b>(Credits : 02 Lectures/Week: 06)</b> <b>Practical of Elective-II</b>	
<b>USCS504: Information and Network security</b>		
<ol style="list-style-type: none"> <li>1. Write programs to implement the following Substitution Cipher Techniques: <ul style="list-style-type: none"> <li>- Caesar Cipher</li> <li>- Monoalphabetic Cipher</li> </ul> </li> <li>2 Write programs to implement the following Substitution Cipher Techniques: <ul style="list-style-type: none"> <li>- Vernam Cipher</li> <li>- Playfair Cipher</li> </ul> </li> <li>3 Write programs to implement the following Transposition Cipher Techniques: <ul style="list-style-type: none"> <li>- Rail Fence Cipher</li> <li>- Simple Columnar Technique</li> </ul> </li> <li>4 Write program to encrypt and decrypt strings using <ul style="list-style-type: none"> <li>- DES Algorithm</li> <li>- AES Algorithm</li> </ul> </li> <li>5 Write a program to implement RSA algorithm to perform encryption / decryption of a given string.</li> <li>6 Write a program to implement the Diffie-Hellman Key Agreement algorithm to generate symmetric keys.</li> <li>7 Write a program to implement the MD5 algorithm compute the message digest.</li> <li>8 Write a program to calculate HMAC-SHA1 Signature</li> <li>9 Write a program to implement SSL.</li> <li>10 Configure Windows Firewall to block: <ul style="list-style-type: none"> <li>- A port</li> <li>- An Program</li> <li>- A website</li> </ul> </li> </ol>		
<b>USCS505: Architecting of IoT</b>		
<ol style="list-style-type: none"> <li>1. a) Edit text files with nano and cat editor, Learn sudo privileges and Unix shell commands such as cd , ls , cat, etc</li> </ol>		

b) Learn to set dynamic and static IP. Connect to an Ethernet and WiFi network.

Learn to vnc and ssh into a raspberry pi using vnc and putty from a different computer on the network.

c) Write a basic bash script to open programs in kiosk mode. Learn how to autostart programs on boot.

2. Run the node red editor and run simple programs and trigger gpios. Use basic nodes such as inject, debug, gpio

3. Open the python idle editor and run simple Python scripts such as to print Fibonacci numbers, string functions. Learn how to install modules using Pip and write functions

4. Setup a physical button switch and trigger an led in node red and python w debounce

5. Write simple JavaScript functions in Node-Red simple HTTP server page using node red

6. Setup a TCP server and client on a raspberry pi using Python modules to send messages and execute shell commands from within python such as starting another application

7. Trigger a set of led Gpios on the pi via a Python Flask web server

8. Interface the raspberry pi with a 16x2 LCD display and print values.

9. Setup a Mosquitto MQTT server and client and write a Python script to communicate data between Pi's.

10. Interface with an Accelerometer Gyro Mpu6050 on the i2c bus and send sensor values over the internet via mqtt.

### **USCS506: Web Services**

1. Write a program to implement to create a simple web service that converts the temperature from Fahrenheit to Celsius and vice versa.

2. Write a program to implement the operation can receive request and will return a response in two ways. a) One - Way operation b) Request –Response

3. Write a program to implement business UDDI Registry entry.

4. Develop client which consumes web services developed in different platform.

5. Write a JAX-WS web service to perform the following operations. Define a Servlet / JSP that consumes the web service.

6. Define a web service method that returns the contents of a database in a JSON string. The contents should be displayed in a tabular format.

7. Define a RESTful web service that accepts the details to be stored in a database and performs

<p>CRUD operation.</p> <p>8. Implement a typical service and a typical client using WCF.</p> <p>9. Use WCF to create a basic ASP.NET Asynchronous JavaScript and XML (AJAX) service.</p> <p>10. Demonstrates using the binding attribute of an endpoint element in WCF.</p>		
<p><b>Course:</b></p> <p><b>USCSP503</b></p>	<p><b>(Credits : 01 Lectures/Week: 03)</b></p> <p><b>Project Implementation</b></p>	
<p><i>Please Refer to Project Implementation Guidelines</i></p>		
<p><b>Course:</b></p> <p><b>USCSP504</b></p>	<p><b>(Credits : 01 Lectures/Week: 03)</b></p> <p><b>Practical of Skill Enhancement</b></p>	
<p><b>USCS507 : Game Programming</b></p>		
<ol style="list-style-type: none"> <li>1. Setup DirectX 11, Window Framework and Initialize Direct3D Device</li> <li>2. Buffers, Shaders and HLSL (Draw a triangle using Direct3D 11)</li> <li>3. Texturing (Texture the Triangle using Direct 3D 11)</li> <li>4. Lightning (Programmable Diffuse Lightning using Direct3D 11)</li> <li>5. Specular Lightning (Programmable Spot Lightning using Direct3D 11)</li> <li>6. Loading models into DirectX 11 and rendering.</li> </ol> <p><b>Perform following Practical using online content from the Unity Tutorials Web--sites:</b></p> <p><b><a href="https://unity3d.com/learn/tutorials/s/interactive-tutorials">https://unity3d.com/learn/tutorials/s/interactive-tutorials</a></b></p> <ol style="list-style-type: none"> <li>7. <a href="https://unity3d.com/learn/tutorials/s/2d-ufo-tutorial">https://unity3d.com/learn/tutorials/s/2d-ufo-tutorial</a></li> <li>8. <a href="https://unity3d.com/learn/tutorials/s/space-shooter-tutorial">https://unity3d.com/learn/tutorials/s/space-shooter-tutorial</a></li> <li>9. <a href="https://unity3d.com/learn/tutorials/s/roll-ball-tutorial">https://unity3d.com/learn/tutorials/s/roll-ball-tutorial</a></li> <li>10. <a href="https://unity3d.com/learn/tutorials/topics/vr/introduction?playlist=22946">https://unity3d.com/learn/tutorials/topics/vr/introduction?playlist=22946</a></li> </ol>		

## SEMESTER VI

### THEORY

<b>Course:</b> <b>USCS601</b>	<b>TOPICS (Credits : 03 Lectures/Week: 03)</b> <b>Wireless Sensor Networks and Mobile Communication</b>	
<b>Objectives:</b> In this era of wireless and adhoc network, connecting different wireless devices and understanding their compatibility is very important. Information is gathered in many different ways from these devices. Learner should be able to conceptualize and understand the framework. On completion, will be able to have a firm grip over this very important segment of wireless network. <b>Expected Learning Outcomes:</b> After completion of this course, learner should be able to list various applications of wireless sensor networks, describe the concepts, protocols, design, implementation and use of wireless sensor networks. Also implement and evaluate new ideas for solving wireless sensor network design issues.		
<b>Unit I</b>	<b>Introduction:</b> Introduction to Sensor Networks, unique constraints and challenges. Advantage of Sensor Networks, Applications of Sensor Networks, Mobile Adhoc NETWORKS (MANETs) and Wireless Sensor Networks, Enabling technologies for Wireless Sensor Networks. <b>Sensor Node Hardware and Network Architecture:</b> Single-node architecture, Hardware components & design constraints, Operating systems and execution environments, introduction to TinyOS and nesC. Network architecture, Optimization goals and figures of merit, Design principles for WSNs, Service interfaces of WSNs, Gateway concepts.	<b>15L</b>
<b>Unit II</b>	<b>Medium Access Control Protocols:</b> Fundamentals of MAC Protocols, MAC Protocols for WSNs, Sensor-MAC Case Study. <b>Routing Protocols :</b> Data Dissemination and Gathering, Routing Challenges and Design Issues in Wireless Sensor Networks, Routing Strategies in Wireless Sensor Networks. <b>Transport Control Protocols :</b> Traditional Transport Control Protocols,	<b>15L</b>



	Transport Protocol Design Issues, Examples of Existing Transport Control Protocols, Performance of Transport Control Protocols.	
<b>Unit III</b>	<p><b>Introduction, Wireless Transmission and Medium Access Control:</b> Applications, A short history of wireless communication.</p> <p><b>Wireless Transmission:</b> Frequency for radio transmission, Signals, Antennas, Signal propagation, Multiplexing, Modulation, Spread spectrum, Cellular systems.</p> <p><b>Telecommunication, Satellite and Broadcast Systems: GSM:</b> Mobile services, System architecture, Radio interface, Protocols, Localization And Calling, Handover, security, New data services; DECT: System architecture, Protocol architecture; ETRA, UMTS and IMT- 2000.</p> <p>Satellite Systems: History, Applications, Basics: GEO, LEO, MEO; Routing, Localization, Handover.</p>	<b>15L</b>
<p><b>Textbook(s):</b></p> <ol style="list-style-type: none"> <li>1) Protocols and Architectures for Wireless Sensor Network, Holger Kerl, Andreas Willig, John Wiley and Sons, 2005</li> <li>2) Wireless Sensor Networks Technology, Protocols, and Applications ,Kazem Sohraby, Daniel Minoli and TaiebZnati, John Wiley &amp; Sons, 2007</li> <li>3) Mobile communications, Jochen Schiller,2<sup>nd</sup> Edition, Addison wisely , Pearson Education,2012</li> </ol> <p><b>Additional Reference(s):</b></p> <ol style="list-style-type: none"> <li>1) Fundamentals of Wireless Sensor Networks, Theory and Practice, Waltenegus Dargie, Christian Poellabauer , Wiley Series on wireless Communication and Mobile Computing, 2011</li> <li>2) Networking Wireless Sensors, Bhaskar Krishnamachari , Cambridge University Press, 2005</li> </ol>		

<b>Course:</b> <b>USCS602</b>	<b>TOPICS (Credits : 03 Lectures/Week: 03)</b> <b>Cloud Computing</b>	
<b>Objectives:</b> To provide learners with the comprehensive and in-depth knowledge of Cloud Computing concepts, technologies, architecture, implantations and applications. To expose the learners to frontier areas of Cloud Computing, while providing sufficient foundations to enable further study and research.		
<b>Expected Learning Outcomes:</b> After successfully completion of this course, learner should be able to articulate the main concepts, key technologies, strengths, and limitations of cloud computing and the possible applications for state-of-the-art cloud computing using open source technology. Learner should be able to identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc. They should explain the core issues of cloud computing such as security, privacy, and interoperability.		
<b>Unit I</b>	Introduction to Cloud Computing, Characteristics and benefits of Cloud Computing, Basic concepts of Distributed Systems, Web 2.0, Service-Oriented Computing, Utility-Oriented Computing. Elements of Parallel Computing. Elements of Distributed Computing. Technologies for Distributed Computing. Cloud Computing Architecture. The cloud reference model. Infrastructure as a service. Platform as a service. Software as a service. Types of clouds.	<b>15L</b>
<b>Unit II</b>	Characteristics of Virtualized Environments. Taxonomy of Virtualization Techniques. Virtualization and Cloud Computing. Pros and Cons of Virtualization. Virtualization using KVM, Creating virtual machines, oVirt - management tool for virtualization environment. Open challenges of Cloud Computing	<b>15L</b>
<b>Unit III</b>	Introduction to OpenStack, OpenStack test-drive, Basic OpenStack operations, OpenStack CLI and APIs, Tenant model operations, Quotas, Private cloud building blocks, Controller deployment, Networking deployment, Block Storage deployment, Compute deployment, deploying and utilizing OpenStack in production environments, Building a production environment, Application orchestration using OpenStack Heat	<b>15L</b>

**Textbook(s):**

- 1) Mastering Cloud Computing, Rajkumar Buyya, Christian Vecchiola, S Thamarai Selvi, Tata McGraw Hill Education Private Limited, 2013
- 2) OpenStack in Action, V. K. CODY BUMGARDNER, Manning Publications Co, 2016

**Additional Reference(s):**

- 1) OpenStack Essentials, Dan Radez, PACKT Publishing, 2015
- 2) OpenStack Operations Guide, Tom Fifield, Diane Fleming, Anne Gentle, Lorin Hochstein, Jonathan Proulx, Everett Toews, and Joe Topjian, O'Reilly Media, Inc., 2014
- 3) <https://www.openstack.org>

**Course:****TOPICS (Credits :03 Lectures/Week:03)****USCS603****Cyber Forensics****Objectives:**

To understand the procedures for identification, preservation, and extraction of electronic evidence, auditing and investigation of network and host system intrusions, analysis and documentation of information gathered

**Expected Learning Outcomes :**

The student will be able to plan and prepare for all stages of an investigation - detection, initial response and management interaction, investigate various media to collect evidence, report them in a way that would be acceptable in the court of law.

**Unit I****Computer Forensics :**

Introduction to Computer Forensics and standard procedure, Incident Verification and System Identification ,Recovery of Erased and damaged data, Disk Imaging and Preservation, Data Encryption and Compression, Automated Search Techniques, Forensics Software

**Network Forensic :**

Introduction to Network Forensics and tracking network traffic, Reviewing Network Logs, Network Forensics Tools, Performing Live Acquisitions, Order of Volatility, Standard Procedure

**Cell Phone and Mobile Device Forensics:** Overview, Acquisition Procedures for Cell Phones and Mobile Devices

**15L**

<b>Unit II</b>	<b>Internet Forensic :</b> <b>Introduction</b> to Internet Forensics, World Wide Web Threats, Hacking and Illegal access, Obscene and Incident transmission, Domain Name Ownership Investigation, Reconstructing past internet activities and events <b>E-mail Forensics :</b> e-mail analysis, e-mail headers and spoofing, Laws against e-mail Crime, <b>Messenger Forensics:</b> Yahoo Messenger <b>Social Media Forensics:</b> Social Media Investigations <b>Browser Forensics:</b> Cookie Storage and Analysis, Analyzing Cache and temporary internet files, Web browsing activity reconstruction	<b>15L</b>
<b>Unit III</b>	<b>Investigation, Evidence presentation and Legal aspects of Digital Forensics:</b> Authorization to collect the evidence , Acquisition of Evidence, Authentication of the evidence, Analysis of the evidence, Reporting on the findings, Testimony <b>Introduction to Legal aspects of Digital Forensics:</b> Laws & regulations, Information Technology Act, Giving Evidence in court, Case Study – Cyber Crime cases, Case Study – Cyber Crime cases	<b>15L</b>
<b>Textbook(s):</b> 1. Guide to computer forensics and investigations, Bill Nelson, Amelia Philips and Christopher Steuart, course technology, 5th Edition, 2015  <b>Additional Reference(s):</b> 2. Incident Response and computer forensics, Kevin Mandia, Chris Proise, Tata McGrawHill, 2 <sup>nd</sup> Edition, 2003		

<b>Course:</b> <b>USCS604</b>	<b>TOPICS (Credits : 03 Lectures/Week: 03)</b> <b>Information Retrieval</b>	
<b>Objectives:</b> To provide an overview of the important issues in classical and web information retrieval. The focus is to give an up-to-date treatment of all aspects of the design and implementation of systems for gathering, indexing, and searching documents and of methods for evaluating systems.		
<b>Expected Learning Outcomes:</b>		

After completion of this course, learner should get an understanding of the field of information retrieval and its relationship to search engines. It will give the learner an understanding to apply information retrieval models.

<b>Unit I</b>	<b>Introduction to Information Retrieval:</b> Introduction, History of IR, Components of IR, and Issues related to IR, Boolean retrieval, Dictionaries and tolerant retrieval.	<b>15L</b>
<b>Unit II</b>	<b>Link Analysis and Specialized Search:</b> Link Analysis, hubs and authorities, Page Rank and HITS algorithms, Similarity, Hadoop & Map Reduce, Evaluation, Personalized search, Collaborative filtering and content-based recommendation of documents and products, handling “invisible” Web, Snippet generation, Summarization, Question Answering, Cross- Lingual Retrieval.	<b>15L</b>
<b>Unit III</b>	<b>Web Search Engine:</b> Web search overview, web structure, the user, paid placement, search engine optimization/spam, Web size measurement, search engine optimization/spam, Web Search Architectures. <b>XML retrieval:</b> Basic XML concepts, Challenges in XML retrieval, A vector space model for XML retrieval, Evaluation of XML retrieval, Text-centric versus data-centric XML retrieval.	<b>15L</b>

**Text book(s):**

- 1) Introduction to Information Retrieval, C. Manning, P. Raghavan, and H. Schütze, Cambridge University Press, 2008
- 2) Modern Information Retrieval: The Concepts and Technology behind Search, Ricardo Baeza -Yates and Berthier Ribeiro – Neto, 2<sup>nd</sup> Edition, ACM Press Books 2011.
- 3) Search Engines: Information Retrieval in Practice, Bruce Croft, Donald Metzler and Trevor Strohman, 1<sup>st</sup> Edition, Pearson, 2009.

**Additional Reference(s):**

- 1) Information Retrieval Implementing and Evaluating Search Engines, Stefan Büttcher, Charles L. A. Clarke and Gordon V. Cormack, The MIT Press; Reprint edition (February 12, 2016)

<b>Course:</b> <b>USCS605</b>	<b>TOPICS (Credits : 03 Lectures/Week: 03)</b> <b>Digital Image Processing</b>	
<b>Objectives:</b> To study two-dimensional Signals and Systems. To understand image fundamentals and transforms necessary for image processing. To study the image enhancement techniques in spatial and frequency domain. To study image segmentation and image compression techniques.		
<b>Expected Learning Outcomes:</b> Learner should review the fundamental concepts of a digital image processing system. Analyze the images in the frequency domain using various transforms. Evaluate the techniques for image enhancement and image segmentation. Apply various compression techniques. They will be familiar with basic image processing techniques for solving real problems.		
<b>Unit I</b>	<b>Introduction to Image-processing System :</b> Introduction, Image Sampling, Quantization, Resolution, Human Visual Systems, Elements of an Image-processing System, Applications of Digital Image Processing  <b>2D Signals and Systems :</b> 2D signals, separable sequence, periodic sequence, 2D systems, classification of 2D systems, 2D Digital filter  <b>Convolution and Correlation :</b> 2D Convolution through graphical method, Convolution through 2D Z—transform, 2D Convolution through matrix analysis, Circular Convolution, Applications of Circular Convolution, 2D Correlation  <b>Image Transforms:</b> Need for transform, image transforms, Fourier transform, 2D Discrete Fourier Transform, Properties of 2D DFT, Importance of Phase, Walsh transform, Hadamard transform, Haar transform, Slant transform, Discrete Cosine transform, KL transform	<b>15L</b>
<b>Unit II</b>	<b>Image Enhancement :</b> Image Enhancement in spatial domain, Enhancement through Point operations, Histogram manipulation, Linear and nonlinear Gray Level Transformation, local or neighborhood operation, Median Filter, Spatial domain High pass filtering, Bit-plane slicing, Image Enhancement in frequency domain, Homomorphic filter, Zooming operation, Image Arithmetic	<b>15L</b>

	<b>Binary Image processing</b> :Mathematical morphology, Structuring elements, Morphological image processing, Logical operations, Morphological operations, Dilation and Erosion, Distance Transform <b>Colour Image processing</b> :Colour images, Colour Model, Colour image quantization, Histogram of a colour image	
<b>Unit III</b>	<b>Image Segmentation:</b> Image segmentation techniques, Region approach, Clustering techniques, Thresholding, Edge-based segmentation, Edge detection, Edge Linking, Hough Transform <b>Image Compression:</b> Need for image compression, Redundancy in images, Image-compression scheme, Fundamentals of Information Theory, Run-length coding, Shannon-Fano coding, Huffman Coding, Arithmetic Coding, Transform-based compression, Image-compression standard	<b>15L</b>
<b>Textbook(s):</b> 1) Digital Image Processing, S Jayaraman, S Esakkirajan, T Veerakumar,Tata McGraw-Hill Education Pvt. Ltd., 2009 <b>Additional Reference(s):</b> 1) Digital Image Processing 3rd Edition, Rafael C Gonzalez, Richard E Woods, Pearson, 2008 2) Scilab Textbook Companion for Digital Image Processing, S. Jayaraman, S. Esakkirajan And T. Veerakumar, 2016 ( <a href="https://scilab.in/textbook_companion/generate_book/125">https://scilab.in/textbook_companion/generate_book/125</a> )		
<b>Course:</b> <b>USCS606</b>	<b>TOPICS (Credits : 03 Lectures/Week: 03)</b> <b>Data Science</b>	
<b>Objectives:</b> Understanding basic data science concepts. Learning to detect and diagnose common data issues, such as missing values, special values, outliers, inconsistencies, and localization. Making aware of how to address advanced statistical situations, Modeling and Machine Learning. <b>Expected Learning Outcomes:</b> After completion of this course, the students should be able to understand & comprehend the problem; and should be able to define suitable statistical method to be adopted.		
<b>Unit I</b>	<b>Introduction to Data Science:</b> What is Data? Different kinds of data,	<b>15L</b>

	<p>Introduction to high level programming language + Integrated Development Environment (IDE), Exploratory Data Analysis (EDA) + Data Visualization, Different types of data sources,</p> <p><b>Data Management:</b> Data Collection, Data cleaning/extraction, Data analysis &amp; Modeling</p>	
<b>Unit II</b>	<p><b>Data Curation:</b> Query languages and Operations to specify and transform data, Structured/schema based systems as users and acquirers of data</p> <p>Semi-structured systems as users and acquirers of data, Unstructured systems in the acquisition and structuring of data, Security and ethical considerations in relation to authenticating and authorizing access to data on remote systems, Software development tools, Large scale data systems, Amazon Web Services (AWS)</p>	<b>15L</b>
<b>Unit III</b>	<p><b>Statistical Modelling and Machine Learning:</b></p> <p>Introduction to model selection: Regularization, bias/variance tradeoff e.g. parsimony, AIC, BIC, Cross validation, Ridge regressions and penalized regression e.g. LASSO</p> <p><b>Data transformations:</b> Dimension reduction, Feature extraction, Smoothing and aggregating</p> <p><b>Supervised Learning:</b> Regression, linear models, Regression trees, Time-series Analysis, Forecasting, Classification: classification trees, Logistic regression, separating hyperplanes, k-NN</p> <p><b>Unsupervised Learning:</b> Principal Components Analysis (PCA), k-means clustering, Hierarchical clustering, Ensemble methods</p>	<b>15L</b>
<p><b>Textbook(s):</b></p> <ol style="list-style-type: none"> <li>1) Doing Data Science, Rachel Schutt and Cathy O’Neil, O’Reilly,2013</li> <li>2) Mastering Machine Learning with R, Cory Lesmeister, PACKT Publication,2015</li> </ol> <p><b>Additional Reference(s):</b></p> <ol style="list-style-type: none"> <li>1) Hands-On Programming with R, Garrett Golemund,1<sup>st</sup> Edition, 2014</li> <li>2) An Introduction to Statistical Learning, James, G., Witten, D., Hastie, T., Tibshirani, R.,Springer,2015</li> </ol>		



<b>Course:</b> <b>USCS607</b>	<b>TOPICS (Credits : 02 Lectures/Week: 03)</b> <b>Ethical Hacking</b>	
<b>Objectives:</b> To understand the ethics, legality, methodologies and techniques of hacking.		
<b>Expected Learning Outcomes:</b> Learner will know to identify security vulnerabilities and weaknesses in the target applications. They will also know to test and exploit systems using various tools and understand the impact of hacking in real time machines.		
<b>Unit I</b>	<b>Information Security : Attacks and Vulnerabilities</b> <b>Introduction to information security :</b> Asset, Access Control, CIA, Authentication, Authorization, Risk, Threat, Vulnerability, Attack, Attack Surface, Malware, Security-Functionality-Ease of Use Triangle <b>Types of malware :</b> Worms, viruses, Trojans, Spyware, Rootkits <b>Types of vulnerabilities :</b> OWASP Top 10 : cross-site scripting (XSS), cross site request forgery (CSRF/XSRF), SQL injection, input parameter manipulation, broken authentication, sensitive information disclosure, XML External Entities, Broken access control, Security Misconfiguration, Using components with known vulnerabilities, Insufficient Logging and monitoring, OWASP Mobile Top 10, CVE Database <b>Types of attacks and their common prevention mechanisms :</b> Keystroke Logging, Denial of Service (DoS /DDoS), Waterhole attack, brute force, phishing and fake WAP, Eavesdropping, Man-in-the-middle, Session Hijacking, Clickjacking, Cookie Theft, URL Obfuscation, buffer overflow, DNS poisoning, ARP poisoning, Identity Theft, IoT Attacks, BOTs and BOTNETs <b>Case-studies :</b> Recent attacks – Yahoo, Adult Friend Finder, eBay, Equifax, WannaCry, Target Stores, Uber, JP Morgan Chase, Bad Rabbit	<b>15L</b>
<b>Unit II</b>	<b>Ethical Hacking – I (Introduction and pre-attack)</b> <b>Introduction:</b> Black Hat vs. Gray Hat vs. White Hat (Ethical) hacking, Why is Ethical hacking needed?, How is Ethical hacking different from security auditing and digital forensics?, Signing NDA, Compliance and Regulatory	<b>15L</b>

	<p>concerns, Black box vs. White box vs. Black box, Vulnerability assessment and Penetration Testing.</p> <p><b>Approach : Planning</b> - Threat Modeling, set up security verification standards, Set up security testing plan – When, which systems/apps, understanding functionality, black/gray/white, authenticated vs. unauthenticated, internal vs. external PT, Information gathering, Perform Manual and automated (Tools: WebInspect/Qualys, Nessus, Proxies, Metasploit) VA and PT, How WebInspect/Qualys tools work: Crawling/Spidering, requests forging, pattern matching to known vulnerability database and Analyzing results, Preparing report, Fixing security gaps following the report</p> <p><b>Enterprise strategy</b> : Repeated PT, approval by security testing team, Continuous Application Security Testing,</p> <p><b>Phases:</b> Reconnaissance/foot-printing/Enumeration, <b>Phases:</b> Scanning, Sniffing</p>	
<b>Unit III</b>	<p><b>Ethical Hacking :Enterprise Security</b></p> <p><b>Phases : Gaining and Maintaining Access : Systems hacking</b> – Windows and Linux – Metasploit and Kali Linux, Keylogging, Buffer Overflows, Privilege Escalation, Network hacking - ARP Poisoning, Password Cracking, WEP Vulnerabilities, MAC Spoofing, MAC Flooding, IPSpoofing, SYN Flooding, Smurf attack, <b>Applications hacking</b> : SMTP/Email-based attacks, VOIP vulnerabilities, Directory traversal, Input Manipulation, Brute force attack, Unsecured login mechanisms, SQL injection, XSS, Mobile apps security, <b>Malware analysis</b> : Netcat Trojan, wrapping definition, reverse engineering</p> <p><b>Phases</b> : Covering your tracks : Steganography, Event Logs alteration</p> <p><b>Additional Security Mechanisms</b> : IDS/IPS, Honeypots and evasion techniques, Secure Code Reviews (Fortify tool, OWASP Secure Coding Guidelines)</p>	<b>15L</b>
<p><b>Textbook(s):</b></p> <ol style="list-style-type: none"> <li>1) Certified Ethical Hacker Study Guide v9, Sean-Philip Oriyano, Sybex; Study Guide Edition,2016</li> <li>2) CEH official Certified Ethical Hacking Review Guide, Wiley India Edition, 2007</li> </ol> <p><b>Additional Reference(s):</b></p>		

- 1) Certified Ethical Hacker: Michael Gregg, Pearson Education, 1<sup>st</sup> Edition, 2013
- 2) Certified Ethical Hacker: Matt Walker, TMH, 2011
- 3) [http://www.pentest-standard.org/index.php/PTES\\_Technical\\_Guidelines](http://www.pentest-standard.org/index.php/PTES_Technical_Guidelines)
- 4) [https://www.owasp.org/index.php/Category:OWASP\\_Top\\_Ten\\_2017\\_Project](https://www.owasp.org/index.php/Category:OWASP_Top_Ten_2017_Project)
- 5) [https://www.owasp.org/index.php/Mobile\\_Top\\_10\\_2016-Top\\_10](https://www.owasp.org/index.php/Mobile_Top_10_2016-Top_10)
- 6) [https://www.owasp.org/index.php/OWASP\\_Testing\\_Guide\\_v4\\_Table\\_of\\_Contents](https://www.owasp.org/index.php/OWASP_Testing_Guide_v4_Table_of_Contents)
- 7) [https://www.owasp.org/index.php/OWASP\\_Secure\\_Coding\\_Practices\\_-\\_Quick\\_Reference\\_Guide](https://www.owasp.org/index.php/OWASP_Secure_Coding_Practices_-_Quick_Reference_Guide)
- 8) <https://cve.mitre.org/>
- 9) <https://access.redhat.com/blogs/766093/posts/2914051>
- 10) <http://resources.infosecinstitute.com/applications-threat-modeling/#gref>
- 11) <http://www.vulnerabilityassessment.co.uk/Penetration%20Test.html>

## Suggested List of Practical – SEMESTER VI

<b>Course:</b> <b>USCSP601</b>	<b>(Credits : 02 Lectures/Week:06)</b> <b>Practical of Elective-I</b>	
<b>USCS601: Wireless Sensor Networks and Mobile Communication</b>		
<p><i>Practical experiments require software tools like INET Framework for OMNeT++, NetSim , TOSSIM, Cisco packet tracer 6.0 and higher version.</i></p> <ol style="list-style-type: none"> <li>1. Understanding the Sensor Node Hardware. (For Eg. Sensors, Nodes(Sensor mote), Base Station, Graphical User Interface.)</li> <li>2. Exploring and understanding TinyOS computational concepts:- Events, Commands and Task. <ul style="list-style-type: none"> <li>- nesC model</li> <li>- nesC Components</li> </ul> </li> <li>3. Understanding TOSSIM for <ul style="list-style-type: none"> <li>- Mote-mote radio communication</li> <li>- Mote-PC serial communication</li> </ul> </li> <li>4. Create and simulate a simple adhoc network</li> <li>5. Understanding, Reading and Analyzing Routing Table of a network.</li> <li>6. Create a basic MANET implementation simulation for Packet animation and Packet Trace.</li> <li>7. Implement a Wireless sensor network simulation.</li> <li>8. Create MAC protocol simulation implementation for wireless sensor Network.</li> <li>9. Simulate Mobile Adhoc Network with Directional Antenna</li> <li>10. Create a mobile network using Cell Tower, Central Office Server, Web browser and Web Server. Simulate connection between them.</li> </ol>		
<b>USCS602: Cloud Computing</b>		
<ol style="list-style-type: none"> <li>1. Study and implementation of Infrastructure as a Service.</li> <li>2. Installation and Configuration of virtualization using KVM.</li> <li>3. Study and implementation of Infrastructure as a Service</li> <li>4. Study and implementation of Storage as a Service</li> <li>5. Study and implementation of identity management</li> <li>6. Study Cloud Security management</li> </ol>		

7. Write a program for web feed.
8. Study and implementation of Single-Sign-On.
9. User Management in Cloud.
10. Case study on Amazon EC2/Microsoft Azure/Google Cloud Platform

### **USCS603: Cyber Forensics**

1. Creating a Forensic Image using FTK Imager/Encase Imager :
  - Creating Forensic Image
  - Check Integrity of Data
  - Analyze Forensic Image
2. Data Acquisition:
  - Perform data acquisition using:
    - USB Write Blocker + Encase Imager
    - SATA Write Blocker + Encase Imager
    - Falcon Imaging Device
3. Forensics Case Study:
  - Solve the Case study (image file) provide in lab using Encase Investigator or Autopsy
4. Capturing and analyzing network packets using Wireshark (Fundamentals) :
  - Identification the live network
  - Capture Packets
  - Analyze the captured packets
5. Analyze the packets provided in lab and solve the questions using Wireshark :
  - What web server software is used by www.snopes.com?
  - About what cell phone problem is the client concerned?
  - According to Zillow, what instrument will Ryan learn to play?
  - How many web servers are running Apache?
  - What hosts (IP addresses) think that jokes are more entertaining when they are explained?
6. Using Sysinternals tools for Network Tracking and Process Monitoring :
  - Check Sysinternals tools

- Monitor Live Processes
- Capture RAM
- Capture TCP/UDP packets
- Monitor Hard Disk
- Monitor Virtual Memory
- Monitor Cache Memory
- 7. Recovering and Inspecting deleted files
  - Check for Deleted Files
  - Recover the Deleted Files
  - Analyzing and Inspecting the recovered files

Perform this using recovery option in ENCASE and also Perform manually through command line
- 8. Acquisition of Cell phones and Mobile devices
- 9. Email Forensics
  - Mail Service Providers
  - Email protocols
  - Recovering emails
  - Analyzing email header
- 10. Web Browser Forensics
  - Web Browser working
  - Forensics activities on browser
  - Cache / Cookies analysis
  - Last Internet activity

<b>Course:</b> <b>USCSP602</b>	<b>(Credits : 02 Lectures/Week:06)</b> <b>Practical of Elective-II</b>	
<b>USCS604: Information Retrieval</b>		
<p><i>Practical may be done using software/tools like Python / Java / Hadoop</i></p> <ol style="list-style-type: none"> <li>1. Write a program to demonstrate bitwise operation.</li> <li>2. Implement Page Rank Algorithm.</li> <li>3. Implement Dynamic programming algorithm for computing the edit distance between</li> </ol>		

strings s1 and s2. (Hint. Levenshtein Distance)

4. Write a program to Compute Similarity between two text documents.
5. Write a map-reduce program to count the number of occurrences of each alphabetic character in the given dataset. The count for each letter should be case-insensitive (i.e., include both upper-case and lower-case versions of the letter; Ignore non-alphabetic characters).
6. Implement a basic IR system using Lucene.
7. Write a program for Pre-processing of a Text Document: stop word removal.
8. Write a program for mining Twitter to identify tweets for a specific period and identify trends and named entities.
9. Write a program to implement simple web crawler.
10. Write a program to parse XML text, generate Web graph and compute topic specific page rank.

#### **USCS605: Digital Image Processing**

***Practical need to be performed using Scilab under Linux or Windows***

1. 2D Linear Convolution, Circular Convolution between two 2D matrices
2. Circular Convolution expressed as linear convolution plus alias
3. Linear Cross correlation of a 2D matrix, Circular correlation between two signals and Linear auto correlation of a 2D matrix, Linear Cross correlation of a 2D matrix
4. DFT of 4x4 gray scale image
5. Compute discrete cosine transform, Program to perform KL transform for the given 2D matrix
6. Brightness enhancement of an image, Contrast Manipulation, image negative
7. Perform threshold operation, perform gray level slicing without background
8. Image Segmentation
9. Image Compression
10. Binary Image Processing and Colour Image processing

#### **USCS606:Data Science**

***Practical shall be performed using R***

1. Practical of Data collection, Data curation and management for Unstructured data (NoSQL)

2. Practical of Data collection, Data curation and management for Large-scale Data system (such as MongoDB)
3. Practical of Principal Component Analysis
4. Practical of Clustering
5. Practical of Time-series forecasting
6. Practical of Simple/Multiple Linear Regression
7. Practical of Logistics Regression
8. Practical of Hypothesis testing
9. Practical of Analysis of Variance
10. Practical of Decision Tree

**Course:**

**USCSP603**

**(Credits : 01 Lectures/Week: 03)**

**Project Implementation**

*Please Refer to Project Implementation Guidelines*

**Course:**

**USCSP604**

**(Credits : 01 Lectures/Week: 03)**

**Practical of Skill Enhancement**

**USCS607 : Ethical Hacking**

1. Use Google and Whois for Reconnaissance
2. a) Use CrypTool to encrypt and decrypt passwords using RC4 algorithm  
b) Use Cain and Abel for cracking Windows account password using Dictionary attack and to decode wireless network passwords
3. a) Run and analyze the output of following commands in Linux – ifconfig, ping, netstat, traceroute  
b) Perform ARP Poisoning in Windows
4. Use NMap scanner to perform port scanning of various forms – ACK, SYN, FIN, NULL, XMAS
5. a) Use Wireshark (Sniffer) to capture network traffic and analyze  
b) Use Nemesy to launch DoS attack
6. Simulate persistent cross-site scripting attack
7. Session impersonation using Firefox and Tamper Data add-on



8. Perform SQL injection attack
9. Create a simple keylogger using python
10. Using Metasploit to exploit (Kali Linux)

## **Project Implementation Guidelines**

1. A learner is expected to carry out two different projects: one in Semester V and another in Semester VI.
2. A learner can choose any topic which is covered in Semester I- semester VI or any other topic with the prior approval from head of the department/ project in charge.
3. The Project has to be performed individually.
4. A learner is expected to devote around three months of efforts in the project.
5. The project can be application oriented/web-based/database/research based.
6. It has to be an implemented work; just theoretical study will not be acceptable.
7. A learner can choose any programming language, computational techniques and tools which have been covered during BSc course or any other with the prior permission of head of the department/ project guide.
8. A project guide should be assigned to a learner. He/she will assign a schedule for the project and hand it over to a learner. The guide should oversee the project progress on a weekly basis by considering the workload of 3 lectures as assigned.
9. The quality of the project will be evaluated based on the novelty of the topic, scope of the work, relevance to the computer science, adoption of emerging techniques/technologies and its real-world application.
10. A learner has to maintain a project report with the following subsections
  - a) Title Page
  - b) Certificate

A certificate should contain the following information –

- The fact that the student has successfully completed the project as per the syllabus and that it forms a part of the requirements for completing the BSc degree in computer science of University of Mumbai.
- The name of the student and the project guide
- The academic year in which the project is done
- Date of submission,
- Signature of the project guide and the head of the department with date along with the department stamp,

- Space for signature of the university examiner and date on which the project is evaluated.
- c) Self-attested copy of Plagiarism Report from any open source tool.
- d) Index Page detailing description of the following with their subsections:
- Title: A suitable title giving the idea about what work is proposed.
  - Introduction: An introduction to the topic giving proper back ground of the topic.
  - Requirement Specification: Specify Software/hardware/data requirements.
  - System Design details : Methodology/Architecture/UML/DFD/Algorithms/protocols etc. used(whichever is applicable)
  - System Implementation: Code implementation
  - Results: Test Cases/Tables/Figures/Graphs/Screen shots/Reports etc.
  - Conclusion and Future Scope: Specify the Final conclusion and future scope
  - References: Books, web links, research articles, etc.
11. The size of the project report shall be around twenty to twenty five pages, excluding the code.
12. The Project report should be submitted in a spiral bound form
13. The Project should be certified by the concerned Project guide and Head of the department.
14. A learner has to make a presentation of working project and will be evaluated as per the Project evaluation scheme

# Scheme of Examination

## 1. Theory:

### I. Internal 25 Marks :

#### a) Test – 20 Marks

20 marks Test – Duration 40 mins

It will be conducted either using any open source learning management system like Moodle (Modular object-oriented dynamic learning environment)

**OR**

A test based on an equivalent online course on the contents of the concerned course (subject) offered by or build using MOOC (Massive Open Online Course) platform.

#### b) 5 Marks – Active participation in routine class instructional deliveries

Overall conduct as a responsible student, manners, skill in articulation, leadership qualities demonstrated through organizing co-curricular activities, etc.

### II. External 75 Marks as per University Guidelines

## 11. Practical and Project Examination:

There will be separate Practical examination for Elective-I, II, Skill enhancement and project of these Elective-I 100, Elective-II: 100 and Skill Enhancement: 50 and Project Implementation: 50.

In the Practical Examination of Elective-I and II, the student has to perform practical on each of the subjects chosen. The Marking Scheme for each of the Elective is given below:

	<b>Subject Code</b>	<b>Experiment-I</b>	<b>Experiment-II</b>	<b>Total Marks</b>
<b>Elective-I</b>	<b>USCSP501/ USCSP601</b>	Experiment-40+Journal-5 +viva-5  Total:50M	Experiment-40+Journal-5+viva-5  Total:50M	100 M
<b>Elective-II</b>	<b>USCSP502/ USCSP602</b>	Experiment-40+Journal-5 +viva-5  Total:50M	Experiment-40+Journal-5+viva-5  Total:50M	100 M

<b>Project Implementation</b>	<b>USCSP503/ USCSP603</b>	<b>**Project Evaluation Scheme</b>	<b>50M</b>
<b>Skill Enhancement</b>	<b>USCSP504/ USCSP604</b>	Experiment-40+Journal:5+viva-5 Total-50M	<b>50M</b>
<b>Total Marks</b>			<b>300M</b>

**(Certified Journal is compulsory for appearing at the time of Practical Examination)**

**\*\*Project Evaluation Scheme:**

<b>Presentation</b>	<b>Working of the Project</b>	<b>Quality of the Project</b>	<b>Viva</b>	<b>Documentation</b>
10Marks	10 Marks	10 Marks	10 Marks	10Marks

**(Certified Project Document is compulsory for appearing at the time of Project Presentation)**

\*\*\*\*\*

**Academic Council 11/06/2018**

**Item No:**

**UNIVERSITY OF MUMBAI**



**Syllabus for T.Y.B.Sc.**

**Programme: B.Sc.**

**Subject: Information Technology**

with effect from the academic year

2018 – 2019



Semester – 5			
Course Code	Course Type	Course Title	Credits
USIT501	Skill Enhancement Course	Software Project Management	2
USIT502	Skill Enhancement Course	Internet of Things	2
USIT503	Skill Enhancement Course	Advanced Web Programming	2
USIT504	Discipline Specific Elective (Any One)	Artificial Intelligence	2
USIT505		Linux System Administration	
USIT506	Discipline Specific Elective (Any One)	Enterprise Java	2
USIT507		Next Generation Technologies	
USIT5P1	Skill Enhancement Course Practical	Project Dissertation	2
USIT5P2	Skill Enhancement Course Practical	Internet of Things Practical	2
USIT5P3	Skill Enhancement Course Practical	Advanced Web Programming Practical	2
USIT5P4	Discipline Specific Elective Practical (Any One)*	Artificial Intelligence Practical	2
USIT5P5		Linux Administration Practical	
USIT5P6	Discipline Specific Elective Practical (Any One)*	Enterprise Java Practical	2
USIT5P7		Next Generation Technologies Practical	
Total Credits			20

*(All the practical mentioned in the syllabi are compulsory as per the courses chosen)*

Semester – 6			
Course Code	Course Type	Course Title	Credits
USIT601	Skill Enhancement Course	Software Quality Assurance	2
USIT602	Skill Enhancement Course	Security in Computing	2
USIT603	Skill Enhancement Course	Business Intelligence	2
USIT604	Discipline Specific Elective (Any One)	Principles of Geographic Information Systems	2
USIT605		Enterprise Networking	
USIT606	Discipline Specific Elective (Any One)	IT Service Management	2
USIT607		Cyber Laws	
USIT6P1	Skill Enhancement Course Practical	Project Implementation	2
USIT6P2	Skill Enhancement Course Practical	Security in Computing Practical	2
USIT6P3	Skill Enhancement Course Practical	Business Intelligence Practical	2
USIT6P4	Discipline Specific Elective Practical (Any One)*	Principles of Geographic Information Systems Practical	2
USIT6P5		Enterprise Networking Practical	
USIT6P6	Skill Enhancement Course Practical	Advanced Mobile Programming	2
<b>Total Credits</b>			<b>20</b>

**\*The choice of Practical course is based on the theory Course. For Semester V, USIT504, USIT505, USIT506 and USIT507, the practical courses are USIT5P4, USIT5P5, USIT5P6, USIT5P7. For Semester VI, USIT604, USIT605 the practical courses are USIT6P4, USIT6P5 respectively. Practical Course USIT6P6 is compulsory.**



# **SEMESTER V**

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Software Project Management</b>		<b>Course Code: USIT501</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Introduction to Software Project Management:</b> Introduction, Why is Software Project Management Important? What is a Project? Software Projects versus Other Types of Project, Contract Management and Technical Project Management, Activities Covered by Software Project Management, Plans, Methods and Methodologies, Some Ways of Categorizing Software Projects, Project Charter, Stakeholders, Setting Objectives, The Business Case, Project Success and Failure, What is Management? Management Control, Project Management Life Cycle, Traditional versus Modern Project Management Practices.</p> <p><b>Project Evaluation and Programme Management:</b> Introduction, Business Case, Project Portfolio Management, Evaluation of Individual Projects, Cost–benefit Evaluation Techniques, Risk Evaluation, Programme Management, Managing the Allocation of Resources within Programmes, Strategic Programme Management, Creating a Programme, Aids to Programme Management, Some Reservations about Programme Management, Benefits Management.</p> <p><b>An Overview of Project Planning :</b> Introduction to Step Wise Project Planning, Step 0: Select Project, Step 1: Identify Project Scope and Objectives, Step 2: Identify Project Infrastructure, Step 3: Analyse Project Characteristics, Step 4: Identify Project Products and Activities, Step 5: Estimate Effort for Each Activity, Step 6: Identify Activity Risks, Step 7: Allocate Resources, Step 8: Review/Publicize Plan, Steps 9 and 10: Execute Plan/Lower Levels of Planning</p>	<b>12</b>
<b>II</b>	<p><b>Selection of an Appropriate Project Approach:</b> Introduction, Build or Buy? Choosing Methodologies and Technologies, Software Processes and Process Models, Choice of Process Models, Structure versus Speed of Delivery, The Waterfall Model, The Spiral Model, Software Prototyping, Other Ways of Categorizing Prototypes, Incremental Delivery, Atern/Dynamic Systems Development Method, Rapid Application Development, Agile Methods, Extreme Programming (XP), Scrum, Lean Software Development, Managing Iterative Processes, Selecting the Most Appropriate Process Model.</p> <p><b>Software Effort Estimation:</b> Introduction, Where are the Estimates Done? Problems with Over- and Under-Estimates, The Basis for Software Estimating, Software Effort Estimation Techniques, Bottom-up Estimating, The Top-down Approach and Parametric Models, Expert Judgement, Estimating by Analogy, Albrecht Function Point</p>	<b>12</b>

	Analysis, Function Points Mark II, COSMIC Full Function Points, COCOMO II: A Parametric Productivity Model, Cost Estimation, Staffing Pattern, Effect of Schedule Compression, Capers Jones Estimating Rules of Thumb.	
<b>III</b>	<p><b>Activity Planning:</b> Introduction, Objectives of Activity Planning, When to Plan, Project Schedules, Projects and Activities, Sequencing and Scheduling Activities, Network Planning Models, Formulating a Network Model, Adding the Time Dimension, The Forward Pass, Backward Pass, Identifying the Critical Path, Activity Float, Shortening the Project Duration, Identifying Critical Activities, Activity-on-Arrow Networks.</p> <p><b>Risk Management:</b> Introduction, Risk, Categories of Risk, Risk Management Approaches, A Framework for Dealing with Risk, Risk Identification, Risk Assessment, Risk Planning, Risk Management, Evaluating Risks to the Schedule, Boehm's Top 10 Risks and Counter Measures, Applying the PERT Technique, Monte Carlo Simulation, Critical Chain Concepts.</p> <p><b>Resource Allocation:</b> Introduction, Nature of Resources, Identifying Resource Requirements, Scheduling Resources, Creating Critical Paths, Counting the Cost, Being Specific, Publishing the Resource Schedule, Cost Schedules, Scheduling Sequence.</p>	<b>12</b>
<b>IV</b>	<p><b>Monitoring and Control:</b> Introduction, Creating the Framework, Collecting the Data, Review, Visualizing Progress, Cost Monitoring, Earned Value Analysis, Prioritizing Monitoring, Getting the Project Back to Target, Change Control, Software Configuration Management (SCM).</p> <p><b>Managing Contracts:</b> Introduction, Types of Contract, Stages in Contract Placement, Typical Terms of a Contract, Contract Management, Acceptance.</p> <p><b>Managing People in Software Environments:</b> Introduction, Understanding Behaviour, Organizational Behaviour: A Background, Selecting the Right Person for the Job, Instruction in the Best Methods, Motivation, The Oldham–Hackman Job Characteristics Model, Stress, Stress Management, Health and Safety, Some Ethical and Professional Concerns.</p>	<b>12</b>
<b>V</b>	<p><b>Working in Teams:</b> Introduction, Becoming a Team, Decision Making, Organization and Team Structures, Coordination Dependencies, Dispersed and Virtual Teams, Communication Genres, Communication Plans, Leadership.</p> <p><b>Software Quality :</b> Introduction, The Place of Software Quality in Project Planning, Importance of Software Quality, Defining Software Quality, Software Quality Models, ISO 9126, Product and Process Metrics, Product versus Process Quality Management, Quality Management Systems, Process Capability Models, Techniques to Help Enhance Software Quality, Testing, Software Reliability, Quality Plans.</p>	<b>12</b>

	<b>Project Closeout:</b> Introduction, Reasons for Project Closure, Project Closure Process, Performing a Financial Closure, Project Closeout Report.	
--	---	--

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Software Project Management	Bob Hughes, Mike Cotterell, Rajib Mall	TMH	6 <sup>th</sup>	2018
2.	Project Management and Tools & Technologies – An overview	Shailesh Mehta	SPD	1st	2017
3.	Software Project Management	Walker Royce	Pearson		2005

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Internet of Things</b>		<b>Course Code: USIT502</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>The Internet of Things: An Overview :</b> The Flavour of the Internet of Things, The “Internet” of “Things”, The Technology of the Internet of Things, Enchanted Objects, Who is Making the Internet of Things?</p> <p><b>Design Principles for Connected Devices:</b> Calm and Ambient Technology, Magic as Metaphor, Privacy, Keeping Secrets, Whose Data Is It Anyway? Web Thinking for Connected Devices, Small Pieces, Loosely Joined, First-Class Citizens On The Internet, Graceful Degradation, Affordances.</p> <p><b>Internet Principles:</b> Internet Communications: An Overview, IP, TCP, The IP Protocol Suite (TCP/IP), UDP, IP Addresses, DNS, Static IP Address Assignment, Dynamic IP Address Assignment, IPv6, MAC Addresses, TCP and UDP Ports, An Example: HTTP Ports, Other Common Ports, Application Layer Protocols, HTTP, HTTPS: Encrypted HTTP, Other Application Layer Protocols.</p>	<b>12</b>
<b>II</b>	<p><b>Thinking About Prototyping:</b> Sketching, Familiarity, Costs versus Ease of Prototyping, Prototypes and Production, Changing Embedded Platform, Physical Prototypes and Mass Personalisation, Climbing into the Cloud, Open Source versus Closed Source, Why Closed? Why Open? Mixing Open and Closed Source, Closed Source for Mass Market Projects, Tapping into the Community.</p> <p><b>Prototyping Embedded Devices:</b> Electronics, Sensors, Actuators, Scaling Up the Electronics, Embedded Computing Basics, Microcontrollers, System-on-Chips, Choosing Your Platform, Arduino, Developing on the Arduino, Some Notes on the Hardware, Openness, Raspberry Pi, Cases and Extension Boards, Developing on the Raspberry Pi, Some Notes on the Hardware, Openness.</p>	<b>12</b>
<b>III</b>	<p><b>Prototyping the Physical Design:</b> Preparation, Sketch, Iterate, and Explore, Nondigital Methods, Laser Cutting, Choosing a Laser Cutter, Software, Hinges and Joints, 3D Printing, Types of 3D Printing, Software, CNC Milling, Repurposing/Recycling.</p> <p><b>Chapter 7: Prototyping Online Components:</b> Getting Started with an API, Mashing Up APIs, Scraping, Legalities, Writing a New API, Clockodillo, Security, Implementing the API, Using Curl to Test, Going Further, Real-Time Reactions, Polling, Comet, Other Protocols, MQ Telemetry Transport,</p>	<b>12</b>

	Extensible Messaging and Presence Protocol, Constrained Application Protocol.	
<b>IV</b>	<p><b>Techniques for Writing Embedded Code:</b> Memory Management, Types of Memory, Making the Most of Your RAM, Performance and Battery Life, Libraries, Debugging,</p> <p><b>Business Models:</b> A Short History of Business Models, Space and Time, From Craft to Mass Production, The Long Tail of the Internet, Learning from History, The Business Model Canvas, Who Is the Business Model For? Models, Make Thing, Sell Thing, Subscriptions, Customisation, Be a Key Resource, Provide Infrastructure: Sensor Networks, Take a Percentage, Funding an Internet of Things Startup, Hobby Projects and Open Source, Venture Capital, Government Funding, Crowdfunding, Lean Startups.</p>	<b>12</b>
<b>V</b>	<p><b>Moving to Manufacture:</b> What Are You Producing? Designing Kits, Designing Printed circuit boards, Software Choices, The Design Process, Manufacturing Printed Circuit Boards, Etching Boards, Milling Boards. Assembly, Testing, Mass-Producing the Case and Other Fixtures, Certification, Costs, Scaling Up Software, Deployment, Correctness and Maintainability, Security, Performance, User Community.</p> <p><b>Ethics:</b> Characterizing the Internet of Things, Privacy, Control, Disrupting Control, Crowdsourcing, Environment, Physical Thing, Electronics, Internet Service, Solutions, The Internet of Things as Part of the Solution, Cautious Optimism, The Open Internet of Things Definition.</p>	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Designing the Internet of Things	Adrian McEwen, Hakim Cassimally	WILEY	First	2014
2.	Internet of Things – Architecture and Design	Raj Kamal	McGraw Hill	First	2017
3.	Getting Started with the Internet of Things	Cuno Pfister	O'Reilly	Sixth	2018
4.	Getting Started with Raspberry Pi	Matt Richardson and Shawn Wallace	SPD	Third	2016

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Advanced Web Programming</b>		<b>Course Code: USIT503</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Introducing .NET:</b> The .NET Framework, C#, VB, and the .NET Languages, The Common Language Runtime, The .NET Class Library.</p> <p><b>The C# Language:</b> C# Language Basics, Variables and Data Types, Variable Operations, Object-Based Manipulation, Conditional Logic, Loops, Methods.</p> <p><b>Types, Objects, and Namespaces:</b> The Basics About Classes, Building a Basic Class, Value Types and Reference Types, Understanding Namespaces and Assemblies, Advanced Class Programming.</p>	<b>12</b>
<b>II</b>	<p><b>Web Form Fundamentals:</b> Writing Code, Using the Code-Behind Class, Adding Event Handlers, Understanding the Anatomy of an ASP.NET Application, Introducing Server Controls, Using the Page Class, Using Application Events, Configuring an ASP.NET Application.</p> <p><b>Form Controls:</b> Stepping Up to Web Controls, Web Control Classes, List Controls, Table Controls, Web Control Events and AutoPostBack, Validation, Understanding Validation, Using the Validation Controls, Rich Controls, The Calendar, The AdRotator, Pages with Multiple Views, User Controls and Graphics, User Controls, Dynamic Graphics, The Chart Control, Website Navigation: Site Maps, URL Mapping and Routing, The SiteMapPath Control, The TreeView Control, The Menu Control.</p>	<b>12</b>
<b>III</b>	<p><b>Error Handling, Logging, and Tracing :</b> Avoiding Common Errors, Understanding Exception Handling, Handling Exceptions, Throwing Your Own Exceptions, Using Page Tracing</p> <p><b>State Management :</b> Understanding the Problem of State, Using View State, Transferring Information Between Pages, Using Cookies, Managing Session State, Configuring Session State, Using Application State, Comparing State Management Options</p> <p><b>Styles, Themes, and Master Pages :</b> Styles, Themes, Master Page Basics, Advanced Master Pages,</p>	<b>12</b>
<b>IV</b>	<p><b>ADO.NET Fundamentals:</b> Understanding Databases, Configuring Your Database, Understanding SQL Basics, Understanding the Data Provider Model, Using Direct Data Access, Using Disconnected Data Access.</p> <p><b>Data Binding:</b> Introducing Data Binding, Using Single-Value Data Binding, Using Repeated-Value Data Binding, Working with Data Source Controls,</p>	<b>12</b>

	<b>The Data Controls:</b> The GridView, Formatting the GridView, Selecting a GridView Row, Editing with the GridView, Sorting and Paging the GridView, Using GridView Templates, The DetailsView and FormView	
<b>V</b>	<b>XML:</b> XML Explained, The XML Classes, XML Validation, XML Display and Transforms. <b>Security Fundamentals:</b> Understanding Security Requirements, Authentication and Authorization, Forms Authentication, Windows Authentication. <b>ASP.NET AJAX:</b> Understanding Ajax, Using Partial Refreshes, Using Progress Notification, Implementing Timed Refreshes, Working with the ASP.NET AJAX Control Toolkit.	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Beginning ASP.NET 4.5 in C#	Matthew MacDonald	Apress		2012
2.	C# 2015	Anne Bohem and Joel Murach	Murach	Third	2016
3.	Murach's ASP.NET 4.6 Web Programming in C#2015	Mary Delamater and Anne Bohem	SPD	Sixth	2016
4.	ASP.NET 4.0 programming	J. Kanjilal	Tata McGraw-Hill		2011
5.	Programming ASP.NET	D.Esposito	Microsoft Press (Dreamtech)		2011
6.	Beginning Visual C# 2010	K. Watson, C. Nagel, J.H Padderson, J.D. Reid, M.Skinner	Wrox (Wiley)		2010



<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Artificial Intelligence</b>		<b>Course Code: USIT504 (Elective I)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<b>Introduction:</b> What is Artificial Intelligence? Foundations of AI, history, the state of art AI today. <b>Intelligent Agents:</b> agents and environment, good behavior, nature of environment, the structure of agents.	<b>12</b>
<b>II</b>	<b>Solving Problems by Searching:</b> Problem solving agents, examples problems, searching for solutions, uninformed search, informed search strategies, heuristic functions. <b>Beyond Classical Search:</b> local search algorithms, searching with non-deterministic action, searching with partial observations, online search agents and unknown environments.	<b>12</b>
<b>III</b>	<b>Adversarial Search:</b> Games, optimal decisions in games, alpha-beta pruning, stochastic games, partially observable games, state-of-the-art game programs. <b>Logical Agents:</b> Knowledge base agents, The Wumpus world, logic, propositional logic, propositional theorem proving, effective propositional model checking, agents based on propositional logic.	<b>12</b>
<b>IV</b>	<b>First Order Logic:</b> Syntax and semantics, using First Order Logic, Knowledge engineering in First Order Logic. <b>Inference in First Order Logic:</b> propositional vs. First Order, unification and lifting, forward and backward chaining, resolution.	<b>12</b>
<b>V</b>	<b>Planning:</b> Definition of Classical Planning, Algorithms for planning as state space search, planning graphs, other classical planning approaches, analysis of planning approaches, Time, Schedules and resources, hierarchical planning, Planning and Acting in Nondeterministic Domains, multiagent planning, <b>Knowledge Representation:</b> Categories and Objects, events, mental events and objects, reasoning systems for categories, reasoning with default information, Internet shopping world	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Artificial Intelligence: A Modern Approach	Stuart Russel and Peter Norvig	Pearson	3 <sup>rd</sup>	2015

2.	A First Course in Artificial Intelligence	Deepak Khemani	TMH	First	2017
3.	Artificial Intelligence: A Rational Approach	Rahul Deva	Shroff publishers	1 <sup>st</sup>	2018
4.	Artificial Intelligence	Elaine Rich, Kevin Knight and Shivashankar Nair	TMH	3 <sup>rd</sup>	2009
5.	Artificial Intelligence & Soft Computing for Beginners	Anandita Das Bhattacharjee	SPD	1 <sup>st</sup>	2013

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Linux System Administration</b>		<b>Course Code: USIT505 (Elective I)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Introduction to Red Hat Enterprise Linux:</b> Linux, Open Source and Red Hat, Origins of Linux, Distributions, Duties of Linux System Administrator.</p> <p><b>Command Line:</b> Working with the Bash Shell, Getting the Best of Bash, Useful Bash Key Sequences, Working with Bash History, Performing Basic File System Management Tasks, Working with Directories, Piping and Redirection, Finding Files</p> <p><b>System Administration Tasks:</b> Performing Job Management Tasks, System and Process Monitoring and Management, Managing Processes with ps, Sending Signals to Processes with the kill Command, Using top to Show Current System Activity, Managing Process Niceness, Scheduling Jobs, Mounting Devices, Working with Links, Creating Backups, Managing Printers, Setting Up System Logging, Setting Up Rsyslog, Common Log Files, Setting Up Logrotate</p> <p><b>Managing Software:</b> Understanding RPM, Understanding Meta Package Handlers, Creating Your Own Repositories, Managing Repositories, Installing Software with Yum, Querying Software, Extracting Files from RPM Packages</p>	<b>12</b>
<b>II</b>	<p><b>Configuring and Managing Storage:</b> Understanding Partitions and Logical Volumes, Creating Partitions, Creating File Systems, File Systems Overview, Creating File Systems, Changing File System Properties, Checking the File System Integrity, Mounting File Systems Automatically Through fstab, Working with Logical Volumes, Creating Logical Volumes, Resizing Logical Volumes, Working with Snapshots, Replacing Failing Storage Devices, Creating Swap Space, Working with Encrypted Volumes</p> <p><b>Connecting to the Network:</b> Understanding NetworkManager, Working with Services and Runlevels, Configuring the Network with NetworkManager, Working with system-config-network, NetworkManager Configuration Files, Network Service Scripts, Networking from the Command Line, Troubleshooting Networking, Setting Up IPv6, Configuring SSH, Enabling the SSH Server, Using the SSH Client, Using PuTTY on Windows Machines, Configuring Key-Based SSH Authentication, Using Graphical Applications with SSH, Using SSH Port Forwarding, Configuring VNC Server Access</p>	<b>12</b>

	<p><b>Working with Users, Groups, and Permissions:</b> Managing Users and Groups, Commands for User Management, Managing Passwords, Modifying and Deleting User Accounts, Configuration Files, Creating Groups, Using Graphical Tools for User, and Group Management, Using External Authentication Sources, the Authentication Process, sssd, nsswitch, Pluggable Authentication Modules, Managing Permissions, the Role of Ownership, Basic Permissions: Read, Write, and Execute, Advanced Permissions, Working with Access Control Lists, Setting Default Permissions with umask, Working with Attributes</p>	
III	<p><b>Securing Server with iptables:</b> Understanding Firewalls, Setting Up a Firewall with system-config-firewall, Allowing Services, Trusted Interfaces, Masquerading, Configuration Files, Setting Up a Firewall with iptables, Tables, Chains, and Rules, Composition of Rule, Configuration Example, Advanced iptables Configuration, Configuring Logging, The Limit Module, Configuring NAT</p> <p><b>Setting Up Cryptographic Services:</b> Introducing SSL, Proof of Authenticity: the Certificate Authority, Managing Certificates with openssl, Creating a Signing Request, Working with GNU Privacy Guard, Creating GPG Keys, Key Transfer, Managing GPG Keys, Encrypting Files with GPG, GPG Signing, Signing RPM Files</p> <p><b>Configuring Server for File Sharing:</b> What is NFS? Advantages and Disadvantages of NFS, Configuring NFS4, Setting Up NFSv4, Mounting an NFS Share, Making NFS Mounts Persistent, Configuring Automount, Configuring Samba, Setting Up a Samba File Server, Samba Advanced Authentication Options, Accessing Samba Shares, Offering FTP Services.</p>	12
IV	<p><b>Configuring DNS and DHCP:</b> Introduction to DNS, The DNS Hierarchy, DNS Server Types, The DNS Lookup Process, DNS Zone Types, Setting Up a DNS Server, Setting Up a Cache-Only Name Server, Setting Up a Primary Name Server, Setting Up a Secondary Name Server, Understanding DHCP, Setting Up a DHCP Server</p> <p><b>Setting Up a Mail Server:</b> Using the Message Transfer Agent, the Mail Delivery Agent, the Mail User Agent, Setting Up Postfix as an SMTP Server, Working with Mutt, Basic Configuration, Internet Configuration, Configuring Dovecot for POP and IMAP</p> <p><b>Configuring Apache on Red Hat Enterprise Linux:</b> Configuring the Apache Web Server, Creating a Basic Website, Understanding the Apache Configuration Files, Apache Log Files, Working with Virtual Hosts, Securing the Web Server with TLS Certificates, Configuring Authentication, Setting Up Authentication with .htpasswd, Configuring LDAP Authentication, Setting Up MySQL</p>	12

V	<p><b>Introducing Bash Shell Scripting:</b> Introduction, Elements of a Good Shell Script, Executing the Script, Working with Variables and Input, Understanding Variables, Variables, Subshells, and Sourcing, Working with Script Arguments, Asking for Input, Using Command Substitution, Substitution Operators, Changing Variable Content with Pattern Matching, Performing Calculations, Using Control Structures, Using if...then...else, Using case, Using while, Using until, Using for, Configuring booting with GRUB.</p> <p><b>High-Availability Clustering:</b> High-Availability Clustering, The Workings of High Availability, High-Availability Requirements, Red Hat High-Availability Add-on Software, Components, Configuring Cluster-Based Services, Setting Up Bonding, Setting Up Shared Storage, Installing the Red Hat High Availability Add-On, Building the Initial State of the Cluster, Configuring Additional Cluster Properties, Configuring a Quorum Disk, Setting Up Fencing, Creating Resources and Services, Troubleshooting a Nonoperational Cluster, Configuring GFS2 File Systems</p> <p><b>Setting Up an Installation Server:</b> Configuring a Network Server as an Installation Server, Setting Up a TFTP and DHCP Server for PXE Boot, Installing the TFTP Server, Configuring DHCP for PXE Boot, Creating the TFTP PXE Server Content, Creating a Kickstart File, Using a Kickstart File to Perform an Automated, Installation, Modifying the Kickstart File with, system-config-kickstart, Making Manual Modifications to the Kickstart File</p>	12
---	---	----

Books and References:					
Sr. No.	Title	Author/s	Publisher	Edition	Year
1.	Red Hat Enterprise Linux 6 Administration	Sander van Vugt	John Wiley and Sons		2013
2.	Red hat Linux Networking and System Administration	Terry Collings and Kurt Wall	Wiley	3 <sup>rd</sup>	
3.	Linux Administration: A Beginner's Guide	Wale Soyinka	TMH	Fifth Edition	

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Enterprise Java</b>		<b>Course Code: USIT506 (Elective II)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Understanding Java EE:</b> What is an Enterprise Application? What is java enterprise edition? Java EE Technologies, Java EE evolution, Glassfish server</p> <p><b>Java EE Architecture, Server and Containers:</b> Types of System Architecture, Java EE Server, Java EE Containers.</p> <p><b>Introduction to Java Servlets:</b> The Need for Dynamic Content, Java Servlet Technology, Why Servlets? What can Servlets do?</p> <p><b>Servlet API and Lifecycle:</b> Java Servlet API, The Servlet Skeleton, The Servlet Life Cycle, A Simple Welcome Servlet</p> <p><b>Working With Servlets:</b> Getting Started, Using Annotations Instead of Deployment Descriptor.</p> <p><b>Working with Databases:</b> What Is JDBC? JDBC Architecture, Accessing Database, The Servlet GUI and Database Example.</p>	<b>12</b>
<b>II</b>	<p><b>Request Dispatcher:</b> Requestdispatcher Interface, Methods of Requestdispatcher, Requestdispatcher Application.</p> <p><b>COOKIES:</b> Kinds Of Cookies, Where Cookies Are Used? Creating Cookies Using Servlet, Dynamically Changing The Colors Of A Page</p> <p><b>SESSION:</b> What Are Sessions? Lifecycle Of Http Session, Session Tracking With Servlet API, A Servlet Session Example</p> <p><b>Working With Files:</b> Uploading Files, Creating an Upload File Application, Downloading Files, Creating a Download File Application.</p> <p><b>Working With Non-Blocking I/O:</b> Creating a Non-Blocking Read Application, Creating The Web Application, Creating Java Class, Creating Servlets, Retrieving The File, Creating index.jsp</p>	<b>12</b>
<b>III</b>	<p><b>Introduction To Java Server Pages:</b> Why use Java Server Pages? Disadvantages Of JSP, JSP v\s Servlets, Life Cycle of a JSP Page, How does a JSP function? How does JSP execute? About Java Server Pages</p> <p><b>Getting Started With Java Server Pages:</b> Comments, JSP Document, JSP Elements, JSP GUI Example.</p> <p><b>Action Elements:</b> Including other Files, Forwarding JSP Page to Another Page, Passing Parameters for other Actions, Loading a Javabeen.</p> <p><b>Implicit Objects, Scope And El Expressions:</b> Implicit Objects, Character Quoting Conventions, Unified Expression Language [Unified El], Expression Language.</p>	<b>12</b>

	<b>Java Server Pages Standard Tag Libraries:</b> What is wrong in using JSP Scriptlet Tags? How JSTL Fixes JSP Scriptlet's Shortcomings? Disadvantages Of JSTL, Tag Libraries.	
<b>IV</b>	<p><b>Introduction To Enterprise Javabeans:</b> Enterprise Bean Architecture, Benefits of Enterprise Bean, Types of Enterprise Bean, Accessing Enterprise Beans, Enterprise Bean Application, Packaging Enterprise Beans</p> <p><b>Working With Session Beans:</b> When to use Session Beans? Types of Session Beans, Remote and Local Interfaces, Accessing Interfaces, Lifecycle of Enterprise Beans, Packaging Enterprise Beans, Example of Stateful Session Bean, Example of Stateless Session Bean, Example of Singleton Session Beans.</p> <p><b>Working with Message Driven Beans:</b> Lifecycle of a Message Driven Bean, Uses of Message Driven Beans, The Message Driven Beans Example.</p> <p><b>Interceptors:</b> Request And Interceptor, Defining An Interceptor, AroundInvoke Method, Applying Interceptor, Adding An Interceptor To An Enterprise Bean, Build and Run the Web Application.</p> <p><b>Java Naming and Directory Interface:</b> What is Naming Service? What is Directory Service? What is Java Naming and Directory interface? Basic Lookup, JNDI Namespace in Java EE, Resources and JNDI, Datasource Resource Definition in Java EE.</p>	<b>12</b>
<b>V</b>	<p><b>Persistence, Object/Relational Mapping And JPA:</b> What is Persistence? Persistence in Java, Current Persistence Standards in Java, Why another Persistence Standards? Object/Relational Mapping,</p> <p><b>Introduction to Java Persistence API:</b> The Java Persistence API, JPA, ORM, Database and the Application, Architecture of JPA, How JPA Works? JPA Specifications.</p> <p><b>Writing JPA Application:</b> Application Requirement Specifications, Software Requirements, The Application Development Approach, Creating Database And Tables in Mysql, Creating a Web Application, Adding the Required Library Files, Creating a Javabeen Class, Creating Persistence Unit [Persistence.Xml], Creating JSPS, The JPA Application Structure, Running The JPA Application.</p> <p><b>Introduction to Hibernate:</b> What is Hibernate? Why Hibernate? Hibernate, Database and The Application, Components of Hibernate, Architecture of Hibernate, How Hibernate Works?</p> <p><b>Writing Hibernate Application:</b> Application Requirement Specifications, Software Requirements, The Application Development Approach, Creating Database and Tables in Mysql, Creating a Web Application, Adding The Required Library Files, Creating a Javabeen Class, Creating Hibernate Configuration File, Adding a Mapping Class, Creating JSPS, Running The Hibernate Application.</p>	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Java EE 7 For Beginners	Sharanam Shah, Vaishali Shah	SPD	First	2017
2.	Java EE 8 Cookbook: Build reliable applications with the most robust and mature technology for enterprise development	Elder Moraes	Packt	First	2018
3.	Advanced Java Programming	Uttam Kumar Roy	Oxford Press		2015



<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Next Generation Technologies</b>		<b>Course Code: USIT507 (Elective II)</b>	
<b>Periods per week (1 Period is 50 minutes),</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Big Data:</b> Getting Started, Big Data, Facts About Big Data, Big Data Sources, Three Vs of Big Data, Volume, Variety, Velocity, Usage of Big Data, Visibility, Discover and Analyze Information, Segmentation and Customizations, Aiding Decision Making, Innovation, Big Data Challenges, Policies and Procedures, Access to Data, Technology and Techniques, Legacy Systems and Big Data, Structure of Big Data, Data Storage, Data Processing, Big Data Technologies</p> <p><b>NoSQL:</b> SQL, NoSQL, Definition, A Brief History of NoSQL, ACID vs. BASE, CAP Theorem (Brewer's Theorem), The BASE, NoSQL Advantages and Disadvantages, Advantages of NoSQL, Disadvantages of NoSQL, SQL vs. NoSQL Databases, Categories of NoSQL Databases</p> <p><b>Introducing MongoDB:</b> History, MongoDB Design Philosophy, Speed, Scalability, and Agility, Non-Relational Approach, JSON-Based Document Store, Performance vs. Features, Running the Database Anywhere, SQL Comparison</p>	<b>12</b>
<b>II</b>	<p><b>The MongoDB Data Model:</b> The Data Model, JSON and BSON, The Identifier (_id), Capped Collection, Polymorphic Schemas, Object-Oriented Programming, Schema Evolution</p> <p><b>Using MongoDB Shell:</b> Basic Querying, Create and Insert, Explicitly Creating Collections, Inserting Documents Using Loop, Inserting by Explicitly Specifying _id, Update, Delete, Read, Using Indexes, Stepping Beyond the Basics, Using Conditional Operators, Regular Expressions, MapReduce, aggregate(), Designing an Application's Data Model, Relational Data Modeling and Normalization, MongoDB Document Data Model Approach</p> <p><b>MongoDB Architecture:</b> Core Processes, mongod, mongo, mongos, MongoDB Tools, Standalone Deployment, Replication, Master/Slave Replication, Replica Set, Implementing Advanced Clustering with Replica Sets, Sharding, Sharding Components, Data Distribution Process, Data Balancing Process, Operations, Implementing Sharding, Controlling Collection Distribution (Tag-Based Sharding), Points to</p>	<b>12</b>

	Remember When Importing Data in a Sharded Environment, Monitoring for Sharding, Monitoring the Config Servers, Production Cluster Architecture, Scenario 1, Scenario 2, Scenario 3, Scenario 4	
<b>III</b>	<p><b>MongoDB Storage Engine:</b> Data Storage Engine, Data File (Relevant for MMAPv1), Namespace (.ns File), Data File (Relevant for WiredTiger), Reads and Writes, How Data Is Written Using Journaling, GridFS – The MongoDB File System, The Rationale of GridFS, GridFS under the Hood, Using GridFS, Indexing, Types of Indexes, Behaviors and Limitations</p> <p><b>MongoDB Use Cases:</b> Use Case 1 -Performance Monitoring, Schema Design, Operations, Sharding, Managing the Data, Use Case 2 – Social Networking, Schema Design, Operations, Sharding</p> <p><b>MongoDB Limitations:</b> MongoDB Space Is Too Large (Applicable for MMAPv1), Memory Issues (Applicable for Storage Engine MMAPv1), 32-bit vs. 64-bit, BSON Documents, Namespaces Limits, Indexes Limit, Capped Collections Limit - Maximum Number of Documents in a Capped Collection, Sharding Limitations, Shard Early to Avoid Any Issues, Shard Key Can't Be Updated, Shard Collection Limit, Select the Correct Shard Key, Security Limitations, No Authentication by Default, Traffic to and from MongoDB Isn't Encrypted, Write and Read Limitations, Case-Sensitive Queries, Type-Sensitive Fields, No JOIN, Transactions, MongoDB Not Applicable Range</p> <p><b>MongoDB Best Practices:</b> Deployment, Hardware Suggestions from the MongoDB Site, Few Points to be Noted, Coding, Application Response Time Optimization, Data Safety, Administration, Replication Lag, Sharding, Monitoring</p>	<b>12</b>
<b>IV</b>	<p><b>The End of Disk? SSD and In-Memory Databases:</b> The End of Disk?, Solid State Disk, The Economics of Disk, SSD-Enabled Databases, In-Memory Databases, TimesTen, Redis, SAP HANA, VoltDB, Oracle 12c “in-Memory Database, Berkeley Analytics Data Stack and Spark, Spark Architecture</p> <p><b>jQuery:</b> Introduction, Traversing the DOM, DOM Manipulation with jQuery, Events, Ajax with jQuery, jQuery Plug-ins, jQuery Image Slider</p>	<b>12</b>
<b>V</b>	<b>JSON:</b> Introduction, JSON Grammar, JSON Values, JSON Tokens, Syntax, JSON vs XML, Data Types, Objects, Arrays, Creating JSON, JSON Object, Parsing JSON, Persisting JSON, Data Interchange, JSON PHP, JSON HTML, JSONP	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Practical MongoDB	Shakuntala Gupta Edward Navin Sabharwal	Apress		
2.	Beginning jQuery	Jack Franklin Russ Ferguson	Apress	Second	
3.	Next Generation Databases	Guy Harrison	Apress		
4.	Beginning JSON	Ben Smith	Apress		

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Project Dissertation</b>		<b>Course Code: USIT5P1</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>--</b>

The details are given in Appendix – I

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Internet of Things Practical</b>		<b>Course Code: USIT5P2</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>--</b>

<b>Practical No</b>	<b>Details</b>
<b>0</b>	Starting Raspbian OS, Familiarising with Raspberry Pi Components and interface, Connecting to ethernet, Monitor, USB.
<b>1</b>	Displaying different LED patterns with Raspberry Pi.
<b>2</b>	Displaying Time over 4-Digit 7-Segment Display using Raspberry Pi
<b>3</b>	Raspberry Pi Based Oscilloscope
<b>4</b>	Controlling Raspberry Pi with WhatsApp.
<b>5</b>	Setting up Wireless Access Point using Raspberry Pi
<b>6</b>	Fingerprint Sensor interfacing with Raspberry Pi
<b>7</b>	Raspberry Pi GPS Module Interfacing
<b>8</b>	IoT based Web Controlled Home Automation using Raspberry Pi
<b>9</b>	Visitor Monitoring with Raspberry Pi and Pi Camera
<b>10</b>	Interfacing Raspberry Pi with RFID.
<b>11</b>	Building Google Assistant with Raspberry Pi.
<b>12</b>	Installing Windows 10 IoT Core on Raspberry Pi

Raspberry Pi Kits and components should be made available in the ratio of 1 kit : 3 students minimum.

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Advanced Web Programming Practical</b>		<b>Course Code: USIT5P3</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>--</b>

<b>List of Practical</b>	
<b>1.</b>	<b>Working with basic C# and ASP .NET</b>
a.	Create an application that obtains four int values from the user and displays the product.
b.	Create an application to demonstrate string operations.
c.	Create an application that receives the (Student Id, Student Name, Course Name, Date of Birth) information from a set of students. The application should also display the information of all the students once the data entered.
	Create an application to demonstrate following operations i. Generate Fibonacci series.                      ii. Test for prime numbers. iii. Test for vowels.                                      iv. Use of foreach loop with arrays v. Reverse a number and find sum of digits of a number.
<b>2.</b>	<b>Working with Object Oriented C# and ASP .NET</b>
a.	Create simple application to perform following operations i. Finding factorial Value                              ii. Money Conversion iii. Quadratic Equation                                  iv. Temperature Conversion
b.	Create simple application to demonstrate use of following concepts i. Function Overloading                                  ii. Inheritance (all types) iii. Constructor overloading                              iv. Interfaces
c.	Create simple application to demonstrate use of following concepts i. Using Delegates and events                              ii. Exception handling
<b>3.</b>	<b>Working with Web Forms and Controls</b>
a.	Create a simple web page with various sever controls to demonstrate setting and use of their properties. (Example : AutoPostBack)
b.	Demonstrate the use of Calendar control to perform following operations. a) Display messages in a calendar control                      b) Display vacation in a calendar control c) Selected day in a calendar control using style                      d) Difference between two calendar dates
c.	Demonstrate the use of Treeview control perform following operations. a) Treeview control and datalist                                      b) Treeview operations
<b>4.</b>	<b>Working with Form Controls</b>
a.	Create a Registration form to demonstrate use of various Validation controls.
b.	Create Web Form to demonstrate use of Adrotator Control.
c.	Create Web Form to demonstrate use User Controls.

<b>5.</b>	<b>Working with Navigation, Beautification and Master page.</b>
a.	Create Web Form to demonstrate use of Website Navigation controls and Site Map.
b.	Create a web application to demonstrate use of Master Page with applying Styles and Themes for page beautification.
c.	Create a web application to demonstrate various states of ASP.NET Pages.
<b>6.</b>	<b>Working with Database</b>
a.	Create a web application bind data in a multiline textbox by querying in another textbox.
b.	Create a web application to display records by using database.
c.	Demonstrate the use of Datalist link control.
<b>7.</b>	<b>Working with Database</b>
a.	Create a web application to display Databinding using dropdownlist control.
b.	Create a web application for to display the phone no of an author using database.
c.	Create a web application for inserting and deleting record from a database. (Using Execute-Non Query).
<b>8.</b>	<b>Working with data controls</b>
a.	Create a web application to demonstrate various uses and properties of SqlDataSource.
b.	Create a web application to demonstrate data binding using DetailsView and FormView Control.
c.	Create a web application to display Using Disconnected Data Access and Databinding using GridView.
<b>9.</b>	<b>Working with GridView control</b>
a.	Create a web application to demonstrate use of GridView control template and GridView hyperlink.
b.	Create a web application to demonstrate use of GridView button column and GridView events.
c.	Create a web application to demonstrate GridView paging and Creating own table format using GridView.
<b>10.</b>	<b>Working with AJAX and XML</b>
a.	Create a web application to demonstrate reading and writing operation with XML.
b.	Create a web application to demonstrate Form Security and Windows Security with proper Authentication and Authorization properties.
c.	Create a web application to demonstrate use of various Ajax controls.
<b>11.</b>	<b>Programs to create and use DLL</b>

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Artificial Intelligence Practical</b>		<b>Course Code: USIT5P4 (Elective I)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>--</b>

<b>Practical No</b>		<b>Details</b>
<b>1</b>	a	Write a program to implement depth first search algorithm.
	b	Write a program to implement breadth first search algorithm.
<b>2</b>	a	Write a program to simulate 4-Queen / N-Queen problem.
	b	Write a program to solve tower of Hanoi problem.
<b>3</b>	a	Write a program to implement alpha beta search.
	b	Write a program for Hill climbing problem.
<b>4</b>	a	Write a program to implement A* algorithm.
	b	Write a program to implement AO* algorithm.
<b>5</b>	a	Write a program to solve water jug problem.
	b	Design the simulation of tic – tac – toe game using min-max algorithm.
<b>6</b>	a	Write a program to solve Missionaries and Cannibals problem.
	b	Design an application to simulate number puzzle problem.
<b>7</b>	a	Write a program to shuffle Deck of cards.
	b	Solve traveling salesman problem using artificial intelligence technique.
<b>8</b>	a	Solve the block of World problem.
	b	Solve constraint satisfaction problem
<b>9</b>	a	Derive the expressions based on Associative law
	b	Derive the expressions based on Distributive law
<b>10</b>	a	Write a program to derive the predicate. (for e.g.: Sachin is batsman , batsman is cricketer) - > Sachin is Cricketer.
	b	Write a program which contains three predicates: male, female, parent. Make rules for following family relations: father, mother, grandfather, grandmother, brother, sister, uncle, aunt, nephew and niece, cousin. Question: i. Draw Family Tree. ii. Define: Clauses, Facts, Predicates and Rules with conjunction and disjunction

The practicals can be implemented in C / C++ / Java/ Python / R /Prolog / LISP or any other language.



<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Linux System Administration</b>		<b>Course Code: USIT5P5 (Elective I)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>--</b>

<b>Practical No</b>	<b>Details</b>
<b>0</b>	<b>Installation of RHEL 6.X</b>
<b>1</b>	<b>Graphical User Interface and Command Line Interface and Processes</b>
<b>a</b>	Exploring the Graphical Desktop
<b>b</b>	The Command Line Interface
<b>c</b>	Managing Processes
<b>2</b>	<b>Storage Devices and Links, Backup and Repository</b>
<b>b</b>	Working with Storage Devices and Links
<b>a</b>	Making a Backup
<b>b</b>	Creating a Repository
<b>3</b>	<b>Working with RPMs Storage and Networking</b>
<b>a</b>	Using Query Options
<b>b</b>	Extracting Files From RPMs
<b>c</b>	Configuring and Managing Storage
<b>d</b>	Connecting to the Network
<b>4</b>	<b>Working with Users, Groups, and Permissions</b>
<b>5</b>	<b>Firewall and Cryptographic services</b>
<b>a</b>	Securing Server with iptables
<b>b</b>	Setting Up Cryptographic Services
<b>6</b>	<b>Configuring Server for File Sharing</b>
<b>a</b>	Configuring NFS Server and Client
<b>b</b>	Configuring Samba
<b>c</b>	Configuring FTP
<b>7</b>	<b>DNS, DHCP and Mail Server</b>
<b>a</b>	Configuring DNS
<b>b</b>	Configuring DHCP
<b>c</b>	Setting Up a Mail Server

<b>8</b>	<b>Web Server</b>
<b>a</b>	Configuring Apache on Red Hat Enterprise Linux
<b>b</b>	Writing a Script to Monitor Activity on the Apache Web Server
<b>c</b>	Using the select Command
<b>9</b>	<b>Shell Scripts and High-Availability Clustering</b>
<b>a</b>	Writing Shell Scripts
<b>b</b>	Configuring Booting with GRUB
<b>c</b>	Configuring High Availability Clustering
<b>10</b>	<b>Setting Up an Installation Server</b>
<b>a</b>	Configuring Network Server as an Installation Server
<b>b</b>	Setting Up a TFTP and DHCP Server for PXE Boot

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Enterprise Java</b>		<b>Course Code: USIT5P6 (Elective II)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>--</b>

<b>List of Practical</b>	
<b>1.</b>	<b>Implement the following Simple Servlet applications.</b>
a.	Create a simple calculator application using servlet.
b.	Create a servlet for a login page. If the username and password are correct then it says message “Hello <username>” else a message “login failed”
c.	Create a registration servlet in Java using JDBC. Accept the details such as Username, Password, Email, and Country from the user using HTML Form and store the registration details in the database.
<b>2.</b>	<b>Implement the following Servlet applications with Cookies and Sessions.</b>
a.	Using Request Dispatcher Interface create a Servlet which will validate the password entered by the user, if the user has entered "Servlet" as password, then he will be forwarded to Welcome Servlet else the user will stay on the index.html page and an error message will be displayed.
b.	Create a servlet that uses Cookies to store the number of times a user has visited servlet.
c.	Create a servlet demonstrating the use of session creation and destruction. Also check whether the user has visited this page first time or has visited earlier also using sessions.
<b>3.</b>	<b>Implement the Servlet IO and File applications.</b>
a.	Create a Servlet application to upload and download a file.
b.	Develop Simple Servlet Question Answer Application using Database.
c.	Create simple Servlet application to demonstrate Non-Blocking Read Operation.
<b>4.</b>	<b>Implement the following JSP applications.</b>
a.	Develop a simple JSP application to display values obtained from the use of intrinsic objects of various types.
b.	Develop a simple JSP application to pass values from one page to another with validations. (Name-txt, age-txt, hobbies-checkbox, email-txt, gender-radio button).
c.	Create a registration and login JSP application to register and authenticate the user based on username and password using JDBC.
<b>5.</b>	<b>Implement the following JSP JSTL and EL Applications.</b>
a.	Create an html page with fields, eno, name, age, desg, salary. Now on submit this data to a JSP page which will update the employee table of database with matching eno.
b.	Create a JSP page to demonstrate the use of Expression language.
c.	Create a JSP application to demonstrate the use of JSTL.

<b>6.</b>	<b>Implement the following EJB Applications.</b>
a.	Create a Currency Converter application using EJB.
b.	Develop a Simple Room Reservation System Application Using EJB.
c.	Develop simple shopping cart application using EJB [Stateful Session Bean].
<b>7.</b>	<b>Implement the following EJB applications with different types of Beans.</b>
a.	Develop simple EJB application to demonstrate Servlet Hit count using Singleton Session Beans.
b.	Develop simple visitor Statistics application using Message Driven Bean [Stateless Session Bean].
c.	Develop simple Marks Entry Application to demonstrate accessing Database using EJB.
<b>8.</b>	<b>Implement the following JPA applications.</b>
a.	Develop a simple Inventory Application Using JPA.
b.	Develop a Guestbook Application Using JPA.
c.	Create simple JPA application to store and retrieve Book details.
<b>9.</b>	<b>Implement the following JPA applications with ORM and Hibernate.</b>
a.	Develop a JPA Application to demonstrate use of ORM associations.
b.	Develop a Hibernate application to store Feedback of Website Visitor in MySQL Database.
c.	Develop a Hibernate application to store and retrieve employee details in MySQL Database.
<b>10.</b>	<b>Implement the following Hibernate applications.</b>
a.	Develop an application to demonstrate Hibernate One- To -One Mapping Using Annotation.
b.	Develop Hibernate application to enter and retrieve course details with ORM Mapping.
c.	Develop a five page web application site using any two or three Java EE Technologies.

<b>B. Sc. (Information Technology)</b>		<b>Semester – V</b>	
<b>Course Name: Next Generation Technologies Practical</b>		<b>Course Code: USIT5P7 (Elective II)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>--</b>

<b>Practical No</b>	<b>Details</b>
<b>1</b>	<b>MongoDB Basics</b>
<b>a</b>	Write a MongoDB query to create and drop database.
<b>b</b>	Write a MongoDB query to create, display and drop collection
<b>c</b>	Write a MongoDB query to insert, query, update and delete a document.
<b>2</b>	<b>Simple Queries with MongoDB</b>
<b>3</b>	<b>Implementing Aggregation</b>
<b>a</b>	Write a MongoDB query to use sum, avg, min and max expression.
<b>b</b>	Write a MongoDB query to use push and addToSet expression.
<b>c</b>	Write a MongoDB query to use first and last expression.
<b>4</b>	<b>Replication, Backup and Restore</b>
<b>a</b>	Write a MongoDB query to create Replica of existing database.
<b>b</b>	Write a MongoDB query to create a backup of existing database.
<b>c</b>	Write a MongoDB query to restore database from the backup.
<b>5</b>	<b>Java and MongoDB</b>
<b>a</b>	Connecting Java with MongoDB and inserting, retrieving, updating and deleting.
<b>6</b>	<b>PHP and MongoDB</b>
<b>a</b>	Connecting PHP with MongoDB and inserting, retrieving, updating and deleting.
<b>7</b>	<b>Python and MongoDB</b>
<b>a</b>	Connecting Python with MongoDB and inserting, retrieving, updating and deleting.
<b>8</b>	<b>Programs on Basic jQuery</b>
<b>a</b>	jQuery Basic, jQuery Events
<b>b</b>	jQuery Selectors, jQuery Hide and Show effects
<b>c</b>	jQuery fading effects, jQuery Sliding effects

<b>9</b>	<b>jQuery Advanced</b>
<b>a</b>	jQuery Animation effects, jQuery Chaining
<b>b</b>	jQuery Callback, jQuery Get and Set Contents
<b>c</b>	jQuery Insert Content, jQuery Remove Elements and Attribute
<b>10</b>	<b>JSON</b>
<b>a</b>	Creating JSON
<b>b</b>	Parsing JSON
<b>c</b>	Persisting JSON
<b>11</b>	<b>Create a JSON file and import it to MongoDB</b>
<b>a</b>	Export MongoDB to JSON.
<b>b</b>	Write a MongoDB query to delete JSON object from MongoDB

# **SEMESTER VI**

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Software Quality Assurance</b>		<b>Course Code: USIT601</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Introduction to Quality:</b> Historical Perspective of Quality, What is Quality? (Is it a fact or perception?), Definitions of Quality, Core Components of Quality, Quality View, Financial Aspect of Quality, Customers, Suppliers and Processes, Total Quality Management (TQM), Quality Principles of Total Quality Management, Quality Management Through Statistical Process Control, Quality Management Through Cultural Changes, Continual (Continuous) Improvement Cycle, Quality in Different Areas, Benchmarking and Metrics, Problem Solving Techniques, Problem Solving Software Tools.</p> <p><b>Software Quality:</b> Introduction, Constraints of Software Product Quality Assessment, Customer is a King, Quality and Productivity Relationship, Requirements of a Product, Organisation Culture, Characteristics of Software, Software Development Process, Types of Products, Schemes of Criticality Definitions, Problematic Areas of Software Development Life Cycle, Software Quality Management, Why Software Has Defects? Processes Related to Software Quality, Quality Management System Structure, Pillars of Quality Management System, Important Aspects of Quality Management.</p>	<b>12</b>
<b>II</b>	<p><b>Fundamentals of testing:</b> Introduction, Necessity of testing, What is testing? Fundamental test process, The psychology of testing, Historical Perspective of Testing, Definitions of Testing, Approaches to Testing, Testing During Development Life Cycle, Requirement Traceability Matrix, Essentials of Software Testing, Workbench, Important Features of Testing Process, Misconceptions About Testing, Principles of Software Testing, Salient Features of Good Testing, Test Policy, Test Strategy or Test Approach, Test Planning, Testing Process and Number of Defects Found in Testing, Test Team Efficiency, Mutation Testing, Challenges in Testing, Test Team Approach, Process Problems Faced by Testing, Cost Aspect of Testing, Establishing Testing Policy, Methods, Structured Approach to Testing, Categories of Defect, Defect, Error, or Mistake in Software, Developing Test Strategy, Developing Testing Methodologies (Test Plan), Testing Process, Attitude Towards Testing (Common People Issues), Test Methodologies/Approaches, People Challenges in Software Testing, Raising Management Awareness for Testing, Skills Required by Tester,</p>	<b>12</b>



	Testing throughout the software life cycle, Software development models, Test levels, Test types, the targets of testing, Maintenance testing	
<b>III</b>	<b>Unit Testing: Boundary Value Testing:</b> Normal Boundary Value Testing, Robust Boundary Value Testing, Worst-Case Boundary Value Testing, Special Value Testing, Examples, Random Testing, Guidelines for Boundary Value Testing, <b>Equivalence Class Testing:</b> Equivalence Classes, Traditional Equivalence Class Testing, Improved Equivalence Class Testing, Edge Testing, Guidelines and Observations. <b>Decision Table–Based Testing:</b> Decision Tables, Decision Table Techniques, Cause-and-Effect Graphing, Guidelines and Observations, <b>Path Testing:</b> Program Graphs, DD-Paths, Test Coverage Metrics, Basis Path Testing, Guidelines and Observations, <b>Data Flow Testing:</b> Define/Use Testing, Slice-Based Testing, Program Slicing Tools.	<b>12</b>
<b>IV</b>	<b>Software Verification and Validation:</b> Introduction, Verification, Verification Workbench, Methods of Verification, Types of reviews on the basis of Stage Phase, Entities involved in verification, Reviews in testing lifecycle, Coverage in Verification, Concerns of Verification, Validation, Validation Workbench, Levels of Validation, Coverage in Validation, Acceptance Testing, Management of Verification and Validation, Software development verification and validation activities. <b>V-test Model:</b> Introduction, V-model for software, Testing during Proposal stage, Testing during requirement stage, Testing during test planning phase, Testing during design phase, Testing during coding, VV Model, Critical Roles and Responsibilities.	<b>12</b>
<b>V</b>	<b>Levels of Testing:</b> Introduction, Proposal Testing, Requirement Testing, Design Testing, Code Review, Unit Testing, Module Testing, Integration Testing, Big-Bang Testing, Sandwich Testing, Critical Path First, Sub System Testing, System Testing, Testing Stages. <b>Special Tests:</b> Introduction, GUI testing, Compatibility Testing, Security Testing, Performance Testing, Volume Testing, Stress Testing, Recovery Testing, Installation Testing, Requirement Testing, Regression Testing, Error Handling Testing, Manual Support Testing, Intersystem Testing, Control Testing, Smoke Testing, Adhoc Testing, Parallel Testing, Execution Testing, Operations Testing, Compliance Testing, Usability Testing, Decision Table Testing, Documentation Testing, Training testing, Rapid Testing, Control flow graph, Generating tests on the basis of Combinatorial Designs, State Graph, Risk Associated with New Technologies, Process maturity level of Technology, Testing Adequacy of Control in New technology usage, Object Oriented Application Testing, Testing of Internal Controls, COTS Testing, Client Server Testing, Web Application Testing, Mobile Application Testing, eBusiness eCommerce Testing, Agile Development Testing, Data Warehousing Testing.	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Software Testing and Continuous Quality Improvement	William E. Lewis	CRC Press	Third	2016
2	Software Testing: Principles, Techniques and Tools	M. G. Limaye	TMH		2017
3.	Foundations of Software Testing	Dorothy Graham, Erik van Veenendaal, Isabel Evans, Rex Black	Cengage Learning	3 <sup>rd</sup>	
4.	Software Testing: A Craftsman's Approach	Paul C. Jorgenson	CRC Press	4 <sup>th</sup>	2017

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Security in Computing</b>		<b>Course Code: USIT602</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Information Security Overview :</b> The Importance of Information Protection, The Evolution of Information Security, Justifying Security Investment, Security Methodology, How to Build a Security Program, The Impossible Job, The Weakest Link, Strategy and Tactics, Business Processes vs. Technical Controls.</p> <p><b>Risk Analysis:</b> Threat Definition, Types of Attacks, Risk Analysis.</p> <p><b>Secure Design Principles:</b> The CIA Triad and Other Models, Defense Models, Zones of Trust, Best Practices for Network Defense.</p>	<b>12</b>
<b>II</b>	<p><b>Authentication and Authorization:</b> Authentication, Authorization</p> <p><b>Encryption:</b> A Brief History of Encryption, Symmetric-Key Cryptography, Public Key Cryptography, Public Key Infrastructure.</p> <p><b>Storage Security:</b> Storage Security Evolution, Modern Storage Security, Risk Remediation, Best Practices.</p> <p><b>Database Security:</b> General Database Security Concepts, Understanding Database Security Layers, Understanding Database-Level Security, Using Application Security, Database Backup and Recovery, Keeping Your Servers Up to Date, Database Auditing and Monitoring.</p>	<b>12</b>
<b>III</b>	<p><b>Secure Network Design:</b> Introduction to Secure Network Design, Performance, Availability, Security.</p> <p><b>Network Device Security:</b> Switch and Router Basics, Network Hardening.</p> <p><b>Firewalls:</b> Overview, The Evolution of Firewalls, Core Firewall Functions, Additional Firewall Capabilities, Firewall Design.</p> <p><b>Wireless Network Security:</b> Radio Frequency Security Basics, Data-Link Layer Wireless Security Features, Flaws, and Threats, Wireless Vulnerabilities and Mitigations, Wireless Network Hardening Practices and Recommendations, Wireless Intrusion Detection and Prevention, Wireless Network Positioning and Secure Gateways.</p>	<b>12</b>
<b>IV</b>	<p><b>Intrusion Detection and Prevention Systems:</b> IDS Concepts, IDS Types and Detection Models, IDS Features, IDS Deployment Considerations, Security Information and Event Management (SIEM).</p> <p><b>Voice over IP (VoIP) and PBX Security:</b> Background, VoIP Components, VoIP Vulnerabilities and Countermeasures, PBX, TEM: Telecom Expense Management.</p> <p><b>Operating System Security Models:</b> Operating System Models, Classic Security Models, Reference Monitor, Trustworthy Computing, International Standards for Operating System Security.</p>	<b>12</b>

<b>V</b>	<b>Virtual Machines and Cloud Computing:</b> Virtual Machines, Cloud Computing. <b>Secure Application Design:</b> Secure Development Lifecycle, Application Security Practices, Web Application Security, Client Application Security, Remote Administration Security. <b>Physical Security:</b> Classification of Assets, Physical Vulnerability Assessment, Choosing Site Location for Security, Securing Assets: Locks and Entry Controls, Physical Intrusion Detection.	<b>12</b>
----------	---	-----------

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	The Complete Reference: Information Security	Mark Rhodes-Ousley	McGraw-Hill	2 <sup>nd</sup>	2013
2.	Essential Cybersecurity Science	Josiah Dykstra	O'Reilly	Fifth	2017
3.	Principles of Computer Security: CompTIA Security+ and Beyond	Wm.Arthur Conklin, Greg White	McGraw Hill	Second	2010

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Business Intelligence</b>		<b>Course Code: USIT603</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Business intelligence:</b> Effective and timely decisions, Data, information and knowledge, The role of mathematical models, Business intelligence architectures, Ethics and business intelligence</p> <p><b>Decision support systems:</b> Definition of system, Representation of the decision-making process, Evolution of information systems, Definition of decision support system, Development of a decision support system</p>	<b>12</b>
<b>II</b>	<p><b>Mathematical models for decision making:</b> Structure of mathematical models, Development of a model, Classes of models</p> <p><b>Data mining:</b> Definition of data mining, Representation of input data , Data mining process, Analysis methodologies</p> <p><b>Data preparation:</b> Data validation, Data transformation, Data reduction</p>	<b>12</b>
<b>III</b>	<p><b>Classification:</b> Classification problems, Evaluation of classification models, Bayesian methods, Logistic regression, Neural networks, Support vector machines</p> <p><b>Clustering:</b> Clustering methods, Partition methods, Hierarchical methods, Evaluation of clustering models</p>	<b>12</b>
<b>IV</b>	<p><b>Business intelligence applications:</b></p> <p><b>Marketing models:</b> Relational marketing, Sales force management,</p> <p><b>Logistic and production models:</b> Supply chain optimization, Optimization models for logistics planning, Revenue management systems.</p> <p><b>Data envelopment analysis:</b> Efficiency measures, Efficient frontier, The CCR model, Identification of good operating practices</p>	<b>12</b>
<b>V</b>	<p><b>Knowledge Management:</b> Introduction to Knowledge Management, Organizational Learning and Transformation, Knowledge Management Activities, Approaches to Knowledge Management, Information Technology (IT) In Knowledge Management, Knowledge Management Systems Implementation, Roles of People in Knowledge Management</p> <p><b>Artificial Intelligence and Expert Systems:</b></p> <p>Concepts and Definitions of Artificial Intelligence, Artificial Intelligence Versus Natural Intelligence, Basic Concepts of Expert Systems, Applications of Expert Systems, Structure of Expert Systems, Knowledge Engineering, Development of Expert Systems</p>	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Business Intelligence: Data Mining and Optimization for Decision Making	Carlo Vercellis	Wiley	First	2009
2.	Decision support and Business Intelligence Systems	Efraim Turban, Ramesh Sharda, Dursun Delen	Pearson	Ninth	2011
3.	Fundamental of Business Intelligence	Grossmann W, Rinderle-Ma	Springer	First	2015

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Principles of Geographic Information Systems</b>		<b>Course Code: USIT604 (Elective I)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>A Gentle Introduction to GIS</b>  <b>The nature of GIS:</b> Some fundamental observations, Defining GIS, GISystems, GIScience and GIApplications, Spatial data and Geoinformation.  <b>The real world and representations of it:</b> Models and modelling, Maps, Databases, Spatial databases and spatial analysis</p> <p><b>Geographic Information and Spatial Database Models and Representations of the real world</b>  <b>Geographic Phenomena:</b> Defining geographic phenomena, types of geographic phenomena, Geographic fields, Geographic objects, Boundaries  <b>Computer Representations of Geographic Information:</b> Regular tessellations, irregular tessellations, Vector representations, Topology and Spatial relationships, Scale and Resolution, Representation of Geographic fields, Representation of Geographic objects  <b>Organizing and Managing Spatial Data</b>  <b>The Temporal Dimension</b></p>	<b>12</b>
<b>II</b>	<p><b>Data Management and Processing Systems</b>  <b>Hardware and Software Trends</b>  <b>Geographic Information Systems:</b> GIS Software, GIS Architecture and functionality, Spatial Data Infrastructure (SDI)  <b>Stages of Spatial Data handling:</b> Spatial data handling and preparation, Spatial Data Storage and maintenance, Spatial Query and Analysis, Spatial Data Presentation.  <b>Database management Systems:</b> Reasons for using a DBMS, Alternatives for data management, The relational data model, Querying the relational database.  <b>GIS and Spatial Databases:</b> Linking GIS and DBMS, Spatial database functionality.</p>	<b>12</b>
<b>III</b>	<p><b>Spatial Referencing and Positioning</b>  <b>Spatial Referencing:</b> Reference surfaces for mapping, Coordinate Systems, Map Projections, Coordinate Transformations</p>	<b>12</b>

	<p><b>Satellite-based Positioning:</b> Absolute positioning, Errors in absolute positioning, Relative positioning, Network positioning, code versus phase measurements, Positioning technology</p> <p><b>Data Entry and Preparation</b>  <b>Spatial Data Input:</b> Direct spatial data capture, Indirect spatial data capture, Obtaining spatial data elsewhere  <b>Data Quality:</b> Accuracy and Positioning, Positional accuracy, Attribute accuracy, Temporal accuracy, Lineage, Completeness, Logical consistency  <b>Data Preparation:</b> Data checks and repairs, Combining data from multiple sources  <b>Point Data Transformation:</b> Interpolating discrete data, Interpolating continuous data</p>	
<b>IV</b>	<p><b>Spatial Data Analysis</b>  <b>Classification of analytical GIS Capabilities</b>  <b>Retrieval, classification and measurement:</b> Measurement, Spatial selection queries, Classification  <b>Overlay functions:</b> Vector overlay operators, Raster overlay operators  <b>Neighbourhood functions:</b> Proximity computations, Computation of diffusion, Flow computation, Raster based surface analysis  <b>Analysis:</b> Network analysis, interpolation, terrain modeling  <b>GIS and Application models:</b> GPS, Open GIS Standards, GIS Applications and Advances  <b>Error Propagation in spatial data processing:</b> How Errors propagate, Quantifying error propagation</p>	<b>12</b>
<b>V</b>	<p><b>Data Visualization</b>  <b>GIS and Maps, The Visualization Process</b>  <b>Visualization Strategies: Present or explore?</b>  <b>The cartographic toolbox:</b> What kind of data do I have?, How can I map my data?  <b>How to map?:</b> How to map qualitative data, How to map quantitative data, How to map the terrain elevation, How to map time series  <b>Map Cosmetics, Map Dissemination</b></p>	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Principles of Geographic Information Systems- An Introductory Text Book	Editors: Otto Huisman and Rolf A.	The International Institute of Geoinformation Science and Earth Observation	Fourth	2009



2.	Principles of Geographic Information Systems	P.A Burrough and R.A.McDonnell	Oxford University Press	Third	1999
3.	Fundamentals of Spatial Information Systems,	R.Laurini and D. Thompson,	Academic Press		1994
4.	Fundamentals of Geographic Information Systems	Michael N.Demers	Wiley Publications	Fourth	2009
5.	Introduction to Geographic Information Systems	Chang Kang-tsung (Karl),	McGrawHill	Any above 3 <sup>rd</sup> Edition	2013 7 <sup>th</sup> Edition
6.	GIS Fundamentals: A First Text on Geographic Information Systems	Paul Bolsatd	XanEdu Publishing Inc	5 <sup>th</sup> Edition	

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Enterprise Networking</b>		<b>Course Code: USIT605 (Elective II)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>General Network Design:</b> Network Design Methodology, Architectures for the Enterprise, Borderless Networks Architecture, Collaboration and Video Architecture, Data Center and Virtualization Architecture, Design Lifecycle: Plan, Build, Manage Plan Phase Build Phase Manage Phase Prepare, Plan, Design, Implement, Operate, and Optimize Phases Prepare Phase Plan Phase Design Phase Implement Phase Operate Phase Optimize Phase Summary of PPDIOO Phases Project Deliverables Design Methodology Identifying Customer Design Requirements Characterizing the Existing Network Steps in Gathering Information Network Audit Tools Network Checklist Designing the Network Topology and Solutions Top-Down Approach Pilot and Prototype Tests Design Document</p> <p><b>Network Design Models:</b> Hierarchical Network Models Benefits of the Hierarchical Model, Hierarchical Network Design, Core Layer, Distribution Layer, Access Layer, Hierarchical Model Examples, Hub-and-Spoke, Design Collapsed Core, Design Enterprise Architecture Model, Enterprise Campus Module, Enterprise Edge Area, E-Commerce Module, Internet Connectivity Module, VPN/Remote Access, Enterprise WAN, Service Provider Edge Module, Remote Modules, Enterprise Branch Module, Enterprise Data Center Module, Enterprise Teleworker Module, High Availability Network Services, Workstation-to-Router Redundancy and LAN, High Availability Protocols, ARP Explicit Configuration, RDP, RIP, HSRP, VRRP, GLBP, Server Redundancy, Route Redundancy, Load Balancing, Increasing Availability, Link Media Redundancy</p>	<b>12</b>
<b>II</b>	<p><b>Enterprise LAN Design:</b> LAN Media, Ethernet Design Rules, 100Mbps Fast Ethernet Design Rules, Gigabit Ethernet Design Rules, 1000BASE-LX Long-Wavelength Gigabit Ethernet, 1000BASE-SX Short-Wavelength Gigabit Ethernet, 1000BASE-CX Gigabit Ethernet over Coaxial Cable, 1000BASE-T Gigabit Ethernet over UTP 86, 10 Gigabit Ethernet Design Rules, 10GE Media Types, EtherChannel, Comparison of Campus Media LAN Hardware, Repeaters, Hubs, Bridges, Switches, Routers, Layer 3 Switches, Campus LAN Design and Best Practices Best Practices for Hierarchical Layers, Access Layer Best Practices, Distribution Layer Best Practices, Core Layer Best Practices, STP Design Considerations, STP Toolkit, PortFast,</p>	<b>12</b>

	<p>UplinkFast, BackboneFast, Loop Guard, Root Guard, BPDU Guard, BPDU Filter, VLAN and Trunk Considerations, Unidirectional Link Detection (UDLD) Protocol, Large-Building LANs, Enterprise Campus LANs, Edge Distribution, Medium-Size LANs, Small and Remote Site LANs, Server Farm Module, Server Connectivity Options, Enterprise Data Center Infrastructure, Campus LAN QoS Considerations, Multicast Traffic Considerations, CGMP, IGMP Snooping.</p> <p><b>Data Center Design:</b> Enterprise DC Architecture, Data Center Foundation Components, Data Center Topology Components, Data Center Network Programmability, SDN, Controllers, APIs, ACI, Challenges in the DC, Data Center Facility Aspects, Data Center Space, Data Center Power, Data Center Cooling, Data Center Heat, Data Center Cabling, Enterprise DC Infrastructure, Data Center Storage, Data Center Reference Architecture, Defining the DC Access Layer, Defining the DC Aggregation Layer, Defining the DC Core Layer, Security in the DC, Fabric Extenders, Virtualization Overview, Challenges, Defining Virtualization and Benefits, Virtualization Risks, Types of Virtualization, Virtualization Technologies, VSS, VRF, vPC, Device Contexts, Server Virtualization, Server Scaling, Virtual Switching, Network Virtualization Design Considerations, Access Control, Path Isolation, Services Edge, Data Center Interconnect, DCI Use Cases, DCI Transport Options, DCI L2 Considerations, Load Balancing in the DC, Application Load Balancing, Network Load Balancing.</p>	
<b>III</b>	<p><b>Wireless LAN Design:</b> Wireless LAN Technologies, WLAN Standards, ISM and UNII Frequencies, Summary of WLAN Standards, Service Set Identifier, WLAN Layer 2 Access Method, WLAN Security, Unauthorized Access, WLAN Security Design Approach, IEEE 802.1X-2001 Port-Based Authentication, Dynamic WEP Keys and LEAP, Controlling WLAN Access to Servers, WLAN Authentication, Authentication Options, WLAN Controller Components, WLC Interface Types, AP Controller Equipment Scaling, Roaming and Mobility Groups, Intracontroller Roaming, Layer 2 Intercontroller Roaming, Layer 3 Intercontroller Roaming, Mobility Groups, WLAN Design, Controller Redundancy Design: Deterministic vs. Dynamic, N+1 WLC Redundancy, N+N WLC Redundancy, N+N+1 WLC Redundancy, Radio Management and Radio Groups, RF Groups, RF Site Survey, Using EoIP Tunnels for Guest Services, Wireless Mesh for Outdoor Wireless, Mesh Design Recommendations, Campus Design Considerations, Power over Ethernet (PoE), Wireless and Quality of Service (QoS), Branch Design Considerations, Local MAC, REAP, Hybrid REAP, Branch Office Controller Options.</p> <p><b>WAN Technologies and the Enterprise Edge:</b> WAN and Enterprise Edge Overview, Definition of WAN, WAN Edge Module, Enterprise</p>	<b>12</b>

	<p>Edge Modules, WAN Transport Technologies, ISDN, ISDN BRI Service, ISDN PRI Service, Digital Subscriber Line, Cable, Wireless, Frame Relay, Time-Division Multiplexing, Metro Ethernet, SONET/SDH, Multiprotocol Label Switching (MPLS), Dark Fiber, Dense Wavelength-Division Multiplexing, Ordering WAN Technology and Contracts, WAN and Edge Design Methodologies, Response Time, Throughput, Reliability, Bandwidth Considerations, WAN Link Categories, Optimizing Bandwidth Using QoS, Queuing, Traffic Shaping and Policing, Classification, Congestion Management, Priority Queuing, Custom Queuing, Weighted Fair Queuing, Class-Based Weighted Fair Queuing, Low-Latency Queuing, Traffic Shaping and Policing, Link Efficiency, Window Size, DMZ Connectivity, Segmenting DMZs, DMZ Services, Internet Connectivity, Centralized Internet (Branch) vs. Direct Internet (Branch), High Availability for the Internet Edge, VPN Network Design.</p> <p><b>WAN Design</b>  Traditional WAN Technologies Hub-and-Spoke Topology  Full-Mesh Topology Partial-Mesh Topology Point-to-Point Topology  Remote Site Connectivity  Enterprise VPN vs. Service Provider VPN Enterprise Managed VPN:  IPsec IPsec Direct Encapsulation Generic Routing Encapsulation IPsec  DMVPN IPsec Virtual Tunnel Interface Design GETVPN Service  Provider–Managed Offerings ,Metro Ethernet Service Provider VPNs:  L2 vs. L3 ,Virtual Private Wire Services VPWS L2 VPN  Considerations ,Virtual Private LAN Services VPLS L2 VPN  Considerations ,MPLS, MPLS Layer 3 Design Overview MPLS L3  VPN Considerations ,VPN Benefits WAN Backup Design WAN  Backup over the Internet Enterprise WAN Architecture Cisco  Enterprise MAN/WAN Enterprise WAN/MAN Architecture  Comparison ,Enterprise WAN Components Comparing Hardware and  Software Enterprise Branch Architecture Branch Design Branch  Connectivity Redundancy for Branches Single WAN Carrier vs. Dual  WAN Carriers Single MPLS Carrier Site ,Dual MPLS Carriers Hybrid  WAN: L3 VPN with IPsec VPN ,Internet for Branches Flat Layer 2 vs.  Collapsed Core ,Enterprise Branch Profiles Small Branch Design  Medium Branch Design Large Branch Design Enterprise Teleworker  Design ,ISRs for Teleworkers</p>	
<b>IV</b>	<p>Internet Protocol Version 4 Design,IPv4 Header ToS IPv4  Fragmentation IPv4 Addressing ,IPv4 Address Classes Class A  Addresses Class B Addresses ,Class C Addresses Class D Addresses  Class E Addresses ,IPv4 Address Types IPv4 Private Addresses NAT  ,IPv4 Address Subnets Mask Nomenclature IP Address Subnet Design  Example Determining the Network Portion of an IP Address Variable-  Length Subnet Masks, Loopback Addresses IP Telephony Networks  ,IPv4 Addressing Design Goal of IPv4 Address Design , Plan for Future  Use of IPv4 Addresses , Performing Route Summarization , Plan for a</p>	<b>12</b>

	<p> Hierarchical IP Address Network , Private and Public IP Address and NAT Guidelines , Steps for Creating an IPv4 Address Plan  Case Study: IP Address Subnet Allocation , Address Assignment and Name Resolution , Recommended Practices of IP Address Assignment , BOOTP DHCP DNS , Internet Protocol Version 6 Design, IPv6 Header IPv6 Address Representation IPv4-Compatible IPv6 Addresses IPv6 Prefix Representation IPv6 Address Scope Types and Address Allocations IPv6 Address Allocations IPv6 Unicast Address Global Unicast Addresses Link-Local Addresses , Unique Local IPv6 Address Global Aggregatable IPv6 Address , IPv4-Compatible IPv6 Address IPv6 Anycast Addresses , IPv6 Multicast Addresses IPv6 Mechanisms ICMPv6 , IPv6 Neighbor Discovery Protocol IPv6 Name Resolution , Path MTU Discovery IPv6 Address-Assignment Strategies , Manual Configuration SLAAC of Link-Local Address , SLAAC of Globally Unique IPv6 Address DHCPv6 , DHCPv6 Lite IPv6 Security IPv6 Routing Protocols  RIPng OSPFv3 , BGP4 Multiprotocol Extensions (MP-BGP) for IPv6 , IPv6 Addressing Design , Planning for Addressing with IPv6 , Route Summarization with IPv6 IPv6 Private Addressing  IPv6 for the Enterprise IPv6 Address Allocation , Partly Linked IPv4 Address into IPv6, Whole IPv4 Address Linked into IPv6  IPv6 Addresses Allocated Per Location and/or Type , IPv4-to-IPv6 Transition Mechanisms and Deployment Models , Dual-Stack Mechanism IPv6 over IPv4 Tunnels , Protocol Translation Mechanisms IPv6 Deployment Models , Dual-Stack Model Hybrid Model Service Block Model ,IPv6 Deployment Model Comparison IPv6 Comparison with IPv4 ,OSPF, BGP, Route Manipulation, and IP Multicast,OSPFv2 OSPFv2 Metric OSPFv2 Adjacencies and Hello Timers , OSPFv2 Areas OSPF Area Design Considerations OSPF Router Types OSPF DRs LSA Types Autonomous System External Path Types OSPF Stub Area Types Stub Areas Totally Stubby Areas , NSSAs Virtual Links OSPFv2 Router Authentication , OSPFv2 Summary OSPFv3 OSPFv3 Changes from OSPFv2, OSPFv3 Areas and Router Types OSPFv3 LSAs OSPFv3 Summary  BGP BGP Neighbors eBGP iBGP Route Reflectors Confederations BGP Administrative Distance , BGP Attributes, Weight, and the BGP Decision Process  BGP Path Attributes Next-Hop Attribute Local Preference Attribute Origin Attribute Autonomous System Path Attribute  MED Attribute Community Attribute Atomic Aggregate and Aggregator Attributes Weight BGP Decision Process , BGP Summary , Route Manipulation PBR Route Summarization  Route Redistribution Default Metric OSPF Redistribution Route Filtering Transit Traffic Routing Protocols on the Hierarchical Network Infrastructure IP Multicast Review , Multicast Addresses Layer 3 to Layer 2 Mapping IGMP , IGMPv1 IGMPv2 IGMPv3 CGMP IGMP Snooping , Sparse Versus Dense Multicast Multicast Source and Shared </p>	
--	---	--

	Trees PIM PIM-SM PIM DR Auto-RP PIMv2 Bootstrap Router , DVMRP IPv6 Multicast Addresses	
<b>V</b>	<p>Managing Security</p> <p>Network Security Overview Security Legislation Security Threats Reconnaissance and Port Scanning Vulnerability Scanners Unauthorized Access Security Risks Targets Loss of Availability Integrity Violations and Confidentiality Breaches , Security Policy and Process Security Policy Defined , Basic Approach of a Security Policy Purpose of Security Policies, Security Policy Components Risk Assessment , Risk Index Continuous Security Integrating Security Mechanisms into Network Design Trust and Identity Management , Trust Domains of Trust Identity Passwords Tokens Certificates , Network Access Control Secure Services Encryption Fundamentals Encryption Keys VPN Protocols , Transmission Confidentiality Data Integrity Threat Defense , Physical Security Infrastructure Protection Security Management Solutions Security Solution Network Security Platforms , Trust and Identity Technologies Firewall Fundamentals , Types of Firewalls Next-Gen Firewalls NAT Placement , Firewall Guidelines Firewall ACLs , Identity and Access Control Deployments Detecting and Mitigating Threats IPS/IDS Fundamentals IPS/IDS Guidelines , Threat Detection and Mitigation Technologies , Threat- Detection and Threat-Mitigation Solutions , FirePOWER IPS Security Management Applications , Security Platform Solutions Security Management Network</p> <p>Integrating Security into Network Devices IOS Security , ISR G2 Security Hardware Options Securing the Enterprise , Implementing Security in the Campus Implementing Security in the Data Center Implementing Security in the Enterprise Edge</p> <p>Network Management Protocols, Simple Network Management Protocol SNMP Components , MIB SNMP Message Versions SNMPv1 SNMPv2 SNMPv3 , Other Network Management Technologies RMON , RMON2 NetFlow Compared to RMON and SNMP , CDP LLDP Syslog</p>	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	CCDA200-310Official Cert Guide	ANTHONY BRUNO, CCIE No. 2738 STEVE JORDAN, CCIE No. 11293	<b>Cisco Press</b>		
2.	Network Warrior	Gary A Donabue	<b>O Reilly</b>	2 <sup>nd</sup>	2011

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: IT Services Management</b>		<b>Course Code: USIT606 (Elective I)</b>	
<b>Periods per week (1 Period is 50 minutes),</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>IT Service Management:</b> Introduction, What is service management? What are services? Business Process, Principles of Service management: Specialisation and Coordination, The agency principle, Encapsulation, Principles of systems, The service Life Cycle, Functions and processes across the life cycle.</p> <p><b>Service Strategy Principles:</b> Value creation, Service Assets, Service Provider Service Structures, Service Strategy Principles.</p> <p><b>Service Strategy:</b> Define the market, Develop the offerings, Develop Strategic Assets, Prepare for execution.</p> <p><b>Challenges, Critical Success factors and risks:</b> Complexity, Coordination and Control, Preserving value, Effectiveness in measurement, Risks.</p>	<b>12</b>
<b>II</b>	<p><b>Service Design:</b> Fundamentals, <b>Service Design Principles:</b> Goals, Balanced Design, Identifying Service requirements, identifying and documenting business requirements and drivers, Design activities, Design aspects, Subsequent design activities, Design constraints, Service oriented architecture, Business Service Management, Service Design Models</p> <p><b>Service Design Processes:</b> Service Catalogue Management, Service Level Management, Capacity Management, Availability Management, IT Service Continuity Management, Information Security Management, Supplier Management</p> <p><b>Challenges, Critical Success factors and risks:</b> Challenges, Risks</p>	<b>12</b>
<b>III</b>	<p><b>Service Transition:</b> Fundamentals, <b>Service Transition Principles:</b> Principles Supporting Service Transition, Policies for Service Transition</p> <p><b>Service Transition Processes:</b> Transition planning and support, Change Management, Service Asses Configuration Management, Service and Deployment Management, Service Validation and Testing, Evaluation, Knowledge Management.</p> <p><b>Challenges, Critical Success factors and risks:</b> Challenges, Critical Success factors, Risks, Service Transition under difficult Conditions.</p>	<b>12</b>
<b>IV</b>	<p><b>Service Operation:</b> Fundamentals, <b>Service Operation Principles:</b> Functions, groups, teams, departments and divisions, Achieving balance in service operations, Providing service, Operation staff involvement in service design and service transition, Operational Health, Communication, Documentation</p>	<b>12</b>

	<p><b>Service Operation Processes:</b> Event Management, Incident Management, Request fulfilment, Problem Management, Access Management, Operational activities of processes covered in other lifecycle phases.</p> <p><b>Challenges, Critical Success factors and risks:</b> Challenges, Critical Success factors, Risks</p>	
V	<p><b>Continual Service Improvement(CSI) Principles:</b> CSI Approach, CSI and organizational change, Ownership, CSI register, External and Internal drivers, Service level management, Knowledge management, The Deming cycle, Service Measurement, IT governance, Frameworks, models, standards and quality Systems, CSI inputs and outputs.</p> <p><b>CSI Process:</b> The seven step improvement process. <b>CSI Methods nad Techniques:</b> Methods and techniques, Assessments, benchmarking, Service Measurement, Metrics, Return on Investment, Service reporting, CSI and other service management processes, <b>Organising for CSI:</b> Organisational development, Functions, roles, Customer Engagement, Responsibility model - RACI, Competence and training.</p> <p><b>Technology considerations:</b> Tools to support CSI activities.</p> <p><b>Implementing CSI:</b> Critical Considerations for implementing CSI, The start, Governance, CSI and organisational change, Communication Strategy and Plan</p>	12

Books and References:					
Sr. No.	Title	Author/s	Publisher	Edition	Year
1.	ITIL v3 Foundation Complete Certification Kit				2009
2.	ITIL v3 Service Strategy		OGC/TSO		
3.	ITIL v3 Service Transition		OGC/TSO		
4.	ITIL v3 Service Operation		OGC/TSO		
5.	ITIL Continual Service Improvement		TSO	2011	2011



<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Cyber Laws</b>		<b>Course Code: USIT607 (Elective I)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>5</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Theory Examination</b>	<b>2½</b>	<b>75</b>
	<b>Internal</b>	<b>--</b>	<b>25</b>

<b>Unit</b>	<b>Details</b>	<b>Lectures</b>
<b>I</b>	<p><b>Power of Arrest Without Warrant Under the IT Act, 2000:</b> A Critique, Crimes of this Millennium, Section 80 of the IT Act, 2000 – A Weapon or a Farce? Forgetting the Line Between Cognizable and Non-Cognizable Offences, Necessity of Arrest without Warrant from Any Place, Public or Otherwise, Check and Balances Against Arbitrary Arrests, Arrest for “About to Commit” an Offence Under the IT Act: A Tribute to Draco, Arrest, But NO Punishment!</p> <p><b>Cyber Crime and Criminal Justice: Penalties, Adjudication and Appeals Under the IT Act, 2000:</b> Concept of “Cyber Crime “ and the IT Act , 2000, Hacking, Teenage Web Vandals, Cyber Fraud and Cyber Cheating, Virus on the Internet, Defamation, Harassment and E-mail Abuse, Cyber Pornography, Other IT Act Offences, Monetary Penalties, Adjudication and Appeals Under IT Act , 2000, Network Service Providers, Jurisdiction and Cyber Crime, Nature of Cyber Criminality, Strategies to Tackle Cyber Crime and Trends, Criminal Justice in India and Implications on Cyber Crime.</p>	<b>12</b>
<b>II</b>	<p><b>Contracts in the Infotech World:</b> Contracts in the Infotech World, Click-Wrap and Shrink-Wrap Contract: Status under the Indian Contract Act, 1872, Contract Formation Under the Indian Contract Act, 1872, Contract Formation on the Internet, Terms and Conditions of Contracts.</p> <p><b>Jurisdiction in the Cyber World:</b> Questioning the Jurisdiction and Validity of the Present Law of Jurisdiction, Civil Law of Jurisdiction in India, Cause of Action, Jurisdiction and the Information Technology Act,2000, Foreign Judgements in India, Place of Cause of Action in Contractual and IPR Disputes, Exclusion Clauses in Contracts, Abuse of Exclusion Clauses, Objection of Lack of Jurisdiction, Misuse of the Law of Jurisdiction, Legal Principles on Jurisdiction in the United State of America, Jurisdiction Disputes w.r.t. the Internet in the United State of America.</p>	<b>12</b>
<b>III</b>	<p><b>Battling Cyber Squatters and Copyright Protection in the Cyber World:</b> Concept of Domain Name and Reply to Cyber Squatters, Meta-Tagging, Legislative and Other Innovative Moves Against Cyber Squatting, The Battle Between Freedom and Control on the Internet, Works in Which Copyright Subsists and meaning of Copyright, Copyright Ownership and Assignment, License of Copyright, Copyright Terms and Respect for Foreign Works, Copyright</p>	<b>12</b>

	Infringement, Remedies and Offences, Copyright Protection of Content on the Internet; Copyright Notice, Disclaimer and Acknowledgement, Downloading for Viewing Content on the Internet, Hyper-Linking and Framing, Liability of ISPs for Copyright Violation in the Cyber World: Legal Developments in the US, Napster and its Cousins: A Revolution on the Internet but a Crisis for Copyright Owners, Computer Software Piracy.	
<b>IV</b>	<p><b>E-Commerce Taxation: Real Problems in the Virtual World:</b> A Tug of War on the Concept of 'Permanent Establishment', Finding the PE in Cross Border E-Commerce, The United Nations Model Tax Treaty, The Law of Double Taxation Avoidance Agreements and Taxable Jurisdiction Over Non-Residents, Under the Income Tax Act, 1961, Tax Agents of Non-Residents under the Income Tax Act, 1961 and the Relevance to E-Commerce, Source versus Residence and Classification between Business Income and Royalty, The Impact of the Internet on Customer Duties, Taxation Policies in India: At a Glance.</p> <p><b>Digital Signature, Certifying Authorities and E-Governance:</b> Digital Signatures, Digital Signature Certificate, Certifying Authorities and Liability in the Event of Digital Signature Compromise, E-Governance in India: A Warning to Babudom!</p>	<b>12</b>
<b>V</b>	<p><b>The Indian Evidence Act of 1872 v. Information Technology Act, 2000:</b> Status of Electronic Records as Evidence, Proof and Management of Electronic Records; Relevancy, Admissibility and Probative Value of E-Evidence, Proving Digital Signatures, Proof of Electronic Agreements, Proving Electronic Messages, Other Amendments in the Indian Evidence Act by the IT Act, Amendments to the Bankers Books Evidence Act, 1891 and Reserve Bank of India Act, 1934.</p> <p><b>Protection of Cyber Consumers in India:</b> Are Cyber Consumers Covered Under the Consumer Protection Act? Goods and Services, Consumer Complaint, Defect in Goods and Deficiency in Services, Restrictive and Unfair Trade Practices, Instances of Unfair Trade Practices, Reliefs Under CPA, Beware Consumers, Consumer Foras, Jurisdiction and Implications on cyber Consumers in India, Applicability of CPA to Manufacturers, Distributors, Retailers and Service Providers Based in Foreign Lands Whose Goods are Sold or Services Provided to a Consumer in India.</p> <p>Amendments in Indian IT Act 2000</p>	<b>12</b>

<b>Books and References:</b>					
<b>Sr. No.</b>	<b>Title</b>	<b>Author/s</b>	<b>Publisher</b>	<b>Edition</b>	<b>Year</b>
1.	Cyber Law Simplified	Vivek Sood	TMH Education		2001
2.	Cybersecurity Law	Jeff Kosseff	Wiley		2017

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Project Implementation</b>		<b>Course Code: USIT6P1</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>-</b>

The details are given in Appendix – I

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Security in Computing Practical</b>		<b>Course Code: USIT6P2</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>-</b>

<b>Practical No</b>	<b>Details</b>
<b>1</b>	<b>Configure Routers</b>
<b>a</b>	OSPF MD5 authentication.
<b>b</b>	NTP.
<b>c</b>	to log messages to the syslog server.
<b>d</b>	to support SSH connections.
<b>2</b>	<b>Configure AAA Authentication</b>
<b>a</b>	Configure a local user account on Router and configure authenticate on the console and vty lines using local AAA
<b>b</b>	Verify local AAA authentication from the Router console and the PC-A client
<b>3</b>	<b>Configuring Extended ACLs</b>
<b>a</b>	<b>Configure, Apply and Verify an Extended Numbered ACL</b>
<b>4</b>	<b>Configure IP ACLs to Mitigate Attacks and IPV6 ACLs</b>
<b>a</b>	Verify connectivity among devices before firewall configuration.
<b>b</b>	Use ACLs to ensure remote access to the routers is available only from management station PC-C.
<b>c</b>	Configure ACLs on to mitigate attacks.
<b>d</b>	Configuring IPv6 ACLs
<b>5</b>	<b>Configuring a Zone-Based Policy Firewall</b>
<b>6</b>	<b>Configure IOS Intrusion Prevention System (IPS) Using the CLI</b>
<b>a</b>	Enable IOS IPS.
<b>b</b>	Modify an IPS signature.
<b>7</b>	<b>Layer 2 Security</b>
<b>a</b>	Assign the Central switch as the root bridge.
<b>b</b>	Secure spanning-tree parameters to prevent STP manipulation attacks.
<b>c</b>	Enable port security to prevent CAM table overflow attacks.
<b>8</b>	<b>Layer 2 VLAN Security</b>
<b>9</b>	<b>Configure and Verify a Site-to-Site IPsec VPN Using CLI</b>

<b>10</b>	<b>Configuring ASA Basic Settings and Firewall Using CLI</b>
<b>a</b>	Configure basic ASA settings and interface security levels using CLI
<b>b</b>	Configure routing, address translation, and inspection policy using CLI
<b>c</b>	Configure DHCP, AAA, and SSH
<b>d</b>	Configure a DMZ, Static NAT, and ACLs

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Business Intelligence Practical</b>		<b>Course Code: USIT6P3</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>-</b>

<b>Practical No</b>	<b>Details</b>
<b>1</b>	Import the legacy data from different sources such as ( Excel , SqlServer, Oracle etc.) and load in the target system. ( You can download sample database such as Adventureworks, Northwind, foodmart etc.)
<b>2</b>	Perform the Extraction Transformation and Loading (ETL) process to construct the database in the Sqlserver.
<b>3</b>	a. Create the Data staging area for the selected database. b. Create the cube with suitable dimension and fact tables based on ROLAP, MOLAP and HOLAP model.
<b>4</b>	a.Create the ETL map and setup the schedule for execution. b. Execute the MDX queries to extract the data from the datawarehouse.
<b>5</b>	a. Import the datawarehouse data in Microsoft Excel and create the Pivot table and Pivot Chart. b. Import the cube in Microsoft Excel and create the Pivot table and Pivot Chart to perform data analysis.
<b>6</b>	Apply the what – if Analysis for data visualization. Design and generate necessary reports based on the data warehouse data.
<b>7</b>	Perform the data classification using classification algorithm.
<b>8</b>	Perform the data clustering using clustering algorithm.
<b>9</b>	Perform the Linear regression on the given data warehouse data.
<b>10</b>	Perform the logistic regression on the given data warehouse data.

The BI tools such as Tableau / Power BI / BIRT / R / Excel or any other can be used.

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Principles of Geographical Information System Practical</b>		<b>Course Code: USIT6P4 (Elective II)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>-</b>

<b>Practical No</b>	<b>Details</b>
<b>0</b>	Familiarizing Quantum GIS: Installation of QGIS, datasets for both Vector and Raster data, Maps.
<b>1</b>	Creating and Managing Vector Data: Adding vector layers, setting properties, formatting, calculating line lengths and statistics
<b>2</b>	Exploring and Managing Raster data: Adding raster layers, raster styling and analysis, raster mosaicking and clipping
<b>3</b>	Making a Map, Working with Attributes, Importing Spreadsheets or CSV files Using Plugins, Searching and Downloading OpenStreetMap Data
<b>4</b>	Working with attributes, terrain Data
<b>5</b>	Working with Projections and WMS Data
<b>6</b>	Georeferencing Topo Sheets and Scanned Maps Georeferencing Aerial Imagery Digitizing Map Data
<b>7</b>	Managing Data Tables and Spatial data Sets: Table joins, spatial joins, points in polygon analysis, performing spatial queries
<b>8</b>	Advanced GIS Operations 1: Nearest Neighbor Analysis, Sampling Raster Data using Points or Polygons, Interpolating Point Data
<b>9</b>	Advanced GIS Operations 2: Batch Processing using Processing Framework Automating Complex Workflows using Processing Modeler Automating Map Creation with Print Composer Atlas
<b>10</b>	Validating Map data

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Advanced Networking Practical</b>		<b>Course Code: USIT6P5 (Elective II)</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>-</b>

<b>Practical No</b>	<b>Details</b>
<b>1</b>	<b>Configuring OSPF – I</b>
a	Single-Area OSPF Link Costs and Interface Priorities
b	Multi-Area OSPF with Stub Areas and Authentication
<b>2</b>	<b>Configuring OSPF – II</b>
a	OSPF Virtual Links and Area Summarization
b	OSPF over Frame Relay
<b>3</b>	<b>Redistribution and Administrative Distances</b>
a	Redistribution Between RIP and OSPF
b	Manipulating Administrative Distances
<b>4</b>	<b>BGP</b>
a	Configuring BGP with Default Routing
b	Using the AS_PATH Attribute
c	BGP Route Reflectors and Route Filters
<b>5</b>	<b>IPv6</b>
a	Configuring OSPF for IPv6
b	Configuring 6to4 Tunnels
<b>6</b>	<b>VLANs and EtherChannel</b>
a	Static VLANs, VLAN Trunking, and VTP Domains and Modes
b	Configuring EtherChannel
<b>7</b>	<b>Spanning Tree Protocol</b>
a	Spanning Tree Protocol (STP) Default Behavior
b	Modifying Default Spanning Tree Behavior
<b>8</b>	<b>VLAN and Spanning Tree</b>
a	Per-VLAN Spanning Tree Behavior
b	Multiple Spanning Tree



<b>9</b>	<b>Internal VLAN Routing</b>
a	Inter-VLAN Routing with an External Router
b	Inter-VLAN Routing with an Internal Route Processor
<b>10</b>	<b>Configure NAT Services</b>

<b>B. Sc. (Information Technology)</b>		<b>Semester – VI</b>	
<b>Course Name: Advanced Mobile Programming Practical</b>		<b>Course Code: USIT6P6</b>	
<b>Periods per week (1 Period is 50 minutes)</b>		<b>3</b>	
<b>Credits</b>		<b>2</b>	
		<b>Hours</b>	<b>Marks</b>
<b>Evaluation System</b>	<b>Practical Examination</b>	<b>2½</b>	<b>50</b>
	<b>Internal</b>	<b>--</b>	<b>--</b>

<b>Practical No</b>	<b>Details</b>
<b>1</b>	<b>Introduction to Android, Introduction to Android Studio IDE, Application Fundamentals:</b> Creating a Project, Android Components, Activities, Services, Content Providers, Broadcast Receivers, Interface overview, Creating Android Virtual device, USB debugging mode, Android Application Overview. Simple “Hello World” program.
<b>2</b>	<b>Programming Resources</b> Android Resources: (Color, Theme, String, Drawable, Dimension, Image),
<b>3</b>	<b>Programming Activities and fragments</b> Activity Life Cycle, Activity methods, Multiple Activities, Life Cycle of fragments and multiple fragments.
<b>4</b>	<b>Programs related to different Layouts</b> Coordinate, Linear, Relative, Table, Absolute, Frame, List View, Grid View.
<b>5</b>	<b>Programming UI elements</b> AppBar, Fragments, UI Components
<b>6</b>	<b>Programming menus, dialog, dialog fragments</b>
<b>7</b>	<b>Programs on Intents, Events, Listeners and Adapters</b> The Android Intent Class, Using Events and Event Listeners
<b>8</b>	<b>Programs on Services, notification and broadcast receivers</b>
<b>9</b>	<b>Database Programming with SQLite</b>
<b>10</b>	<b>Programming threads, handles and asynchronized programs</b>
<b>11</b>	<b>Programming Media API and Telephone API</b>
<b>12</b>	<b>Programming Security and permissions</b>
<b>13</b>	<b>Programming Network Communications and Services (JSON)</b>

# **APPENDIX – 1**

# **Project Dissertation Semester V and Project Implementation Semester VI**

Chapter 1 to 4 should be submitted in Semester V in spiral binding. These chapter have also to be included in Semester VI report. Semester VI report has to be hard bound with golden embossing. Students will be evaluated based on the dissertation in semester V and dissertation and viva voce in Semester VI.

## **I. OBJECTIVES**

- Describe the Systems Development Life Cycle (SDLC).
- Evaluate systems requirements.
- Complete a problem definition.
- Evaluate a problem definition.
- Determine how to collect information to determine requirements.
- Perform and evaluate feasibility studies like cost-benefit analysis, technical feasibility, time feasibility and Operational feasibility for the project.
- Work on data collection methods for fact finding.
- Construct and evaluate data flow diagrams.
- Construct and evaluate data dictionaries.
- Evaluate methods of process description to include structured English, decision tables and decision trees.
- Evaluate alternative tools for the analysis process.
- Create and evaluate such alternative graphical tools as systems flow charts and state transition diagrams.
- Decide the S/W requirement specifications and H/W requirement specifications.
- Plan the systems design phase of the SDLC.
- Distinguish between logical and physical design requirements.
- Design and evaluate system outputs.
- Design and evaluate systems inputs.
- Design and evaluate validity checks for input data.

- Design and evaluate user interfaces for input.
- Design and evaluate file structures to include the use of indexes.
- Estimate storage requirements.
- Explain the various file update processes based on the standard file organizations.
- Decide various data structures.
- Construct and evaluate entity-relationship (ER) diagrams for RDBMS related projects.
- Perform normalization for the unnormalized tables for RDBMS related projects
- Decide the various processing systems to include distributed, client/server, online and others.
- Perform project cost estimates using various techniques.
- Schedule projects using both GANTT and PERT charts.
- Perform coding for the project.
- Documentation requirements and prepare and evaluate systems documentation.
- Perform various systems testing techniques/strategies to include the phases of testing.
- Systems implementation and its key problems.
- Generate various reports.
- Be able to prepare and evaluate a final report.
- Brief the maintenance procedures and the role of configuration management in operations.
- To decide the future scope and further enhancement of the system.
- Plan for several appendices to be placed in support with the project report documentation.
- Decide the various processing systems to include distributed, client/server, online and others.
- Perform project cost estimates using various techniques.
- Schedule projects using both GANTT and PERT charts.
- Perform coding for the project.
- Documentation requirements and prepare and evaluate systems documentation.
- Perform various systems testing techniques/strategies to include the phases of testing.
- Systems implementation and its key problems.
- Generate various reports.
- Be able to prepare and evaluate a final report.
- Brief the maintenance procedures and the role of configuration management in operations.
- To decide the future scope and further enhancement of the system.
- Plan for several appendices to be placed in support with the project report documentation.

- Work effectively as an individual or as a team member to produce correct, efficient, well-organized and documented programs in a reasonable time.
- Recognize problems that are amenable to computer solutions, and knowledge of the tool necessary for solving such problems.
- Develop of the ability to assess the implications of work performed.
- Get good exposure and command in one or more application areas and on the software
- Develop quality software using the software engineering principles
- Develop of the ability to communicate effectively.

## II. Type of the Project

The majority of the students are expected to work on a real-life project preferably in some industry/ Research and Development Laboratories/Educational Institution/Software Company. Students are encouraged to work in the areas listed below. However, it is ***not mandatory*** for a student to work on a real-life project. The student can formulate a project problem with the help of her/his Guide and submit the project proposal of the same. **Approval of the project proposal is mandatory.** If approved, the student can commence working on it, and complete it. Use the latest versions of the software packages for the development of the project.

## III. SOFTWARE AND BROAD AREAS OF APPLICATION

<b>FRONT END / GUI Tools</b>	.Net Technologies,Java
<b>DBMS/BACK END</b>	Oracle, SQL Plus, MY SQL, SQL Server,
<b>LANGUAGES</b>	C, C++, Java, VC++, C#, R,Python
<b>SCRIPTING LANGUAGES</b>	PHP,JSP, SHELL Scripts (Unix), Tcl/Tk,
<b>.NET Platform</b>	F#,C#. Net, Visual C#. Net, ASP.Net
<b>MIDDLE WARE (COMPONENT) TECHNOLOGIES</b>	COM/DCOM, Active-X, EJB
<b>UNIX INTERNALS</b>	Device Drivers, RPC, Threads, Socket programming
<b>NETWORK/WIRELESS TECHNOLOGIES</b>	-

<b>REALTIME OPERATING SYSTEM/ EMBEDDED SKILLS</b>	LINUX, Raspberry Pi, Arduino, 8051
<b>APPLICATION AREAS</b>	Financial / Insurance / Manufacturing / Multimedia / Computer Graphics / Instructional Design/ Database Management System/ Internet / Intranet / Computer Networking-Communication Software development/ E-Commerce/ ERP/ MRP/ TCP-IP programming / Routing protocols programming/ Socket programming.

#### **IV. Introduction**

The project report should be documented with scientific approach to the solution of the problem that the students have sought to address. The project report should be prepared in order to solve the problem in a methodical and professional manner, making due references to appropriate techniques, technologies and professional standards. The student should start the documentation process from the first phase of software development so that one can easily identify the issues to be focused upon in the ultimate project report. The student should also include the details from the project diary, in which they will record the progress of their project throughout the course. The project report should contain enough details to enable examiners to evaluate the work. The important points should be highlighted in the body of the report, with details often referred to appendices.

##### **1.1 PROJECT REPORT:**

Title Page

Original Copy of the Approved Proforma of the Project Proposal

Certificate of Authenticated work

Role and Responsibility Form

Abstract

Acknowledgement

Table of Contents

Table of Figures

#### **CHAPTER 1: INTRODUCTION**

1.1 Background

1.2 Objectives

1.3 Purpose, Scope, and Applicability

1.3.1 Purpose

1.3.2 Scope

1.3.3 Applicability

1.4 Achievements

1.5 Organisation of Report

## CHAPTER 2: SURVEY OF TECHNOLOGIES

## CHAPTER 3: REQUIREMENTS AND ANALYSIS

3.1 Problem Definition

3.2 Requirements Specification

3.3 Planning and Scheduling

3.4 Software and Hardware Requirements

3.5 Preliminary Product Description

3.6 Conceptual Models

## CHAPTER 4: SYSTEM DESIGN

4.1 Basic Modules

4.2 Data Design

4.2.1 Schema Design

4.2.2 Data Integrity and Constraints

4.3 Procedural Design

4.3.1 Logic Diagrams

4.3.2 Data Structures

4.3.3 Algorithms Design

4.4 User interface design

4.5 Security Issues

4.6 Test Cases Design

The documentation should use tools like star UML, Visuo for windows, Rational Rose for design as part of Software Project Management Practical Course. The documentation should be spiral bound for semester V and the entire documentation should be hard bound during semester VI.

## CHAPTER 5: IMPLEMENTATION AND TESTING

5.1 Implementation Approaches

5.2 Coding Details and Code Efficiency



5.2.1 Code Efficiency

5.3 Testing Approach

5.3.1 Unit Testing

5.3.2 Integrated Testing

5.3.3 Beta Testing

5.4 Modifications and Improvements

5.5 Test Cases

## CHAPTER 6: RESULTS AND DISCUSSION

6.1 Test Reports

6.2 User Documentation

## CHAPTER 7: CONCLUSIONS

7.1 Conclusion

7.1.1 Significance of the System

7.2 Limitations of the System

7.3 Future Scope of the Project

## REFERENCES

## GLOSSARY

## APPENDIX A

## APPENDIX B

## **V. EXPLANATION OF CONTENTS**

### Title Page

Sample format of Title page is given in Appendix 1 of this block. Students should follow the given format.

### Original Copy of the Approved Proforma of the Project Proposal

Sample Proforma of Project Proposal is given in Appendix 2 of this block. Students should follow the given format.

### Certificate of Authenticated work

Sample format of Certificate of Authenticated work is given in Appendix 3 of this block. Students should follow the given format.

### Role and Responsibility Form

Sample format for Role and Responsibility Form is given in Appendix 4 of this block.

Students should follow the given format.

### Abstract

This should be one/two short paragraphs (100-150 words total), summarising the project work. It is important that this is not just a re-statement of the original project outline. A suggested flow is background, project aims and main achievements. From the abstract, a reader should be able to ascertain if the project is of interest to them and, it should present results of which they may wish to know more details.

### Acknowledgements

This should express student's gratitude to those who have helped in the preparation of project.

**Table of Contents:** The table of contents gives the readers a view of the detailed structure of the report. The students would need to provide section and subsection headings with associated pages. The formatting details of these sections and subsections are given below.

**Table of Figures:** List of all Figures, Tables, Graphs, Charts etc. along with their page numbers in a table of figures.

### Chapter 1: Introduction

The introduction has several parts as given below:

**Background:** A description of the background and context of the project and its relation to work already done in the area. Summarise existing work in the area concerned with the project work.

**Objectives:** Concise statement of the aims and objectives of the project. Define exactly what is going to be done in the project; the objectives should be about 30 /40 words.

**Purpose, Scope and Applicability:** The description of Purpose, Scope, and Applicability are given below:

- **Purpose:** Description of the topic of the project that answers questions on why this project is being done. How the project could improve the system its significance and theoretical framework.
- **Scope:** A brief overview of the methodology, assumptions and limitations. The students should answer the question: What are the main issues being covered in the project? What are the main functions of the project?
- **Applicability:** The student should explain the direct and indirect applications of their work. Briefly discuss how this project will serve the computer world and people.

**Achievements:** Explain what knowledge the student achieved after the completion of the work. What contributions has the project made to the chosen area? Goals achieved - describes the degree to which the findings support the original objectives laid out by the project. The goals may be partially or fully achieved, or exceeded.

**Organisation of Report:** Summarising the remaining chapters of the project report, in effect, giving the reader an overview of what is to come in the project report.

## Chapter 2: Survey of Technologies

In this chapter Survey of Technologies should demonstrate the students awareness and understanding of Available Technologies related to the topic of the project. The student should give the detail of all the related technologies that are necessary to complete the project. The should describe the technologies available in the chosen area and present a comparative study of all those Available Technologies. Explain why the student selected the one technology for the completion of the objectives of the project.

## Chapter 3: Requirements and Analysis

**Problem Definition:** Define the problem on which the students are working in the project.

Provide details of the overall problem and then divide the problem into sub-problems. Define each sub-problem clearly.

**Requirements Specification:** In this phase the student should define the requirements of the system, independent of how these requirements will be accomplished. The Requirements Specification describes the things in the system and the actions that can be done on these things. Identify the operation and problems of the existing system.

**Planning and Scheduling:** Planning and scheduling is a complicated part of software development. Planning, for our purposes, can be thought of as determining all the small tasks that must be carried out in order to accomplish the goal. Planning also takes into account, rules, known as constraints, which, control when certain tasks can or cannot happen. Scheduling can be thought of as determining whether adequate resources are available to carry out the plan. The student should show the Gantt chart and Program Evaluation Review Technique (PERT).

**Software and Hardware Requirements:** Define the details of all the software and hardware needed for the development and implementation of the project.

- **Hardware Requirement:** In this section, the equipment, graphics card, numeric co-processor, mouse, disk capacity, RAM capacity etc. necessary to run the software must be noted.
- **Software Requirements:** In this section, the operating system, the compiler, testing tools, linker, and the libraries etc. necessary to compile, link and install the software must be listed.

**Preliminary Product Description:** Identify the requirements and objectives of the new system. Define the functions and operation of the application/system the students are developing as project.

**Conceptual Models:** The student should understand the problem domain and produce a model of the system, which describes operations that can be performed on the system, and the allowable sequences of those operations. Conceptual Models could consist of complete Data Flow Diagrams, ER diagrams, Object-oriented diagrams, System Flowcharts etc.

## Chapter 4: System Design

Describes desired features and operations in detail, including screen layouts, business rules, process diagrams, pseudocode and other documentation.

**Basic Modules:** The students should follow the divide and conquer theory, so divide the overall problem into more manageable parts and develop each part or module separately. When all modules are ready, the student should integrate all the modules into one system. In this phase, the student should briefly describe all the modules and the functionality of these modules.

**Data Design:** Data design will consist of how data is organised, managed and manipulated.

- **Schema Design:** Define the structure and explanation of schemas used in the project.
- **Data Integrity and Constraints:** Define and explain all the validity checks and constraints provided to maintain data integrity.

**Procedural Design:** Procedural design is a systematic way for developing algorithms or procedurals.

- **Logic Diagrams:** Define the systematical flow of procedure that improves its comprehension and helps the programmer during implementation. e.g., Control Flow Chart, Process Diagrams etc.
- **Data Structures:** Create and define the data structure used in procedures.
- **Algorithms Design:** With proper explanations of input data, output data, logic of processes, design and explain the working of algorithms.

**User Interface Design:** Define user, task, environment analysis and how to map those requirements in order to develop a “User Interface”. Describe the external and internal components and the architecture of user interface. Show some rough pictorial views of the user interface and its components.

**Security Issues:** Discuss Real-time considerations and Security issues related to the project and explain how the student intends avoiding those security problems. What are the security policy plans and architecture?

**Test Cases Design:** Define test cases, which will provide easy detection of errors and mistakes within a minimum period of time and with the least effort. Explain the different conditions in which the students wish to ensure the correct working of the project.

## Chapter 5: Implementation and Testing

**Implementation Approaches:** Define the plan of implementation, and the standards the students have used in the implementation.

Coding Details and Code Efficiency: Students not need include full source code, instead, include only the important codes (algorithms, applets code, forms code etc). The program code should contain comments needed for explaining the work a piece of code does. Comments may be needed to explain why it does it, or, why it does a particular way.

The student can explain the function of the code with a shot of the output screen of that program code.

- Code Efficiency: The student should explain how the code is efficient and how the students have handled code optimisation.

Testing Approach: Testing should be according to the scheme presented in the system design chapter and should follow some suitable model – e.g., category partition, state machine-based. Both functional testing and user-acceptance testing are appropriate. Explain the approach of testing.

- Unit Testing: Unit testing deals with testing a unit or module as a whole. This would test the interaction of many functions but, do confine the test within one module.
- Integrated Testing: Brings all the modules together into a special testing environment, then checks for errors, bugs and interoperability. It deals with tests for the entire application. Application limits and features are tested here.

Modifications and Improvements: Once the students finish the testing they are bound to be faced with bugs, errors and they will need to modify your source code to improve the system. Define what modification are implemented in the system and how it improved the system.

## Chapter 6: Results and Discussion

Test Reports: Explain the test results and reports based on the test cases, which should show that the project is capable of facing any problematic situation and that it works fine in different conditions. Take the different sample inputs and show the outputs.

User Documentation: Define the working of the software; explain its different functions, components with screen shots. The user document should provide all the details of the product in such a way that any user reading the manual, is able to understand the working and functionality of the document.

## Chapter 7: Conclusions

**Conclusion:** The conclusions can be summarised in a fairly short chapter (2 or 3 pages). This chapter brings together many of the points that would have made in the other chapters.

**Limitations of the System:** Explain the limitations encountered during the testing of the project that the students were not able to modify. List the criticisms accepted during the demonstrations of the project.

**Future Scope of the Project** describes two things: firstly, new areas of investigation prompted by developments in this project, and secondly, parts of the current work that was not completed due to time constraints and/or problems encountered.

## REFERENCES

It is very important that the students acknowledge the work of others that they have used or adapted in their own work, or that provides the essential background or context to the project. The use of references is the standard way to do this. Please follow the given standard for the references for books, journals, and online material. The citation is mandatory in both the reports.

E.g:

Linhares, A., & Brum, P. (2007). Understanding our understanding of strategic scenarios: What role do chunks play? *Cognitive Science*, 31(6), 989-1007.  
<https://doi.org/doi:10.1080/03640210701703725>

*Lipson, Charles (2011). Cite right : A quick guide to citation styles; MLA, APA, Chicago, the sciences, professions, and more (2nd ed.). Chicago [u.a.]: University of Chicago Press. p. 187. ISBN 9780226484648.*

Elaine Ritchie, J Knite. (2001). *Artificial Intelligence, Chapter 2 , p.p 23 - 44.* Tata McGrawHill.

## GLOSSARY

If you the students any acronyms, abbreviations, symbols, or uncommon terms in the project report then their meaning should be explained where they first occur. If they go on to use any of them extensively then it is helpful to list them in this section and define the meaning.

## APPENDICES

These may be provided to include further details of results, mathematical derivations, certain illustrative parts of the program code (e.g., class interfaces), user documentation etc.

In particular, if there are technical details of the work done that might be useful to others who wish to build on this work, but that are not sufficiently important to the project as a whole to justify being discussed in the main body of the project, then they should be included as appendices.

## VI. SUMMARY

Project development usually involves an engineering approach to the design and development of a software system that fulfils a practical need. Projects also often form an important focus for discussion at interviews with future employers as they provide a detailed example of what the students are capable of achieving. In this course the students can choose your project topic from the lists given in Unit 4: Category-wise Problem Definition.

## VII. FURTHER READINGS

1. Modern Systems Analysis and Design; Jeffrey A. Hoffer, Joey F. George, Joseph, S. Valacich; Pearson Education; Third Edition; 2002.
2. ISO/IEC 12207: Software Life Cycle Process  
(<http://www.software.org/quagmire/descriptions/iso-iec12207.asp>).
3. IEEE 1063: Software User Documentation (<http://ieeexplore.ieee.org>).
4. ISO/IEC: 18019: Guidelines for the Design and Preparation of User Documentation for Application Software.
5. <http://www.sce.carleton.ca/squall>.
6. <http://en.tldp.org/HOWTO/Software-Release-Practice-HOWTO/documentation.html>.
7. <http://www.sei.cmu.edu/cmm/>

--



## PROFORMA FOR THE APPROVAL PROJECT PROPOSAL

*(Note: All entries of the proforma of approval should be filled up with appropriate and complete information. Incomplete proforma of approval in any respect will be summarily rejected.)*

PNR No.: .....

Roll no: \_\_\_\_\_

1. Name of the Student

\_\_\_\_\_

2. Title of the Project

\_\_\_\_\_

3. Name of the Guide

\_\_\_\_\_

4. Teaching experience of the Guide \_\_\_\_\_

5. Is this your first submission?

Yes

☐

No

☐

Signature of the Student

Signature of the Guide

Date: .....

Date: .....

Signature of the Coordinator

Date: .....

(All the text in the report should be in times new roman)

# TITLE OF THE PROJECT

**(NOT EXCEEDING 2 LINES, 24 BOLD,  
ALL CAPS)**

**A Project Report (12 Bold)**

Submitted in partial fulfillment of the  
Requirements for the award of the Degree of (size-12)

**BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)(14 BOLD,  
CAPS)**

**By(12 Bold)**

Name of The Student (size-15, title case)  
Seat Number (size-15)

**Under the esteemed guidance of (13 bold)**

**Mr./Mrs. Name of The Guide (15 bold, title case)**  
**Designation (14 Bold, title case)**

**COLLEGE LOGO**

**DEPARTMENT OF INFORMATION TECHNOLOGY(12 BOLD, CAPS)**

**COLLEGE NAME (14 BOLD, CAPS)**

*(Affiliated to University of Mumbai) (12, Title case, bold, italic)*

**CITY, PIN CODE(12 bold, CAPS)**

**MAHARASHTRA (12 bold, CAPS)**

**YEAR (12 bold)**

**COLLEGE NAME (14 BOLD, CAPS)**  
*(Affiliated to University of Mumbai) (13, bold, italic)*  
**CITY-MAHARASHTRA-PINCODE(13 bold, CAPS)**

**DEPARTMENT OF INFORMATION TECHNOLOGY (14 BOLD, CAPS)**

**College Logo**

**CERTIFICATE (14 BOLD, CAPS, underlined, centered)**

This is to certify that the project entitled, "**Title of The Project** ", is bonafied work of **NAME OF THE STUDENT** bearing Seat.No: **(NUMBER)** submitted in partial fulfillment of the requirements for the award of degree of BACHELOR OF SCIENCE in INFORMATION TECHNOLOGY from University of Mumbai. (12, times new roman, justified)

**Internal Guide (12 bold)**

**Coordinator**

(Don't write names of lecturers or HOD)

**External Examiner**

**Date:**

**College Seal**

**COMPANY CERTIFICATE (if applicable)**

(Project Abstract page format)

# **Abstract (20bold, caps, centered)**

**Content (12, justified)**

**Note: Entire document should be with 1.5  
line spacing and all paragraphs should start with 1 tab space.**

# **ACKNOWLEDGEMENT**

**(20, BOLD, ALL CAPS, CENTERED)**

**The acknowledgement should be in times new roman, 12 font with 1.5 line spacing, justified.**

(Declaration page format)

## **DECLARATION (20 bold, centered, allcaps)**

**Content (12, justified)**

I here by declare that the project entitled, “**Title of the Project**” done at **place where the project is done**, has not been in any case duplicated to submit to any other university for the award of any degree. To the best of my knowledge other than me, no one has submitted to any other university.

The project is done in partial fulfillment of the requirements for the award of degree of **BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)** to be submitted as final semester project as part of our curriculum.

**Name and Signature of the Student**

# **TABLE OF CONTENTS (20bold, caps, centered)**

Should be generated automatically using word processing software.

<b>Chapter 1: Introduction</b>	01(no bold)
<b>1.1 Background</b>	02(no bold)
<b>1.2 Objectives</b>	....
<b>1.3 Purpose and Scope</b>	....
1.2.1Purpose	....
1.2.2Scope	

.....  
.....

<b>Chapter 2: System Analysis</b>	
<b>2.1 Existing System</b>	
<b>2.2 Proposed System</b>	
<b>2.3 Requirement Analysis</b>	
<b>2.4 Hardware Requirements</b>	
<b>2.5 Software Requirements</b>	
<b>2.6 Justification of selection of Technology</b>	

<b>Chapter 3: System Design</b>	
<b>3.1 Module Division</b>	
<b>3.2 Data Dictionary</b>	
<b>3.3 ER Diagrams</b>	
<b>3.4 DFD/UML Diagrams</b>	

## **Chapter 4: Implementation and Testing**

<b>4.1 Code (Place Core segments)</b>	
<b>4.2 Testing Approach</b>	
4.2.1Unit Testing (Test cases and Test Results)	
4.2.2 Integration System (Test cases and Test Results)	

## **Chapter 5: Results and Discussions (Output Screens)**

## **Chapter 6: Conclusion and Future Work**

## **Chapter 7: References**



## **List of Tables (20 bold, centered, Title Case)**

Should be generated automatically using word processing software.

## **List of Figures (20 bold, centered, Title Case)**

Should be generated automatically using word processing software.

**(Project Introduction page format)**

# **Chapter 1**

## **Introduction (20 Bold, centered)**

**Content or text (12, justified)**

**Note: Introduction has to cover brief description of the project with minimum 4 pages.**

## Chapter 2

### System Analysis (20 bold, Centered)

Subheadings are as shown below with following format (16 bold, CAPS)

#### 2.1 Existing System (16 Bold)

##### 2.1.1 ----- (14 bold, title case)

##### 2.1.1.1 ----- (12 bold, title case)

#### 2.2 Proposed System

#### 2.3 Requirement Analysis

#### 2.4 Hardware Requirements

#### 2.5 Software Requirements

#### 2.6 Justification of Platform – (how h/w & s/w satisfying the project)

Table 2.1: Caption


# Chapter 3

## System Design (20 bold, centered)

Subheadings are as shown below with following format (16 bold, CAPS)  
Specify figures as Fig 11.1 – caption

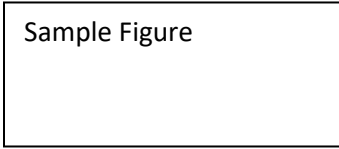
### **3.1 Module Division**

### **3.2 Data Dictionary**

### **3.3 E-R Diagrams**

### **3.4 Data Flow Diagrams / UML**

Note: write brief description at the bottom of all diagrams



Sample Figure

Fig. 3.1: Caption

# Chapter 4

## **Implementation and Testing (20 bold, centered)**

### **4.1 Code (Place Core segments)**

Content includes description about coding phase in your project (Font-12)

(\* don't include complete code-----just description)

### **4.2 Testing Approach**

Subheadings are as shown below with following format (16 bold, CAPS)

#### **4.2.1 Unit Testing**

#### **4.2.2 Integration Testing**

Note:

- Explain about above testing methods
- Explain how the above techniques are applied in your project  
Provide Test plans, test cases, etc relevant to your project

## **Chapter 5**

### **Results and Discussions (20 bold, centered)**

Note: Place Screen Shots and write the functionality of each screen at the bottom

## **Chapter 6**

### **Conclusion and Future Work (20 bold, centered)**

The conclusions can be summarized in a fairly short chapter around 300 words. Also include limitations of your system and future scope (12, justified)



# Chapter 7

## References (20 bold, centered)

Content (12, LEFT)

[1] Title of the book, Author

[2] Full URL of online references

[3] -----

### **\* NOTE ABOUT PROJECT VIVA VOCE:**

Student may be asked to write code for problem during VIVA to demonstrate his coding capabilities and he/she may be asked to write any segment of coding used in the in the project. The project can be done in group of at most four students. However, the length and depth of the project should be justified for the projects done in group. A big project can be modularised and different modules can be assigned as separate project to different students.

Marks Distribution:

**Semester V: 50 Marks**

Documentation: 50 marks

**Semester VI: 150 Marks**

Documentation: 50 Marks:

Implementation and Viva Voce: 100 Marks

*The plagiarism should be maintained as per the UGC guidelines.*

**UNIVERSITY OF MUMBAI****Syllabus for Approval**

<b>Sr. No.</b>	<b>Heading</b>	<b>Particulars</b>
1	Title of the Course	<b>Foundation Course (SYBA, SYBSc, SYBCom; Semesters III and IV)</b>
2	Eligibility for Admission	Not Applicable
3	Passing Marks	<b>40 %</b>
4	Ordinances / Regulations ( if any)	Not Applicable
5	No. of Years / Semesters	<b>III and IV Semesters</b>
6	Level	<del>P.G./</del> <b>U.G./</b> <del>Diploma / Certificate</del> ( Strike out which is not applicable)
7	Pattern	<del>Yearly /</del> <b>Semester</b> ( Strike out which is not applicable)
8	Status	<del>New /</del> <b>Revised</b> ( Strike out which is not applicable)
9	To be implemented from Academic Year	<b>From Academic Year 2017-18</b>

Date: **8<sup>th</sup> May, 2017**

Signature :

Name of BOS Chairperson /~~Dean~~ : **Dr Agnelo Menezes**

# UNIVERSITY OF MUMBAI



## Essentials Elements of the Syllabus

1	Title of the Course	<b>Foundation Course (SYBA, SYBSc, SYBCom – III and IV Semesters)</b>
2	Course Code	
3	Preamble / Scope	Not Applicable
4	Objective of Course / Course Outcome	Not Applicable
5	Eligibility	Not Applicable
6	Fee Structure	Not Applicable
7	No. of Lectures	<b>3 lectures per week</b>
8	No. of Practical	Not Applicable
9	Duration of the Course	<b>III and IV Semesters respectively</b>
10	Notional hours	Not Applicable
11	No. of Students per Batch	Not Applicable
12	Selection	Not Applicable
13	Assessment	Not Applicable
14	Syllabus Details	Given
15	Title of the Unit	Not Applicable
16	Title of the Sub-Unit	Not Applicable
17	Semester wise Theory	Not Applicable
18	Semester wise List of Practical	Not Applicable
19	Question Paper Pattern	Given
20	Pattern of Practical Exam	Not Applicable
21	Scheme of Evaluation of Project / <del>Internship</del>	Given
22	List of Suggested Reading	Given
23	List of Websites	Given
24	List of You-Tube Videos	Not Applicable
25	List of MOOCs	Not Applicable

**UNIVERSITY OF MUMBAI**

**SECOND YEAR B.A., SECOND YEAR B.Sc.,  
SECOND YEAR B.Com.**

**SEMESTER III AND IV**

**FOUNDATION COURSE**

**UNDER THE CBCGSS SYSTEM**

**EFFECTIVE FROM 2017-2018**

## **FOUNDATION COURSE**

### **Semester III**

**Internal marks: 25**

**External marks: 75**

**Total Marks: 100**

**Lectures: 45**

### **Objectives**

- i. Develop a basic understanding about issues related to Human Rights of weaker sections, ecology, and science and technology.
- ii. Gain an overview of significant skills required to address competition in career choices
- iii. Appreciate the importance of developing a scientific temper towards technology and its use in everyday life

### **Module 1 Human Rights Provisions, Violations and Redressal (12 lectures)**

- A. Scheduled Castes- Constitutional and legal rights, Forms of violations, Redressal mechanisms. **(2 Lectures)**
- B. Scheduled tribes- Constitutional and legal rights, Forms of violations, Redressal mechanisms. **(2 Lectures)**
- C. Women- Constitutional and legal rights, Forms of violations, Redressal mechanisms. **(2 Lectures)**
- D. Children- Constitutional and legal rights, Forms of violations, Redressal mechanisms. **(2 Lectures)**
- E. People with Disabilities, Minorities, and the Elderly population- Constitutional and legal rights, Forms of violations, Redressal mechanisms. **(4 Lectures)**

### **Module 2 Dealing With Environmental Concerns (11 lectures)**

- A. Concept of Disaster and general effects of Disasters on human life- physical, psychological, economic and social effects. **(3 Lectures)**
- B. Some locally relevant case studies of environmental disasters. **(2 Lectures)**
- C. Dealing with Disasters - Factors to be considered in Prevention, Mitigation (Relief and Rehabilitation) and disaster Preparedness. **(3 Lectures)**
- D. Human Rights issues in addressing disasters- issues related to compensation, equitable and fair distribution of relief and humanitarian approach to resettlement and rehabilitation. **(3 Lectures)**

### **Module 3 Science and Technology I (11 lectures)**

- A. **Development of Science**- the ancient cultures, the Classical era, the Middle Ages, the Renaissance, the Age of Reason and Enlightenment. **(3 Lectures)**
- B. **Nature of science**- its principles and characteristics; Science as empirical, practical, theoretical, validated knowledge. **(2 Lectures)**
- C. **Science and Superstition**- the role of science in exploding myths, blind beliefs and prejudices; Science and scientific temper- scientific temper as a fundamental duty of the Indian citizen. **(3 Lectures)**

- D. **Science in everyday life**- technology, its meaning and role in development; Interrelation and distinction between science and technology. **(3 Lectures)**

**Module 4 Soft Skills for Effective Interpersonal Communication (11 lectures)**

**Part A (4 Lectures)**

- I) Effective Listening - Importance and Features.
- II) Verbal and Non-Verbal Communication; Public-Speaking and Presentation Skills.
- III) Barriers to Effective Communication; Importance of Self-Awareness and Body Language.

**Part B (4 Lectures)**

- I) Formal and Informal Communication - Purpose and Types.
- II) Writing Formal Applications, Statement of Purpose (SOP) and Resume.
- III) Preparing for Group Discussions, Interviews and Presentations.

**Part C (3 Lectures)**

- I) Leadership Skills and Self-Improvement - Characteristics of Effective Leadership.
- II) Styles of Leadership and Team-Building.

**Projects / Assignments (for Internal Assessment)**

- i. Projects/Assignments should be drawn for the component on Internal Assessment from the topics in **Module 1 to Module 4**.
- ii. Students should be given a list of possible topics - at least 3 from each Module at the beginning of the semester.
- iii. The Project/Assignment can take the form of Street-Plays / Power-Point Presentations / Poster Exhibitions and similar other modes of presentation appropriate to the topic.
- iv. Students can work in groups of not more than 8 per topic.
- v. Students must submit a hard / soft copy of the Project / Assignment before appearing for the semester end examination.

**QUESTION PAPER PATTERN (Semester III)**

The Question Paper Pattern for Semester End Examination shall be as follows:

**TOTAL MARKS: 75**

**DURATION: 150 MINUTES**

QUESTION NUMBER	DESCRIPTION	MARKS ASSIGNED
1	i. Question 1 A will be asked on the meaning / definition of concepts / terms from all	a) Total marks: 15

	<p>Modules.</p> <p><b>ii.</b> Question 1 B will be asked on the topic of the Project / Assignment done by the student during the Semester</p> <p><b>iii.</b> In all 8 Questions will be asked out of which 5 have to be attempted.</p>	<p><b>b)</b>For 1 A, there will be 3 marks for each sub-question.</p> <p><b>c)</b>For 1 B there will be 15 marks without any break-up.</p>
<b>2</b>	Descriptive Question with internal option (A or B) on Module 1	15
<b>3</b>	Descriptive Question with internal option (A or B) on Module 2	15
<b>4</b>	Descriptive Question with internal option (A or B) on Module 3	15
<b>5</b>	Descriptive Question with internal option (A or B) on Module 4	15

## FOUNDATION COURSE

### Semester IV

**Internal marks: 25**

**External marks: 75**

**Total Marks: 100**

**Lectures: 45**

#### **Module 1      Significant, contemporary Rights of Citizens      (12 lectures)**

- A. Rights of Consumers**-Violations of consumer rights and important provisions of the Consumer Protection Act, 2016; Other important laws to protect consumers; Consumer courts and consumer movements. **(3 Lectures)**
- B. Right to Information**- Genesis and relation with transparency and accountability; important provisions of the Right to Information Act, 2005; some success stories. **(3 Lectures)**
- C. Protection of Citizens'/Public Interest**-Public Interest Litigation, need and procedure to file a PIL; some landmark cases. **(3 Lectures)**
- D. Citizens' Charters, Public Service Guarantee Acts.** **(3 Lectures)**

#### **Module 2      Approaches to understanding Ecology      (11 lectures)**

- A. Understanding approaches to ecology**- Anthropocentrism, Biocentrism and Eco centrism, Ecofeminism and Deep Ecology. **(3 Lectures)**
- B. Environmental Principles-1**: the sustainability principle; the polluter pays principle; the precautionary principle. **(4 Lectures)**
- C. Environmental Principles-2**: the equity principle; human rights principles; the participation principle. **(4 Lectures)**

#### **Module 3      Science and Technology II      (11 lectures)**

##### **Part A: Some Significant Modern Technologies, Features and Applications:** **(7 Lectures)**

- i. **Laser Technology**- Light Amplification by Stimulated Emission of Radiation; use of laser in remote sensing, GIS/GPS mapping, medical use.
- ii. **Satellite Technology**- various uses in satellite navigation systems, GPS, and imprecise climate and weather analyses.
- iii. **Information and Communication Technology**- convergence of various technologies like satellite, computer and digital in the information revolution of today's society.
- iv. **Biotechnology and Genetic engineering**- applied biology and uses in medicine, pharmaceuticals and agriculture; genetically modified plant, animal and human life.
- v. **Nanotechnology**- definition: the study, control and application of phenomena and materials at length scales below 100 nm; uses in medicine, military intelligence and consumer products.

##### **Part B:      Issues of Control, Access and Misuse of Technology.      (4 Lectures)**



**Module 4      Introduction to Competitive Examinations      (11 lectures)**

**Part A. Basic information on Competitive Examinations- the pattern, eligibility criteria and local centres:      (4 Lectures)**

- i. Examinations conducted for entry into professional courses - Graduate Record Examinations (GRE), Graduate Management Admission Test (GMAT), Common Admission Test (CAT) and Scholastic Aptitude Test (SAT).
- ii. Examinations conducted for entry into jobs by Union Public Service Commission, Staff Selection Commission (SSC), State Public Service Commissions, Banking and Insurance sectors, and the National and State Eligibility Tests (NET / SET) for entry into teaching profession.

**Part B.      Soft skills required for competitive examinations-      (7 Lectures)**

- i. Information on areas tested: Quantitative Ability, Data Interpretation, Verbal Ability and Logical Reasoning, Creativity and Lateral Thinking
- ii. Motivation: Concept, Theories and Types of Motivation
- iii. Goal-Setting: Types of Goals, SMART Goals, Stephen Covey's concept of human endowment
- iv. Time Management: Effective Strategies for Time Management
- v. Writing Skills: Paragraph Writing, Report Writing, Filing an application under the RTI Act, Consumer Grievance Letter.

**Projects / Assignments (for Internal Assessment)**

- i. Projects/Assignments should be drawn for the component on Internal Assessment from the topics in **Module 1 to Module 4**.
- ii. Students should be given a list of possible topics - at least 3 from each Module at the beginning of the semester.
- iii. The Project/Assignment can take the form of Street-Plays / Power-Point Presentations / Poster Exhibitions and similar other modes of presentation appropriate to the topic.
- iv. Students can work in groups of not more than 8 per topic.
- v. Students must submit a hard / soft copy of the Project / Assignment before appearing for the semester end examination.

**QUESTION PAPER PATTERN (Semester IV)**

The Question Paper Pattern for Semester End Examination shall be as follows:

**TOTAL MARKS: 75**

**DURATION: 150 MINUTES**

QUESTION NUMBER	DESCRIPTION	MARKS ASSIGNED
1	i. Question 1 A will be asked on the meaning / definition of concepts / terms from all Modules.	a) Total marks: 15 b) For 1 A, there will be 3 marks for each sub-question.

	<b>ii.</b> Question 1 B will be asked on the topic of the Project / Assignment done by the student during the Semester  <b>iii.</b> In all 8 Questions will be asked out of which 5 have to be attempted.	c) For 1 B there will be 15 marks without any break-up.
<b>2</b>	Descriptive Question with internal option (A or B) on Module 1	15
<b>3</b>	Descriptive Question with internal option (A or B) on Module 2	15
<b>4</b>	Descriptive Question with internal option (A or B) on Module 3	15
<b>5</b>	Descriptive Question with internal option (A or B) on Module 4	15

## References

1. Asthana, D. K., and Asthana, Meera, *Environmental Problems and Solutions*, S. Chand, New Delhi, 2012.
2. Bajpai, Asha, *Child Rights in India*, Oxford University Press, New Delhi, 2010.
3. Bhatnagar Mamta and Bhatnagar Nitin, *Effective Communication and Soft Skills*, Pearson India, New Delhi, 2011.
4. G Subba Rao, *Writing Skills for Civil Services Examination*, Access Publishing, New Delhi, 2014
5. Kaushal, Rachana, *Women and Human Rights in India*, Kaveri Books, New Delhi, 2000.
6. Mohapatra, Gaur Krishna Das, *Environmental Ecology*, Vikas, Noida, 2008.
7. Motilal, Shashi, and Nanda, Bijoy Lakshmi, *Human Rights: Gender and Environment*, Allied Publishers, New Delhi, 2007.

8. Murthy, D. B. N., *Disaster Management: Text and Case Studies*, Deep and Deep Publications, New Delhi, 2013.
9. Parsuraman, S., and Unnikrishnan, ed., *India Disasters Report II*, Oxford, New Delhi, 2013
10. Reza, B. K., *Disaster Management*, Global Publications, New Delhi, 2010.
11. Sathe, Satyaranjan P., *Judicial Activism in India*, Oxford University Press, New Delhi, 2003.
12. Singh, Ashok Kumar, *Science and Technology for Civil Service Examination*, Tata McGraw Hill, New Delhi, 2012.
13. Thorpe, Edgar, *General Studies Paper I Volume V*, Pearson, New Delhi, 2017.

**UNIVERSITY OF MUMBAI**

No. UG/210 of 2016-17

**CIRCULAR:-**

The Principals of the affiliated Colleges in Arts, Science and Commerce and the Heads of recognized Institutions concerned are hereby informed that the recommendation made by Ad-hoc Board of Studies in Lifelong Learning & Extension under Faculty of Arts, Science and Commerce at its meeting held on 29<sup>th</sup> June, 2016 has been accepted by the Academic Council at its meeting held on 14<sup>th</sup> July, 2016 vide item No. 4.84 and that in accordance therewith, the revised syllabus as per the Choice Based Credit System for Extension Work Subject for F.Y.B.A/B.Com./B.Sc. & other Professional Courses for Foundation Course approved by the Board of Studies in Extension Work for academic year 2016-17, which is available on the University's web site ([www.mu.ac.in](http://www.mu.ac.in)) and that the same has been brought into force with effect from the academic year 2016-17.

MUMBAI – 400 032  
21 December, 2016  
To

  
(Dr.M.A.Khan)  
REGISTRAR

The Principals of the affiliated Colleges in Arts, Science and Commerce and the Heads of recognized Institutions concerned.

**A.C/4.84/14/07/2016**


\*\*\*\*\*

No. UG/210 -A of 2016

MUMBAI-400 032 21 December, 2016

Copy forwarded with Compliments for information to:-

- 1) The Co-ordinator, Faculty of Arts, Science and Commerce,
- 2) The Director, Board of College and University Development,
- 3) The Co-Ordinator, University Computerization Centre,
- 4) The Controller of Examinations.

  
(Dr.M.A.Khan)  
REGISTRAR

....PTO

UNIVERSITY OF MUMBAI  
Department of Lifelong Learning & Extension  
FIRST YEAR -Foundation Course-I in Extension Work

SYLLABUS

**SEMESTER I : EXTENSION AND FIELD OUTREACH**

**UNIT I: EXTENSION: BASIC CONCEPTS AND PRINCIPLES**

Extension: Concept, History & Goals, Extension (Principles, advantages and disadvantages), Role of Extension Work in Rural & Urban Development.

**UNIT II: FIELD OUTREACH**

Field Outreach Activities (Need, Methods, Advantages and Disadvantages), Social Leadership-Concept, Characteristics & Functions.

**UNIT III: COMMUNICATION SKILLS**

Concept, Definition, Process of communication, significance & its limitations  
Mass Media: Concept, Importance and its uses.

**SEMESTER II: VALUE EDUCATION AND SKILL DEVELOPMENT**

**UNIT IV: VALUE EDUCATION AND LONGEVITY**

Value Education and Longevity: Meaning and Significance, Development of Value Education and its Longevity: Role of Citizens, Family, Learners, Teachers and Social Reformers, Value Education: Activities and Strategies, Role of Government (Schools & Colleges), Hazards and recycling of e-waste.

**UNIT V: SKILL DEVELOPMENT**

Computer: Fundamentals of Computers, Basic Computer Applications,  
E Learning: Meaning, Need Scope, Functions & Significance  
Application Software, Operating Systems & Utility Programs

**UNIT VI: DEVELOPMENT OF SOFT SKILLS**

Personality Development: Meaning & Importance, Etiquettes, Code of Conduct, Accent in Communication, Grooming Styles, Preparing & Presenting Yourself, Motivation and Confidence Building, Soft Skills, Time Management

*[Handwritten signature]*

