'A' Grade
NAAC Re-Accredited
(3rd Cycle)

KAVAYITRI BAHINABAI CHAUDHARI
NORTH MAHARASHTRA UNIVERSITY, JALGAON

Academic Curriculum
(For Affiliated Colleges of KBC NMU)

M. Sc. Part-1
CHEMISTRY
(Semester I and II)

Choice Based Credit System (60:40 Pattern)
(Outcome Based Curriculum)
As Per U.G.C. Guidelines

To Be Implemented From

Academic Year 2021-22

SYLLABUS

M. Sc. Part-1
CHEMISTRY (Semester I and II)

Summary of Distribution of Credits under CBCS Scheme
[at affiliated colleges w.e.f. academic year 2021-22]

Sr. No.	Type of course	Sem I	Sem II	Sem III	Sem IV
01	Core	**12**	**12**	**12**	**08**
02	Core Skill Based	**02**	**20**	**-**	**12**
03	Elective	**-**	**-**	**04**	**04**
04	Project	**-**	**-**	**-**	**06**
05	Audit	**02**	**02**	**02**	**02**
06	Total Credits	**16**	**34**	**18**	**32**

Subject Type	Core	Core Skill Based	Elective	Project	Audit	Total
Credits	**44**	**34**	**08**	**06**	**08**	**100**

Total Credits = 100

Kavayitri Bahinabai Chaudhari North Maharashtra University Jalgaon

M. Sc. Part-1 Chemistry (Sem-I and II)
[at affiliated colleges w.e.f. academic year 2021-22]

Choice Based Credit System (Outcome Based Curriculum)

Course credit scheme

Semester	(A) Core Courses			(B) Core Skill Based / Elective Course			(C) Audit Course (No weightage in CGPA)			Total Credits (A+B+C)
	No. of Courses	Credits (T)	Total Credits	No. of Courses	Credits (T+P)	Total Credits	No. of Courses	Credits (Practical)	Total Credits	
I	3	12	**12**	1	2 + 0	02	1	2	2	**16**
II	3	12	**12**	4	2 + 18	20	1	2	2	**34**
III	3	12	**12**	1	4 + 0	04	1	2	2	**18**
IV	2	08	**08**	4	4 + 18	22	1	2	2	**32**
Total Credits	**44**			**48**			**8**			**100**

(T, Theory; P, Practical)

Structure of Curriculum

		First Year				Second Year				Total Credit Value
		Semester I		Semester II		Semester III		Semester IV		
		Credit	Course	Credit	Course	Credit	Course	Credit	Course	
	Prerequisite and Core Courses									
(A)	Theory	14	4	14	4	12	3	08	2	48
	Practical	-	-	18	3	-	-	18	3	36
(B)	**Core Skill Based / Subject Elective Courses**									
1	Theory /Practical	-	-	-	-	4	1	4	1	08
(C)	**Audit Course (No weightage in CGPA calculations)**									
1	Practicing Cleanliness	2	1							2
2	Personality and Cultural Development Related Course			2	1					2
3	Technology Related + Value Added Course					2	1			2
4	Professional and Social + Value Added Course							2	1	2
	Total Credit Value	16	5	34	8	18	5	32	7	100

List of Audit Courses (Select any ONE course of Choice from Semester II; Semester III and Semester IV)							
Semester I (Compulsory)		**Semester II** (Choose One) **Personality and Cultural Development**		**Semester III** (Choose One) **Technology + Value Added Course**		**Semester IV**(Choose One) **Professional and Social + Value Added Course**	
Course Code	**Course Title**	**Course Code**	**Course Title**	**Course Code**	**Course Title**	**Course Code**	**Course Title**
AC-101	Practicing Cleanliness	AC-201A	Soft Skills	AC-301A	Computer Skills	AC-401A	Human Rights
		AC-201B	Practicing Sport Activities	AC-301B	Cyber Security	AC-401B	Current Affairs
		AC-201C	Practicing Yoga	AC-301C	Molecular Docking	AC-401C	Technical Report Writing
		AC-201D	Introduction to Indian Music	AC-301D	Seminar on Review of Research Paper	AC-401D	Intellectual Property Rights (IPR)

Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

Syllabus under CBCS for M. Sc. Part-I Chemistry
Syllabus Structure (w.e.f. 2021-22)
Semester-I

Course Code	Course Type	Title of the Course	Contact hours/week			Distribution of Marks for Examination						Credits
						Internal		External		Total		
			Th (L)	Pr	Total	Th	Pr	Th	Pr	Th	Pr	
CH-110	Core	Physical Chemistry-I	04	--	04	40	--	60	--	100	--	04
CH-130	Core	Inorganic Chemistry-I	04	--	04	40	--	60	--	100	--	04
CH-150	Core	Organic Chemistry-I	04	--	04	40	--	60	--	100	--	04
CH-190	Core Skill Based	Industrial Safety and Good Laboratory Practices	02	--	02	20	--	30	--	50	--	02
AC-101	**Audit Course**	Practicing Cleanliness	--	02	02	--	100	--	--	--	100	02

Semester-II

Course Code	Course Type	Title of the Course	Contact hours/week			Distribution of Marks for Examination						Credits
						Internal		External		Total		
			Th (L)	Pr	Total	Th	Pr	Th	Pr	Th	Pr	
CH-210	Core	Physical Chemistry-II	04	--	04	40	--	60	--	100	--	04
CH-230	Core	Inorganic Chemistry-II	04	--	04	40	--	60	--	100	--	04
CH-250	Core	Organic Chemistry-II	04	--	04	40	--	60	--	100	--	04
CH-290	Core Skill Based	Instrumentation and Analysis	02	--	02	20	--	30	--	50	--	02
*CH-P-1	Core Skill Based	Physical Chemistry Practical-I	--	06	06	--	40	--	60	--	100	06
*CH-I-1	Core Skill Based	Inorganic Chemistry Practical-I	--	06	06	--	40	--	60	--	100	06
*CH-O-1	Core Skill Based	Organic Chemistry Practical-I	--	06	06	--	40	--	60	--	100	06
AC-201 (A)/ (B)/(C)/(D)	**Audit Course**	Choose one out of four (AC-201 A/B/C/D) (Personality and Cultural Development Related)	--	02	02	100	--	--	--	100	--	02

*** To be started from Semester-I & evaluated at the end of Semester-II**

List of elective courses to be offered in Semester-II:

AC-201 (A): Soft Skills	**AC-201 (C): Practicing Yoga**
AC-201 (B): Practicing Sports Activities	**AC-201 (D): Introduction to Indian Music**

Syllabus for M.Sc. Part-I Chemistry

(Semester - I & II)

Course Structure for First Year

Course Code	Course Type	Title of the Course
Semester – I		
CH-110	Core	Physical Chemistry-I
CH-130	Core	Inorganic Chemistry-I
CH-150	Core	Organic Chemistry-I
CH-190	Core Skill Based	Industrial Safety and Good Laboratory Practices
AC-101	Audit Course	Practicing Cleanliness
Semester – II		
CH-210	Core	Physical Chemistry-II
CH-230	Core	Inorganic Chemistry-II
CH-250	Core	Organic Chemistry-II
CH-290	Core Skill Based	Instrumentation and Analysis
CH-P-1	Core Skill Based	Physical Chemistry Practical-I
CH-I-1	Core Skill Based	Inorganic Chemistry Practical-I
CH-O-1	Core Skill Based	Organic Chemistry Practical-I
AC-201 (A)/ (B)/(C)/(D)	**Audit Course**	Choose one out of four (AC-201 A/B/C/D) (Personality and Cultural Development Related) AC-201 (A): Soft Skills AC-201 (B): Practicing Sports Activities AC-201 (C): Practicing Yoga AC-201 (D): Introduction to Indian Music

Important Notes:

1. Each theory course prescribed for M. Sc. should be covered in 4 lectures, each of 60 minutes duration per week per course including lectures, tutorials, seminars, classroom discussions etc. (Total 60 hrs. / theory course)

2. Each practical course will require 06 hours of laboratory work per week and will be extended over two semesters. All three practical courses will be examined at the end of the academic year. (Total 180 hrs. / practical course)

3. There should not be more than 10 students in a batch for M. Sc. Practical course.

4. For theory course, the question paper (Internal/External) should include numerical, short answer, long answer, MCQ questions, problem solving approach to test understanding of the subject.

5. In the 60 lectures theory course about 10 lectures will include tutorials, student seminars, classroom discussions and tests.

6. The marks for each paper are distributed as external examination 60 marks and internal examination 40 marks. For internal assessment of each theory and practical course, 2 written tests will be taken.

7. The 75 % attendance of students is compulsory.

8. Students should visit at least five chemical industries in the first year of M. Sc. and submit the observations/report to the Department.

Semester-wise Course Structure of M.Sc. Organic Chemistry

Program at a Glance

Name of the program (Degree)	: M. Sc. (Organic Chemistry)
Faculty	: Science and Technology
Duration of the Program	: Two years (four semesters)
Medium of Instruction and Examination	: English
Exam Pattern	: 60 : 40 Pattern (60 marks University exam and 40 marks continuous internal departmental exam/assessment)
Passing standards	: 40% in each exam separately (separate head of passing)
Evaluation mode	: CGPA
Total Credits of the program	: 100 (44 core credits including 6 credits of project/dissertation, 34 skill enhancement credits, 08 subject elective credits and 08 audit credits)

CH-110: Physical Chemistry - I

(60 L, 100 Marks and 4 Credits)

Course Objectives:

1. To learn the principals and foundations of quantum chemistry.
2. To get oriented towards the basic theory underlying the chemical bond.
3. To acquire knowledge about the different possible equilibrium in nuclear decay processes.
4. To learn the basic concepts about the interaction of high energy radiations with matter.
5. To learn the theory and concepts behind the electrochemical processes and ionic equilibria.

Unit No.	Name of the unit	Lectures
1	**Essentials of Quantum Chemistry** Recapitulation of basic concepts of quantum chemistry, Schrodinger equation, normalization with examples, Hermitian operator and its theorems, postulates of quantum mechanics, free particle, particle in one dimensional box and its application for excitation energies in linear conjugated systems, two and three dimensional box, wavefunction and probability density plots, degeneracy, simple harmonic oscillator, energy eigenvalues, Ψ and Ψ^2 plots, even and odd functions, rigid rotator, spherical polar coordinates, separation of variables and energy values. Hydrogen atom Schrodinger wave equation (derivation not expected), radiation distribution functions, dependence of spherical harmonics of angles (shape of orbitals only introduction), and related numerical. **Ref. 2, 3, 4, 6, 8**	**12**
2	**Chemical Bonding** Variation principle, approximation, LCAO-MO, H_2^+ molecular ion, importance of coulomb and exchange integrals, Born-Oppenheimer approximation and the approximated Hamiltonian, VBT to H_2 molecule (derivation not expected) Comparison between MOT and VBT, valence electron approximation, HMO theory and its application to ethylene and butadiene. **Ref. 2, 3, 4, 6, 8**	**12**
3	**Nuclear Chemistry** Parent-daughter decay-growth relationships: daughter nucleus stable, general expression for activity of daughter, parent shorter and longer lived than daughter, parent and daughter of nearly the same half-life, secular and transient equilibrium. Applications of radioactivity: Typical reactions involved in the preparation of radio isotopes (^{22}Na, ^{32}P), Szilard - Chalmer's reaction, Isotope dilution and neutron activation analysis, and related numerical **Ref. 5, 8**	**12**
4	**Radiation Chemistry** Elements of radiation chemistry: primary effects of interaction of radiation with matter, LET, Bremsstrahlung. Interaction of gamma radiation with matter: photoelectric effect, Compton scattering and pair production, units of measuring radiation absorption. Radiation dosimetry: units of dose, Fricke and Ceric sulphate dosimeters, conversion of measured dose values and related numerical.	**12**

	Ref. 5, 8	
5	**Electrochemistry** Strong electrolytes, ionic strength, activity and activity coefficients of strong electrolytes, Debye Huckel theory of conductivity (derivations not expected), ionic atmosphere, relaxation and electrophoretic effects, DHO equation (mathematical derivation not expected), its validity and deviations, Debye-Huckel theory of activity coefficients: Debye-Huckel limiting law (derivation expected), its testing and deviations. Transport number: definition and its relation to ionic mobility, Moving boundary and Hittorf's theoretical and experimental method and related numerical **Ref. 1, 6, 7, 8**	**12**

References:

1. P. W. Atkins, J. D. Paula, Physical Chemistry, Oxford University Press
2. Donald McQuerry , Quantum Chemistry, Viva Books
3. R. K. Prasad, Quantum Chemistry, New Age International
4. I. Levine, Quantum Chemistry, Pearson Education
5. H. J. Arnikar, Essentials of Nuclear Chemistry
6. D. A. McQuerry & J. D. Simon, Physical Chemistry Molecular Approach, Viva Books
7. S. H. Maron and C. F. Prutton, Principles of Physical Chemistry, Oxford and IBH Publishing Co.
8. Dr. L. S. Patil, Physical Chemistry I, Shree Book Co. Mumbai

Course Outcomes (CO):

After successful completion of the course students are expected to

No.	CO	Cognitive level
1	Apply the quantum mechanical principles to simple systems of chemical interests	**3**
2	Differentiate between the nature of chemical bond concept from MOT and VBT	**2**
3	To identify and write the different types of equilibriums in a given nuclear decay process	**4**
4	To explain the concept of Radiation dose measurement and its practical applications	**2**
5	To be able to calculate the ionic strength and activity coefficients by using the basic concepts underlying.	**5**

CH-130: Inorganic Chemistry - I

(60 L, 100 Marks and 4 Credits)

Course Objectives:

1. The course offers the basic concepts of inorganic chemistry lying on synthesis, structure, bonding and properties of some selected main group elements.
2. The course helps to build up a conceptual framework for understanding the principles and theories for chemical bonding and properties of inorganic compounds.
3. The course furnishes detail knowledge about synthesis, types of bonding, properties etc.

Unit No.	Name of the unit	Lectures
1	**Molecular Symmetry and Applications** Molecular term symbol for homonuclear diatomic molecules H_2,B_2,C_2,N_2,$O_2$and F_2 molecules Linear tri-atomic molecules – BeH_2, CO_2. Trigonal planar molecule- BF_3, Tetrahedral Molecule – CH_4, Trigonal pyramidal molecule NH_3, Angular Tri-atomic molecules H_2O, NO_2.	12
2	**Organometallic compounds of transition metals** Organometallic compounds, molecule orbital theory and 18 electron rule, counting electrons in complexes, alkyl and aryl complexes, alkene complexes, metal π complexes- metal carbonyl and metal nitrosyls.	12
3	**Chemistry of non-transition elements** Hydrides-classification, electron deficient, precise and rich hydrides. Study of PH_3, SbH_3, AsH_3, Selenides, Tellurides. Synthesis, properties and structures of alkali and alkaline earth metal compounds, Synthesis and reactivity of inorganic polymer of Si and P.	12
4	**Molecular symmetry** Symmetry elements and operations, symmetry planes, reflections, inversion centre, proper / improper axes of rotation, equivalent symmetry elements and atoms, symmetry elements and optical isomerism, Classification of point groups and procedure to determine the point group, with at least one example of each point group.	12
5	**Transition Metal Carbonyls and Related Compounds** Introduction, preparation and properties of transition metal carbonyls, structure of transition metal carbonyls, carbonyl hydrides, carbonylate anions and cations, carbonyl halides, phosphine and phosphorous trihalide complexes, dinitrogen complexes, nitric oxide complexes, cyano complexes.	12

References:

1. J. E. Huheey, E. A. Keiter, R. L. Keiter, Inorganic Chemistry Principles of Structures and R eactivity, 4th edition, New York, NY: Harper Collins College Publishers, 1993.
2. J. D. Lee, Concise Inorganic Chemistry, 5thedn., Blackwell Science, London, 2006.
3. A. G. Sharpe, Inorganic chemistry, 3rd edition, ISBN 9788131706992, Pearson Education, 1981.
4. F.A. Cotton, Chemical Applications of Group Theory,ISBN: 978-0-471-51094-9, 1990.
5. D.F. Shrivers, P.W. Atkins and C.H. Langfor, Inorganic Chemistry, CH Langford, 1990.
6. B.R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co., 2005.
7. H. B. Gray, Electrons and Chemical Bonding. W. A. Benjamin, Inc., New York, 1965.
8. H. J. Emeleus and A.G. Sharpe, Modern Aspects of Inorganic Chemistry, Universal Book S tall, New Delhi.
9. K. Lal, S.K. Agarwal, Advanced Inorganic Chemistry, Pragati Prakashan, Meerut, 2017
10. G. S. Manku, Theoretical Principles of Inorganic Chemistry, Tata McGraw-Hill Ed
11. B. Douglas, D.H. Mc. Daniel, J.J. Alexander, Concepts and Models of Inorganic Chemistr, 2nd edition.
12. R. Sarkar, General and Inorganic Chemistry, Part one, New Central Book Agency, Kolkat.
13. P. K. Bhattacharya, Group Theory and its Chemical applications, Himalaya Publishing Ho use.
14. F. A. Cotton, G. Wilkinson, C. A. Murillo, M. Bochmann, Advance Inorganic Chemistr, Si xth Edition, John Wiley & Sons, Inc.

Course Outcomes (CO):

After successful completion of the course students are expected to

No.	CO	Cognitive level
1	Apply the fundamental knowledge about the synthesis, structure, bonding and properties of some selected main group elements which are very important in different fields.	**3**
2	Apply fundamental knowledge about molecular symmetry, MOT, organometallic compounds, ionic solids and bioinorganic compounds.	**3**
3	Explain various concepts and theories of various topics from inorganic chemistry.	**2**

CH-150: Organic Chemistry – I

(60 L, 100 Marks and 4 Credits)

Course Objectives: To make the students conversant with the

1. Study of basic concepts of organic chemistry.
2. Study of reaction intermediates.
3. Study of the different classes, mechanism & stereochemistry of reactions.

Unit No.	Name of the Units	Lectures
1	**Aromaticity** Huckel's (4n+2) and 4n rules. Aromatic and antiaromatic compounds up-to 18 carbon atoms. Homoaromatic compounds. Aromaticity of all benzenoid systems, heterocycles, azulenes, tropolones, fulvenes, sydnones, annulenes, aromatic ions and Fullerene (C60). **Ref. 3. Page No. 40-67** **Ref. 5, 7, 9 Relevant pages**	**04**
2	**Reactive Intermediates and Concerted Reactions** **(Carbocations, Carbanions, Carbene, Nitrene, and Arynes)** Organic reactive intermediates and their structure, methods of generation, structure, stability and important reactions involving carbocations, carbanions, nitrenes, carbenes, arynes. **Ref. 3. Page No. 165-186, 195-202** **Ref. 4, 5, 6 Relevant pages**	**10**
3	**A. Nucleophilic Substitution reaction** **Aliphatic nucleophilic substitution** a) S_N1, S_N2 and S_N^i mechanism and stereochemistry (regioselectivity and stereospecificity of substitution reaction). b) Nucleophilic substitution at an allylic, aliphatic and vinylic carbon. c) Effect of substrate structure, nucleophile, leaving group and solvent on rate of $S_N1$and S_N2 reactions, ambident nucleophile. **Aromatic nucleophilic substitution** S_NAr, S_N1, Benzyne and S_NR1 reactions, effect of substrate structure, leaving group, solvent and attacking nucleophile. **B. The neighbouring group mechanism** The neighbouring group mechanism, neighbouring group participation by π and σ bonds, anchimeric assistance. Non-classical carbocations, phenonium ions, norbornyl system. **Ref. 2. Page No. 406-443.** **Ref. 3. Page No. 255-262, 265-272, 286-289, 298-320** **Ref. 4, 5, 7, 8, 10 Relevant pages**	**14**
4	**Electrophilic Substitution reaction** a) Arenium ion mechanism, orientation and reactivity, energy profile diagram, ortho, para, ipso attack, orientation in other ring systems, six and five membered heterocycles with one hetero atom. b) Important reactions like Friedel crafts alkylation and acylation, nitration, halogenation, formylation, chloromethylation, sulphonation, diazo coupling.	**12**

	Ref. 1. Page No. 447-562 **Ref. 2, 3, 4, 5, 7, 8 Relevant pages**	
5	**Addition reaction** a) Addition to carbon-carbon multiple bonds and carbon heteroatom multiple bonds- Mechanism and stereochemical aspects of addition reaction involving electrophile. b) Structural effects and reactivity: Halogenations, Hydrohalogenation, Hydration, Hydroxylation, Hydroboration, Epoxidation, Carbene addition, Hydrogenation, Ozonolysis. **Ref. 1. Page No. 517-557** **Ref.3, 8, 9, 10 Relevant pages**	**10**
6	**Elimination reaction** a) E1, E2, E1CB mechanisms, Stereo chemistry of elimination, Elimination versus substitution, anti and syn elimination. b) Dehydrohalogenation, Dehalogenation, Dehydration, Hoffmann and Saytzeff's elimination, Pyrolytic elimination. **Ref. 1. Page No. 466-501** **Ref.3, 4, 8, 9, 10 Relevant pages**	**10**

References:

1. Organic chemistry, Fifth edition by Staney H. Pine.
2. Organic Chemistry – by J. Clayden, N. Greeves, S. Warren and P. Wothers (Oxford).
3. Advanced Organic Chemistry: Reactions, Mechanisms and Structure, Forth Edition by Jerry March.
4. A Guide book to Reaction Mechanism in Organic Chemistry–Peter Sykes.
5. Advance Organic Chemistry (Part A and B) –by A. Carey and R.J. Sundherg.
6. Modern methods of organic synthesis – W. Carruthers (Cambridge) .
7. Organic Chemistry: A Brief Course by Robert C. Atkins, Francis A Carey.
8. Organic Reactions & their Mechanisms- P. S. Kalsi.
9. Organic Chemistry- Morrison & Boyd.
10. Stereochemistry conformations and mechanism by P.S. Kalsi

Course Outcomes (CO):

After successful completion of the course students are expected to

No.	CO	Cognitive level
1	Apply the fundamental concepts of organic reaction mechanism in theoretical and practical work, may be in academic, research laboratories, and industries.	**3**
2	Understand the importance and types of organic reactions and their applications.	**2**
3	Acquire knowledge of important characteristics of organic compounds.	**4**

CH-190: Industrial Safety and Good Laboratory Practices

(30 L, 50 Marks and 2 Credits)

Course Objectives: To make the students conversant with the

1. This course offers to create awareness about laboratory safety.
2. This course offers to increase alertness about any hazardous handling at workplace.
3. This course offers to increase awareness about personal protective equipment.

Unit No.	Name of the Units	Lectures
1	**Hazards and Safety measures** A) History and importance of safety and health in Laboratory - Moral, legal and financial reasons B) Different types of Hazards at workplace handling chemicals - Physical, chemical, biological, allergens, hazards pertaining electrical system - Effect of hazards on health - Where to find Hazard Information - Reading Labels C) Safety Measures: Safe clothing, hair, dangling jewelry, proper responsible attitude, good housekeeping, use of proper PPE, no food in the laboratories.	**06**
2	**Basic of laboratory safety** Personal Protective and other safety equipment and their uses and demonstration, different types of safety goggles, apron, masks, different filters for masks, face shield, full body suit, safety shoes, helmet, breathing apparatus suit, safety belt and ear muffs along with inspection methods. Emergency exit, its location and approach path, periodic inspection fire extinguishers, first aid kit, its contents and need for monitoring. Eye wash fountains and safety showers, fire drill, and chemical accident drills, accident-free days and incentives to follow safety rules, accident recording and investigation for future controls.	**06**
3	**Introduction to industrial safety** Types of fire extinguishers and their method of use, Material Safety Data Sheets (MSDS), Globally Harmonized System (GHS) Signs (http://www.calstatela.ed/univ/ehs/msds.php) Importance and use of current 16 points format, Labels, Pictograms and some of their discrepancies, Globally Harmonized System for Safety Data Sheets (SDS), label changes (2014).	**06**
4	**Laboratory and chemical waste management** Inventory management, storage and disposal, waste classification, hazardous waste, non-hazardous waste, mixed waste, waste disposal, actions required for - chemical spills, mercury spills, injuries, fires, building evacuations, emergency evacuation procedure.	**06**
5	**Good Laboratory Practices (GLP)** Good Laboratory Practices (GLP)**,** introduction and principles of GLP, performance of laboratory studies and calibration using Standard Operating Procedures (SOPs), instrument validation, reagent certification, laboratory notebook maintenance to contemporary standards, maintenance of laboratory records based on instrument and reagent certification, introduction to ISO and NABL accreditation.	**06**

References:

1. L. Moran, T. Masciangioli, Chemical Laboratory Safety and Security: A Guide to Prudent Chemical Management, The National Academies Press, Washington, DC, 2010.
2. D. C. Finster, Safety in Academic Chemical Laboratory, Vol. II, ACS Publication, 7th Edition, 2003.
3. OECD Series on Principles of Good Laboratory Practices and Compliance Monitoring, 1997.
4. Handbook of Good Laboratory Practices, TDR, WHO, UNICEF, UNDP, 2009.
5. L. Huber, A Primer for Good Laboratory Practices and Good Manufacturing Practices, Agilent Technologies, 2002.
6. T. Kletz, What Went Wrong, Gulf Professional Publisher, 1998.

Course Outcomes (CO):

After successful completion of the course students are expected to

No.	CO	Cognitive level
1	Understand the importance of laboratory safety.	**1**
2	Aware and follow healthy laboratory practices.	**2**
3	Acquire the knowledge about personal protective equipment.	**4**

AC-101: Practicing Cleanliness (Compulsory; College-level Audit Course; Practical; 2 Credits)		
Course Objectives (CObs): • To make students aware of Clean India Mission and inculcate cleanliness practices among them.		

	• Awareness program on
	  o Swachh Bharat Abhiyan (Clean India Mission)
	  o Clean Campus Mission
	  o Role of youth in Clean India Mission
	• Cleaning activities inside and surroundings of Department buildings.
	• Tree plantation and further care of planted trees
	• Waste (Liquid/Solid/e-waste) Management, Japanese 5-S practices
	• Planning and execution of collection of Garbage from different sections of University campus
	• Role of youth in power saving, pollution control, control of global warming, preservation of ground water and many more issues of national importance.
	• Cleanest School/Department and Cleanest Hostel contests
	• Painting and Essay writing competitions	

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Identify need at of cleanliness at home/office and other public places.	**2**
2	Plan and observe cleanliness programs at home and other places.	**4**
3	Practice cleanliness practices in day-to-day life.	**3**

CH - 210: Physical Chemistry - II
(60 L, 100 Marks and 4 Credits)

Course Objectives:

1. To orient and acquaint the PG students towards the fundamental and advanced aspects of thermodynamics and statistical thermodynamics.
2. To acquire knowledge about kinetics of complex reactions and fast reactions.
3. To evoke the fundamental concepts of YR, electronic and Raman spectroscopy and understand the advance concept involved in it.

Unit No.	Name of the Units	Lectures
1	**Thermodynamics** Introduction, enthalpy of a system, molar heat capacities, relation between Cp and Cv, Joule-Thomson effect, third law of thermodynamics, concept and importance of absolute entropy, standard entropy and residual entropy, Maxwell relations (derivation expected), thermodynamic equation of state, partial molar quantity and its significance, partial molar volumes, chemical potential, Gibbs-Duhem equation, thermodynamics of mixing-Gibb's free energy of mixing, entropy of mixing, enthalpy of mixing and related numerical **Ref: 2, 8, 13, 14**	**12**
2	**Statistical thermodynamics** Introduction, Concept of Boltzmann Ensemble, Thermodynamic probability, Sterling approximation, Boltzmann distribution law, partition function and its significance, energy and entropy in terms of partition function, separation of partition functions, translational partition function, translation energy and entropy from it, rotational partition function, rotational energy and entropy from it, vibrational partition function, vibrational energy and entropy from it and related numerical. **Ref:1, 2, 8, 13, 14**	**12**
3	**Chemical kinetics** Introduction, complex reactions, reactions approaching equilibrium (opposing reactions), consecutive elementary reactions (sequential reactions), parallel reactions and its kinetics, elucidation of mechanism of complex reactions: rate determining step of the reaction and steady state approximation, pre-equilibria, Michaelis-Menten mechanism of enzyme catalysis, chain reactions and its characteristics, steps involved in chain reactions with suitable example. Explosion, Types of explosion, explosion limits and related numerical. Fast reactions, techniques for the study of fast reactions: flow methods and flash photolysis. **Ref: 2, 8, 13, 14.**	**12**
4	**Infra-red Spectroscopy** Introduction, the vibrating diatomic molecule, the energy of a diatomic molecule, the simple harmonic oscillator, the anharmonic oscillator, the diatomic vibrating rotator: Born-Oppenheimer approximation, breakdown of Born-Oppenheimer approximation, the vibrations of polyatomic molecules, fundamental vibrations and their symmetry (water molecule and carbon dioxide molecule) and related numerical. **Ref: 8, 11, 14**	**12**

5	**Electronic and Raman spectroscopy** (a) Electronic spectroscopy: Electronic vibrational spectra, intensity of vibrational electronic spectra, Franck-Condon principle, rotational fine structure, Fortrat diagram, dissociation energy, pre-dissociation. (b) Raman Spectroscopy: Introduction, Rayleigh and Raman scattering, quantum theory of Raman effect, classical theory of the Raman effect: Molecular polarizability, Raman activity of vibrations (water molecule and carbon dioxide molecule), rule of mutual exclusion. and related numericals. **Ref: 8, 11, 14.**	**12**

References:

1. Maron, S. H. and Prutton, C. F. (2012) Principles of Physical Chemistry (4th Edition), Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Atkins, P. W. (1998) Physical Chemistry, ELBS.
3. Barrow, G. M. (2003) Physical Chemistry, International Student Edition.
4. Moore, W. J. (1998) Physical Chemistry, Orient Longman.
5. McQuarrie, D. A. And Simon, J. D. (2006) Physical Chemistry- A Molecular Approach, Viva Books Ovt. Ltd., New Delhi.
6. Nash, L. K. (1968) Elementary Statistical Thermodynamics, Addition-Wesley, Reading.
7. Gupta, M. C. (1990) Statistical Thermodynamics, M. C. Gupta, Wiley Eastern Ltd.
8. Laidler, K. J. (1965) Chemical Kinetics, Second Edition.
9. Frost, A. A. and Pearson, R. G. Kinetics and Mechanism, Second Edition.
10. Agrawal, G. L. Basic Chemical Kinetics by Tata McGraw-Hill Publishing Company Ltd., New Delhi.
11. Banwell, C. N. and McCash, E. M. (1996) Fundamentals of Molecular Spectroscopy, McGraw Hill International (UK).
12. Bahl, B. S., Bahl, A., Tuli, G. D. (2005) Essentials of Physical Chemistry by Chand and Co Ltd., New Delhi.
13. Puri, B. R., Sharma, L. R. and Pathania M. S. (2007) Principles of Physical Chemistry (42nd Edition), , Vishal Publishing Co., Jalandhar.
14. Dr. L. S. Patil, Physical Chemistry II, Shree Book Co. Mumbai.

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Students will gain an understanding of Joule-Thomson effect, third law of thermodynamics, absolute entropy, standard entropy and residual entropy and partial molar quantity and its significance.	**2**
2	Students should understand the importance of statistical thermodynamics and concept of partition functions.	**2**
3	Students should able to understand core study of chemical kinetics and spectroscopy.	**2**

CH - 230: Inorganic Chemistry - II (60 L, 100 Marks and 4 Credits)		
Course Objectives: 1. This course offers to impart the basic knowledge about spectroscopy of inorganic compounds 2. This course also offers to study the reaction mechanism in transition metal complexes. 3. This course helps to understand catalysis and structure reactivity of molecules.		
Unit No.	***Name of the Units***	***Lectures***
1	**The Ionic bond** Structures of ionic solids, radius ratio rules, calculation of limiting radius ratio Values of coordination no.3, 4, 6, close packing, classification of ionic structures – Ionic compounds of the type AX (ZnS, NaCl, CsCl), Ionic compounds of the type AX_2 (CaF_2, TiO_2, SiO_2); Layer structures (CdI_2, [NiAs]) Structures containing polyatomic ions.	**12**
2	**Electronic Spectra** Energy levels in an atom, coupling of orbital angular momenta, coupling of spin angular momenta, spin orbit coupling. Determining the ground state terms – Hund's rule, Hole formulation, Derivation of the terms for a P2 & P3 configuration, calculation of the number of microstates, Electronic spectra of transition metal complexes – Laporte 'orbital' selection rule, spin selection rule, splitting of electronic energy levels and spectroscopic states.	**12**
3	**Reaction mechanism in transition metal complexes** Ligand substitution reaction, classification of mechanism, substitution of square planer complexes, nucleophilicity of entering group, shape of activated complexes, K1 pathway, substitution in octahedral complexes, rate law and their interpretation, activation of octahedral complexes, base hydrolysis, stereochemistry, isomerization reactions.	**12**
4	**Catalysis** Catalysis, description of catalyst, properties of catalyst, types of catalyst, catalytic steps in organotransition metal catalyst, hydrogenation of alkenes, hydroformylation, Monsanto acetic acid synthesis, Wacker oxidation of alkenes, alkene polymerization, heterogeneous catalysis, nature of heterogeneous catalyst, examples of heterogeneous catalysts (hydrogenation, oxidation).	**12**
5	**Preparation & Application of Complexes** Preparation of complexes, Application of complexes in analytical chemistry, complexometric titration, Application of complexes in metallurgy, Application of complexes in industry, Application of complexes in medical field. Presence of metal complexes in biological system (Haemoglobin, Chlorophyll, Vitamin-B_{12})	**12**

References:

1. J. E. Huheey, E. A. Keiter, R. L. Keiter, Inorganic Chemistry Principles of Structures and Reactivity, 4th edition, New York, NY: Harper Collins College Publishers, 1993.
2. J.D. Lee, Concise Inorganic Chemistry, 5thedn., Blackwell Science, London, 2006.
3. A. G. Sharpe, Inorganic chemistry, 3rd edition, ISBN 9788131706992, Pearson Education,1981.
4. F.A. Cotton, Chemical Applications of Group Theory, ISBN: 978-0-471-51094-9, 1990.
5. D.F. Shrivers, P.W. Atkins and C.H. Lang for, Inorganic Chemistry, CH Langford, 1990.
6. B.R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shoban Lal Nagin Chand and Co.,2005.
7. H. B. Gray, Electrons and Chemical Bonding. W. A. Benjamin, Inc., New York, 1965.
8. H. J. Emeleus and A.G. Sharpe, Modern Aspects of Inorganic Chemistry, Universal Book Stall, New Delhi.
9. K. lal, S.K. Agarwal, Advanced Inorganic Chemistry, Pragati Prakashan, Meerut, 2017.
10. G.S. Manku, Theoretical Principles of Inorganic Chemistry, Tata McGraw-Hill Ed.
11. B. Douglas, D.H. Mc. Daniel, J.J. Alexander, Concepts and Models of Inorganic Chemistry, 2nd edition.
12. R. Sarkar, General and Inorganic Chemistry, Part one, New Central Book Agency, Kolkata.
13. P.K. Bhattacharya, Group Theory and its Chemical applications, Himalaya Publishing House.
14. F. A. Cotton, G. Wilkinson, C. A. Murillo, M. Bochmann, Advance Inorganic Chemistry, Sixth Edition, JOHN WILEY & SONS, INC.
15. K. Arora, Concept and Applications of Group Theory, Anmol Publication Pvt. Ltd., New Delhi.
16. W. L. Jolly, Modern Inorganic Chemistry, 2nd edition, Tata McGraw Hill Co.

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Understand the concept of microstates, spectroscopic terms and orgel diagram of inorganic compounds.	**2**
2	Gain knowledge about magnetic properties and charged transfer spectra of transition metal complexes.	**2**
3	Students are able to analyze structure reactivity and reaction mechanisms of metal complexes.	**4**

CH - 250: Organic Chemistry - II
(60 L, 100 Marks and 4 Credits)

Course Objectives:

1. This course also offers to learn various name reactions, rearrangement and reagents used in organic chemistry.
2. The course offers to study the importance of stereochemistry and organic spectroscopy for structure elucidation with respect to laboratory and industrial applications.
3. This course helps to understand the principles behind UV, IR, ^{1}HNMR, ^{13}CNMR and Mass spectroscopy.

Unit No.	Name of the Units	Lectures
1	**Rearrangements** Wagner-Meerwein (with Demjanov), Pinacol, Wolff, Arndt-Eistert Synthesis, Hofmann, Curtius, Schmidt, Lossen, Beckmann, Baeyer-Villiger, Favorskii, Benzilic acid, Stevens, Wittig, Claisen, Cope, oxy-cope, Meisenheimer, Sommelet-Hauser, Dienone-phenol, Ciamician-Dennsted, Fries (with photo Fries) rearrangements	12
2	**Selective Name Reactions** Aldol Condensation, Henry reaction, Perkin reaction, Stobbe Condensation, Dieckmann Condensation, Benzoin Condensation, Reimer-Tiemann reaction, Reformatsky reaction, Darzens reaction, Michael reaction, Mannich reaction, Shapiro reaction, Bomford-Stevens reaction, Nef reaction, Baylis Hilman reaction, Cannizaro reaction, Knovengeal reaction, Sharpless reaction, Barton reaction, Hofmann Loffler-Freytag reaction, Vilsmeir-Haack reaction	14
3	**Reagents in Organic Synthesis** **A] Oxidizing Reagent:** CrO_3, $Na_2/K_2Cr_2O_7$, Collins reagent, PDC (Cornforth reagent), PCC (Corey's reagent), $KMnO_4$, MnO_2, SeO_2, $Pb(OAc)_4$, Pd-C, OsO_4, Peracid, (m-CPBA), O_3, H_2O_2, $NaIO_4$, HIO_4, $Al(O\text{-}i\text{-}R)_3$ (Oppenauer oxidation), Swern oxidation, DDQ, NBS and B_2H_6 **B] Reducing Reagent:** $LiAlH_4$, $NaBH_4$, $NaCNBH_3$, MPV reduction, Na/liquor NH_3, Na/alcohol, H_2/Pd-C, H_2/Pd-$BaCO_3$, DIBALH and Wolff Kishner reduction, Zn-Hg/H_2O/HCl, Zn(Cu), Baker's yeast, LDC (Gilman's reagent), LDA (Lithium diisopropylamide), DCC (dicyclohexylcarbodimide), Woodward and Prevost hydroxylation and Baker's yeast.	14
4	**Stereochemistry** Stereochemical principles (stereoisomers, chirality, optical activity, enantiomers, diastereoisomers, epimer, anomer), R-S nomenclature, Meso Compounds, E-Z nomenclature, Threo and Erythro nomenclature. optical activity in biphenyls, spiranes, allenes, Racimic modification and racimation, optical purity, pro-stereoisomerism (Homomorphic, Homotopic, Heterotopic, enantiotropic, diastrophic-atoms, groups and faces). Interconversion of Fischer, Newman and Sawhorse Projections, stereospecific and stereoselective reactions Conformational analysis of cyclic (cyclohexane, mono-substituted cyclohexane) and acyclic compounds (ethane, propane, butane).	14

5	**Spectroscopy:** Instrumentation, Sample Preparation for UV, IR, NMR (^{1}H and ^{13}C), Mass Spectrometry. Joint problems based on UV, IR, NMR (^{1}H and ^{13}C), Mass.	**06**

References:

1. S. H. Pine – Organic Chemistry, 5th Edition, McGraw-Hill.
2. P. S. Kalsi – Organic Reactions and Their Mechanisms
3. J. Clayden, N. Greeves, S. Warren – Organic Chemistry, IInd Edition, Oxford University Press.
4. Peter Sykes-A Guidebook to Mechanism in Organic Chemistry
5. W Carruthers and Iain Coldham – Modern Methods of Organic Synthesis
6. P. S. Kalsi –Stereochemistry: Conformation and Mechanism, 8th Edition, New Age International.
7. F. A. Carey, R. J. Sundberg – Advanced Organic Chemistry Part-B: Reactions and Synthesis, 5th Edition, Springer.
8. D. Nasipuri – Stereochemistry of Organic Compounds: Principles and Applications, Revised 2ndEdition, New Age International.
9. E. L. Eliel – Stereochemistry of Carbon Compounds, McGraw-Hill.
10. P. S. Kalsi – Spectroscopy of Organic Compounds, 6th Edition, New Age International.
11. D. L. Pavia, G. M. Lampman, G. S. Kriz, J. R. Vyvyan – Introduction to Spectroscopy.
12. R. M. Silverstein, F. X. Webster – Spectrometric Identification of Org. Compounds.

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Students will learn the basic name reactions and rearrangement reactions.	**2**
2	Students will understand the applications of reagents in organic synthesis.	**2**
3	Students will apply the basic knowledge about core study of spectroscopy and stereochemistry	**3**

CH - 290: Instrumentation and Analysis
(30 L, 50 Marks and 2 Credits)

Course Objectives:

1. This course covers both fundamental and practical aspects of chemical analysis.
2. The student will learn about instrumentation, working and applications in chemistry.
3. This course also covers solving numerical problems.

Unit No.	Name of the Units	Lectures
1	**Errors, statistics and sampling:** Accuracy and precision, Error, types of error, systematic and random errors, minimization of errors, mean and standard deviations, reliability of results, confidence interval, comparison of results, student T test, F test, Comparison of two samples (Paired T test), correlation and regression, correlation coefficient and liner regression, Sampling, the basis of sampling, sampling procedure and sampling statistics.	06
2	**Voltammetry:** Excitation signals Linear-sweep Voltammetry- voltammetric instruments, voltammetric electrodes, voltammograms, hydrodynamic voltammetry and voltammetric detectors.	06
3	**Electrogravimetric Analysis:** Theory of electrogravimetric analysis, terms used in electrogravimetric analysis, completeness of deposition, Electrolytic separation of metals, character of the deposit, electrolytic separation of metals with controlled cathode potential, apparatus and determination of copper (constant current procedure).	06
4	**Ultra-purity and ultra-trace analysis:** Ultra-purity and ultra-trace analysis, laboratory dosing, purification of reagents, Preconcentration Techniques and contamination control during analytical operation.	06
5	**Chemical Aspects to Nanomaterials:** Nanoscience and nanotechnology, effect of making into small size, general theme of classification of nanomaterial, application of nanomaterials, characterization of nanomaterials using XRD, SEM-EDAX, and TEM.	06

References:

1. H. H.; Willard, L. L. Merritt, J. A. Dean, F. A. Settle, Jr. Instrumental Methods of Analysis.
2. G. R. Chattwal and S. Anand, Instrumental Methods and Chemical Analysis.
3. D. A. Skoog and D. M. West, Fundamentals of Analytical Chemistry", 4th Ed., CBS College, Publishing, New York.
4. Vogel's Text Book of Quantitative Chemical analysis (Sixth Edition) By- J.
5. Mendham, R.C. Denny, J.D. Barnes, M.J.K. Thomas (Pearson Education- Low Price Edition)

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Explain various theoretical concepts of analytical chemistry.	**2**
2	Build up ability to solve the numerical problems.	**3**
3	Apply theoretical principles, working of various classical and modern instrumentation techniques.	**3**

AC-201(A): Soft Skills **(Personality and Cultural Development Related Audit course; Practical; 2 Credits)**		
	Course Objectives (CObs): • To develop soft skills and communication skills amongst the students.	
1	**Introduction to soft skills** Formal definition, Elements of soft skills, Soft vs. Hard skills, Emotional quotient, Goal setting, life skills, Need for soft skills, Communication skills, Etiquettes& Mannerism.	**2 h**
2	**Self-Assessment** Goal setting, SWOT analysis, attitude, moral values, self-confidence, etiquettes, non-verbal skills, achievements, positive attitude, positive thinking and self-esteem. Activity: The teacher should prepare a questionnaire which evaluate students in all the above areas and make them aware about these aspects.	**4 h**
3	**Communication Skills** Types of communication: Verbal, Non-verbal, body language, gestures, postures, gait, dressing sense, facial expressions, peculiarity of speaker (habits). Rhetoric speech: Prepared speech (topics are given in advance, students get 10 minutes to prepare the speech and 5 minutes to deliver, Extempore speech (students deliver speeches spontaneously for 5 minutes each on a given topic), Storytelling (Each student narrates a fictional or real-life story for 5 minutes each), Oral review (Each student orally presents a review on a story or a book read by them) Drafting skills: Letter, Report & Resume writing, business letters, reading & listening skills Activity: The teacher should teach the students how to write the letter, report and build resume. The teacher should give proper format and layouts. Each student will write one formal letter, one report and a resume.	**8 h**
4	**Formal Group Discussion, Personal Interview & Presentation skills** Topic comprehension, Content organization, Group speaking etiquettes, driving the discussion & skills. Preparation for personal interview: dress code, greeting the panel, crisp self-introduction, neatness, etiquettes, language tone, handling embarrassing & tricky questions, graceful closing. Activity: Each batch is divided into two groups of 12 to 14 students each. Two rounds of GD for each group should be conducted and teacher should give them feedback. Mock interviews to be conducted.	**4 h**
5	**Aptitude and analytical skills** Quantitative aptitude, Numerical reasoning, verbal reasoning, diagrammatic test, situational tests, logical thinking. Analytical skills: Definition, Types, problem solving	**8 h**
6	**Life skills** Time management, critical thinking, sound and practical decision making by dealing with conflicts, stress management, leadership qualities Activity: The teacher can conduct a case study activity to train students for decision making skills. The teacher should conduct a session on stress management and guide students on how to manage stress. The teacher may conduct a stress relieving activity in the class. He/she may counsel students individually to know their problems and guide them on dealing with them effectively.	**4 h**

Suggested readings:

1. Basics of Communication In English: Francis Sounderaj, MacMillan India Ltd.
2. English for Business Communication: Simon Sweeney, Cambridge University Press
3. An Introduction to Professional English and Soft Skills: Das, Cambridge University Press
4. Quantitative Aptitude: R.S. Agrawal

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Grasp soft skills and communication skills.	**2**
2	Apply life skills to manage the situations.	**4**

CH-P-1: Physical Chemistry Practical-I
(180 Hrs., 100 Marks and 6 Credits)

Course Objectives: The practical course is designed

1. To understand the basic principles of different techniques used in laboratory and provide hands on training on various instruments.
2. To understand the standardization of instruments to make appropriate measurements, analyze the data and report the results.
3. To understand the basic principles of different techniques used in laboratory.
4. to develop the experimental skills in physical chemistry
5. To acquire the knowledge about verification of theoretical aspects.
6. To understand the standardization of instruments like colorimeter, polarimeter etc. and their application.

Students should perform minimum of twenty (20) experiments.
It is expected to perform at least two experiments from each technique.

INSTRUMENTAL

Conductometry

1. Determine the conductance of strong electrolyte (KCl/NaCl/$AgNO_3$/HCl) at various concentrations and verify the applicability of DHO equation.
2. Determine the amount of trichloroacetic acid, monochloroacetic acid and acetic acid in the given by conductometric titration against sodium hydroxide solution.
3. Determine the solubility of sparingly soluble salt ($BaSO_4$) at different temperatures conductometrically and determination of ΔG, ΔH and ΔS of the solution.
4. Study the second order velocity constant of hydrolysis of ethyl acetate by sodium hydroxide using conductance measurement.
5. Determination of critical micellar concentration (CMC) of sodium lauryl sulphate from the measurement of conductivities at different concentrations.
6. To determine the concentration of Fe^{2+} ions by titrating with potassium dichromate solution conductometrically.

Potentiometry

1. To determine the stability constant of a complex ion $[Ag_2(S_2O_3)]^{-3}$ potentiometrically.
2. To determine standard free energy change ΔG^0 and equilibrium constant for the reaction $Cu + 2Ag^+ \rightarrow Cu^{2+} + 2Ag$ potentiometrically.
3. To determine the activity coefficient of an electrolyte (HCl) by potentiometry.
4. To determine the amount of each halide in a mixture of halides containing a) KI and KBr/KCl or b) KI / KBr and KCl potentiometrically.
5. To titrate ferrous ammonium sulphate solution with potassium dichromate solution potentiometrically using bimetallic electrode pair.
6. To determine the transport number of Ag^+ and NO_3^- ion.

pH metry

1. Determination of Hammette constant of a given substituted benzoic acid by pH measurements.
2. To determine acidic and basic dissociation constant of amino acid and the iso-electric point of the acid.
3. To determine the three dissociation constants of polybasic acid such as H_3PO_4 by pH measurements.
4. Determine the effect of KCl on the pH of HCL solution.

Colorimetry / Spectrophotometry

1. To determine the pKa and Ka of given indicator by colorimetry / spectrophotometry
2. To determine the empirical formula of Ferric salicylate complex by Job's method and verify by slope ratio method.
3. Determine the amount of Cu (II) and Fe (III) in a mixture by titrating it against standard EDTA solution spectrophotometrically.
4. Determination of iron in water using a colorimeter.
5. Simultaneous determination of $Cr_2O_7^{2-}$ and MnO_4^- ions or Co^{2+} and Ni^{2+} in the solution by spectrophotometry.
6. Record the UV spectrum of Benzene, Pyridine and Pyrimidine in methanol. Compare and discuss the various transition involved in terms of MO theory.

Polarimetry

1. Polarimetric determination of the specific rotation of camphor in benzene and carbon tetrachloride.
2. Determine the percentage of two optically active substances (d-glucose and d-tartaric acid) in a mixture polarimetrically.

Refractometry

To measure refractometrically average polarizability of some of the common solvents.

NON-INSTRUMENTAL

Chemical Kinetics

1. To determine the rate constant for depolymerization of diacetone alcohol catalysed by sodium hydroxide using dilatometer.
2. Study the kinetics of reaction between potassium persulphate and potassium iodide.
   a) Determine the rate constant.
   b) Study the influence of ionic strength on the rate constant.
3. To determine energy of activation of the hydrolysis of methyl acetate in presence of hydrochloric acid (Calculations and graphs expected from excel programming)
4. Determine the colorimetrically the order and energy of activation for decomposition of violate coloured complex of ceric ion and N-phenylanthranilic acid.

Other Non-instrumental experiments

1. Determined the transport number of H^+ and Cl^- ions by moving boundary method.
2. To obtain solubility curve for liquid say water-acetic acid-chloroform system
3. Investigate the adsorption of acetic acid in aqueous solution by using activated charcoal and verify Freundlich's adsorption isotherm.
4. Determination of partial molar volume of ethanol in dilute aqueous solutions.
5. To study the effect of addition of an electrolyte (KCl/NaCl /NH_4Cl/Na_2SO_4 / K_2SO_4) on solubility of an organic acid (benzoic acid or salicylic acid).

Cryoscopy:-

To determine the mean activity coefficient of an electrolyte (NaCl) in dilute solution by cryoscopic measurement.

References:

1. Findley's Practical Physical Chemistry (9^{th} edition), Edited by B. P. Levitt (Longman Group Ltd).
2. Systematic Experimental Physical Chemistry (2^{nd} edition), By S. W. Rajbhoj and Dr. T. K. Chondekar (Anjali Publication, Aurangabad).
3. Advanced Practical Physical Chemistry (26^{th} edition), By J. B. Yadav (Goel Publishing House, Meerut).
4. Experimental Physical Chemistry, By V. D. Athawale, P. Mathur (New Age international Ltd, New Delhi)
5. Advanced Practical in Physical Chemistry (13^{th} edition or latest) By Dr. Pande, Dr. Mrs. Datar, Dr. Mrs Bhadane, Manali Publication, Pune.
6. University Practical Chemistry by P. C. Kamboj, Vishal Publishing Co. Jalandhar, Panjab.
7. Practical Physical Chemistry, By A. M. James and F. F. Prichard, Longman Group Ltd.
8. Advanced Physical Chemistry Experiments by Dr. J. N. Gurtu and Amit Gurtu, Pragati Prakashan Meerut.

Course Outcomes (CO):

After successful completion of the course students are expected to

No.	CO	Cognitive level
1	Students will understand the preparation for each experiment.	**2**
2	Setup and standardize the potentiometer, P^H meter and conductometer.	**3**
3	Identify thermodynamics and kinetics of simple systems.	**4**
4	To know Safety requirements and lab skills to perform physico-chemical experiments.	**2**
5	To apply the principles and techniques to different systems.	**3**

CH-I-1: Inorganic Chemistry Practical-I
(180 Hrs., 100 Marks and 6 Credits)

Course Objectives: The practical course is designed

1. To understand the basic principles of different techniques used in laboratory analysis.
2. To provide hands on training on various techniques of analysis.
3. Develop the ability to analyze drug samples
4. To make appropriate measurements, analyze the data and report the results.

Students should perform minimum of twenty (20) experiments.

Analysis of ore (minimum two)

a. Pyrolusite ore - Estimation of silica gravimetrically and Manganese volumetrically.
b. Haematite - Estimation of copper volumetrically and Iron gravimetrically.
c. Chromite ore – Estimation of Iron gravimetrically and chromium volumetrically.

Analysis of binary mixtures by gravimetric and volumetric method (minimum five)

a) Copper- Nickel
b) Copper -Magnesium
b) Copper-Zinc
c) Iron-Magnesium
d) Nickel-Zinc
e) Lead-Tin

Drug Analysis (minimum one)

a. Determination of iron from given drug sample.
b. Determination of Calcium from given Calcium tablet.

Thermochemistry (minimum two salts)

To determine the lattice energy of binary salts (NaCl, KCl, $CaCl_2$).

Preparation of the following complexes and determination of its purity (minimum four)

a) Potassium trioxalatoferrate(III)trihydate
b) Tris(acetylacetonato)iron(III)
c) Potassium di aqua bis(oxalato) chromate (III)
d) Prussian Blue (Potassium Ferric Ferro cyanide)
e) Chloropenta-amminecobalt (III) chloride

Chromatography (minimum two)

a) Determination of the Rf value of Pb, Cu, Cd ions by using paper chromatographic technique.
b) Determination of the Rf value of Fe, Al, Cr ions by using paper chromatographic technique.
c) Determination of the Rf value of Ba, Sr, Ca ions by using paper chromatographic technique.

Instrumental method of Analysis (minimum four experiment)

a) To determine the strength of given mixture of carbonate and bicarbonate by pH metric method
b) To determine Ca in the given solution by flame photometrically, by calibration curve Method**.**

c) Spectrophotometry (**any one**)

1. Estimation of phosphate from waste water by calibration curve method
2. Estimation of Manganese from steel.

d) To determine the amount of copper present by iodometric method (potentiometrically)

e) Estimation of Boric acid using NH_4OH by conductometric method.

References:

1. A Text book of Quantitative Analysis by A.I.Vogel , 4**th** edition
2. Advanced Practical Inorganic Chemistry By Gurdeep Raj Goel Publishing House.
3. Post Graduate Practical Chemistry (Part – 1) by H.N. Patel, S.P. Turakhia,S.S. Kelkar, S.R. Puniyani, Himalaya Publishing House.
4. Applied Analytical Chemistry: Vermani.
5. University Practical Chemistry by P.C.Kamboj
6. Commercial Methods of Analysis: Shell &Biffen

Course Outcomes (CO):

After successful completion of the course students are expected to

No.	CO	Cognitive level
1	Students will understand the process of ore analysis.	**2**
2	Students able to apply their knowledge for binary mixture separation of inorganic compounds using quantitative analysis	**3**
3	Students can analyze contents present in drug	**4**
4	Students able to evaluate the lattice energy of binary salt	**6**
5	Students are able to synthesize and evaluate the complex and also able to determination of complex purity.	**5**
6	Students understand the techniques of chromatography and its application in analysis.	**2**
7	Students able to handle and perform the instrumental analysis techniques.	**3**

CH-O-1: Organic Chemistry Practical-I
(180 Hrs., 100 Marks and 6 Credits)

Course Objectives: The practical course is designed

1. To make students aware of how to perform organic compounds in laboratory.
2. The course includes synthesis of some derivatives and organic compounds, which will help them while working in research laboratory in future.
3. This course will help them in industry or while doing research in medicinal chemistry for Drug development.
4. To make student aware of green chemistry and role of green chemistry in pollution reduction and pollution control.
5. The students learn how to avoid solvents and do solvent free reaction.
6. Also, the work-up procedure in many experiments is made more eco-friendly to environment.

Introduction to Laboratory Safety (Minimum 2 Practical)

- Meaning of safety signs on container of chemicals, safety handling of chemicals
- Handling of glassware's and care to be taken, handling of organic flammable as well as toxic solvents in laboratory,
- Use of Personal Protective Equipment (PPE) (safety goggles, shoes and gloves)
- Fire extinguisher and its use,
- Chemical Spills/Clean up: action to be taken in accidental cases e.g. cleaning of acid spill over, use eye wash station and bath station in emergency, etc. (compulsory)
- Behaviour: No food or drink policy; include information about where food and drink are allowed (if such a space exists). Explicitly state that disruptive or destructive behaviour will not be tolerated.

Single Stage Preparation Monitored by TLC (Minimum 6)

1. Acetophenone to Benzalacetophenone.
2. Resorcinol to 7-hydroxy, 4-methyl coumarin.
3. Camphor to Borneol.
4. Benzophenone to Benzhydrol.
5. Acetoacetic ester to Pyrazolone.
6. Paramino Benzoic Acid to Parachloro Benzoic Acid.
7. 2-methoxy naphthalene to 1- formyl-2-methoxy napthalene.
8. Gycine to Benzoylglycine.
9. p- nitrotoluene to p- nitrobenzoic acid.
10. Fischer Indole Synthesis-Reaction of phenyl hydrazine and cyclohexanone
11. Knoevenagel condensation reaction-Reaction of aldehyde and malononitrile.
12. Anthracene to Anthraquinone
13. Benzaldehyde to Cinnamic acid
14. Anisole to 2,4-Dinitroanisole

Purification Techniques (Minimum 8 Demonstration/Experiments)

1. Purification of two organic solids by recrystallization using solvents other than water
2. Purification of two organic liquids by upward/downward/traditional distillation technique
3. Column Chromatography technique should be performed for any one of the above

preparations

4. Purification by Sublimation Method
5. Thin Layer Chromatography technique for identification of two different compounds present in mixtures
6. Solvent extraction using Soxhlet extractor.
7. Solvent extraction by separatory funnel
8. Steam distillation.

Use of Chemistry software's like, ISI draw, Chem Draw, Chem Sketch (Minimum 4)

2. Draw the structure of simple aliphatic and aromatic compounds, heterocyclic compounds with different substituent. (Minimum Ten Compounds).
3. IUPAC name and predict the NMR Signals.
4. Sketch Design reaction mechanism scheme of any two addition and two substitution reactions.
5. Literature Search and references.

Preparation of Derivatives: (Minimum 6)

1. Acetyl
2. Benzoyl
3. Semicarbazone,
4. Amide
5. Aryloxyacetic acid,
6. Ester
7. Oxime

Introduction to Green Chemistry

Concept of green chemistry, twelve principals of green chemistry, applications of green chemistry for sustainable development, Atom economy.

Green Chemistry Preparations (Minimum 4)

1. Bromination of acetanilide using Cerric ammonium nitrate.
2. Preparation of Benzilic Acid using NaOH /KOH under Solvent-free Conditions.
3. Photo reduction of benzophenone to benzopinacol in presence of sun light using isopropanol and acetic acid.
4. Nitration of salicylic acid
5. Preparation of 1, 1-bis-2-naphthol under grinding at room temperature.
6. Alternative Green Procedure for Preparation of a Derivative for Carboxylic Acid.
7. Alternative Green Procedures for Organic Qualitative Analysis - Detection of N, S, Cl, Br, I.

Interpretation of UV, FT-IR and ^{1}H-NMR spectrum of above synthesized compounds. (Minimum 10 Compounds)

References:

1. A text book of practical organic chemistry- A. I. Vogel.

2. Comprehensive Practical Organic Chemistry by V.K. Ahluwalia and Renu Aggarwal
3. Monograph on Green Chemistry Laboratory Experiments by Green Chemistry Task Force Committee, DST
4. R. K. Bansal, Laboratory Manual of Organic Chemistry, New Age International Publisher

Course Outcomes (CO):

After successful completion of the course students are expected to

No.	CO	Cognitive level
1	Students understand the important of safety techniques and handling of chemicals.	**2**
2	Students are made aware of carrying out different types of reactions and their workup methods.	**2**
3	Students able to perform purification techniques in organic chemistry like recrystallization, distillation, steam distillation and extraction.	**3**
4	This practical course is designed to make student aware of green chemistry and role of green chemistry in pollution reduction.	**5**
5	Students are able to apply their knowledge for development of experiment involve green chemistry.	**6**

AC-201(B): Practicing Sports Activities
(Personality and Cultural Development Related Audit course; Practical; 2 Credits)

Course Objectives (CObs):

- To motivate students towards sports and provide them required training.

SR NO.	NAME OF THE SPORT/GAME (Select ONE of the Following)	SYLLABUS OF THE COURSE	TIMING (02 Hours in a Week)	SEMESTER
1	Volleyball	• General Fitness • Basic Fitness • Specific Fitness • History of the Game • Basic Skill of the Game • Major Skill of the Game • Technique & Tactics of the Game • Game Practice	Morning : 07 to 09 AM OR Evening : 05 to 07 PM	Total 30 Hours in Each Semester
2	Athletics			
3	Badminton			
4	Cricket			
5	Basketball			
6	Handball			
7	Kabaddi			
8	Kho-Kho			
9	Table-Tennis			
10	Swimming			

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Play any sports on the ground.	**2**
2	Become healthier and fit.	**3**

AC-201(C): Practicing Yoga

(Personality and Cultural Development Related Audit course; Practical; 2 Credits)

Course Objectives:

- To motivate students towards yoga and provide them required training.

- Yog: Meaning, Definition & Introduction, Objectives
- Primary Introduction of Ashtanga Yoga
- Preparation of Yogabhyas
- Omkar Sadhana, Prayer, Guru Vandana
- Sukshma Vyayamas
- Suryanamaskar (12 Postures)
- Asanas :
  - Sitting (Baithaksthiti) - Vajrasana, Padmasan, Vakrasan, Ardha-Pashchimotanasanan
  - Supine (Shayansthiti) - Uttan Padaasan(Ekpad/Dwipad), Pavanmuktasana, Viparitakarani Aasan, Khandarasan, Shavasana
  - Prone (Viparitshayansthiti) - Vakrahasta, Bhujangasana, Saralhasta Bhujangasana, Shalabhasana(Ekpad/Dwipad), Makarasana
  - Standing (Dhandsthiti) - Tadasana , TiryakTadasana, Virasana, Ardh Chakrasana
- Primary Study of Swasana: Dirghaswasana, Santhaswasana, JaladSwasana - 6 Types
- Pranayama : Anuloma-viloma, Bhramari

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Perform different yoga.	**2**
2	Perform different asanas.	**3**

AC-201(D): Introduction to Indian Music **(Personality and Cultural Development Related Audit course; Practical; 2 Credits)** **(Optional: Campus-level)**	
	Course Objectives: • To motivate students towards Indian music and provide them minimum required training. .
	• Definition and brief about generation of Swar, Saptak, Thaat, Raag, Aavartan, Meend, Khatka, Murkee, Taal, Aalaap etc. • Taal and its uses - Treetaal, Daadraa, Zaptaal, Kervaa. • Information of Badaakhyaal, Chhotaakhyaal (one), Sargam, Lakshangeet (information) • Detailed information of Tambora • Detailed information of Harmonium and Tablaa. • Five filmy songs based on Indian Classical Music (Theory and Presentation) • Sound Management - Basic information of Sound Recording (including Practicals) • Composition of Music as per the Story • Preparing news write-ups of the Seminars, Library Musical Programmes held at the nearest Akashwani, by personal visits.

Course Outcomes (CO):

On completion of this course, the student will be able to:

No.	CO	Cognitive level
1	Identify different types of Indian music.	**3**
2	Develop more interest to learn and practice Indian music.	**4**

Kavayitri Bahinabai Chaudhari

North Maharashtra University, Jalgaon

Syllabus

T.Y.B.Sc.

Subject: Chemistry

Choice Based Credit System

With Effect from June -2020

As Per U.G.C. Guidelines

Prepared By

Board of Studies

Chemistry,

Kavayitri Bahinabai Chaudhari

North Maharashtra University, Jalgaon

Syllabus

Class- T.Y.B.Sc. Subject- Chemistry

Choice Based Credit System (CBCS) (60-40) Pattern

with effect from June-2020

Structure of Curriculum of T.Y.B.Sc. (Chemistry)

Semester – V

Course Type	Course code	Course Title	Credits	Hours per week	Teaching Hours
Core I	CH – 501	Principles of Physical Chemistry-I	3	3	45
Core II	CH – 502	Inorganic Chemistry	3	3	45
Core III	CH – 503	Organic Reaction Mechanism	3	3	45
Core IV	CH – 504	Industrial Chemistry	3	3	45
Skill Enhancement (SEC)	CH – 505	Analytical Instrumentation	3	3	45
Elective **(Any One)**	CH – 506 (A)	Biochemistry	3	3	45
	CH – 506 (B)	Green Chemistry	3	3	45
Core course **(Practical)**	CH – 507	Physical Chemistry Practical	2	4 (Per Batch)	60
	CH – 508	Inorganic Chemistry Practical	2	4 (Per Batch)	60
	CH – 509	Organic Chemistry Practical	2	4 (Per Batch)	60
Non-Credit Audit Course **(Any One)**	AC-510	NSS	No Credit	2- Batches	60
	AC-511	NCC		2- Batches	60
	AC-512	Sports		2- Batches	60

Note:

1. Each lecture is of one hour (60 Minutes) duration.
2. Each theory paper has three lectures per week.
3. Each practical course has four lectures per week.
4. An industrial study tour is compulsory for the T.Y.B.Sc. Students. The students should submit their tour reports at the time of practical examination of VIth Semester.

5. Use of Chart/Text book/Hand book of practical is allowed during examination.
6. Scientific calculator (non-programmable) is allowed during theory and practical examination.
7. All units should be in SI unit.

Semester VI

Course Type	Course code	Course Title	Credits	Hours per week	Teaching Hours
Core I	CH – 601	Principles of Physical Chemistry-II	3	3	45
Core II	CH – 602	Chemistry of Inorganic Solids	3	3	45
Core III	CH – 603	Spectroscopic Methods of Structure Determination	3	3	45
Core IV	CH – 604	Chemistry of Industrially Important Products	3	3	45
Skill Enhancement	CH – 605	Analytical Techniques	3	3	45
Elective **(Any One)**	CH – 606 (A)	Polymer Chemistry	3	3	45
	CH – 606 (B)	Research Methodology for Chemistry	3	3	45
Core course **(Practical)**	CH – 607	Physical Chemistry Practical	2	4 (Per Batch)	60
	CH – 608	Inorganic Chemistry Practical	2	4 (Per Batch)	60
	CH – 609	Organic Chemistry Practical	2	4 (Per Batch)	60
Non-Credit Audit Course **(Any One)**	AC-610	Soft Skill	No Credit	2- Batches	60
	AC-611	Yoga		2- Batches	60
	AC-612	Practicing Cleanliness		2- Batches	60

Note:

1. Each lecture is of one hour (60 Minutes) duration.
2. Each theory paper has three lectures per week.
3. Each practical course has four lectures per week.

4. An industrial study tour is compulsory for the T.Y.B.Sc. Students. The students should submit their tour reports at the time of practical examination of VI Semester.
5. Use of Chart/Text book/Hand book of practical is allowed during examination.
6. Scientific calculator (non-programmable) is allowed during theory and practical examination.
7. Values required for spectral problems should be provided in the question paper.
8. All units should be in SI unit.

Chairman B.O.S. **Dean Science Faculty**

Aims and Objectives

To enable the students-

- To promote understanding of basic facts and concepts in Chemistry while retaining the excitement of Chemistry.
- To make students capable of studying Chemistry in academic and Industrial courses.
- To expose the students to various emerging new areas of Chemistry and apprise them with their prevalent in their future studies and their applications in various spheres of chemical sciences.
- To develop problem solving skills in students.
- To expose the students to different processes used in Industries and their applications.
- To develop ability and to acquire the knowledge of terms, facts, concepts, processes, techniques and principles of subjects,
- To develop ability to apply the knowledge of contents of principles of chemistry.
- To inquire of new knowledge of chemistry and developments therein.
- To expose and to develop interest in the fields of chemistry
- To develop proper aptitude towards the subjects.
- To develop the power of appreciations, the achievements in Chemistry and role in nature and society.
- To develop skills required in chemistry such as the proper handling of apparatus and chemicals.

NOTE:

1. There are in all Six theory courses (4 Core courses, 1 Skill Enhancement course, 1 Elective) and Three practical (Core course practical) courses for each semester.
2. Each theory paper carry 100 Marks out of which 40 Marks are allotted for internal assessment and 60 Marks for external assessment.

3. As per the directions given by University, at the end of each semester internal examination will be conducted for 40 marks and University Examination will be conducted for 60 Marks.
4. The student has a right to choose any one of the optional paper for V^{th} semester either CH-506 (A) OR CH-506 (B), Similarly The students has a right to choose any one of the optional paper for VI^{th} semester either CH – 606 (A) OR CH – 606 (B).
5. A student is expected to submit a journal certified by the Head of the Department/Head of the Institution for each semester.
6. A student will not be permitted to appear for the practical examination unless he/she produce a certified journal. If the journal is lost, the student should produce a certificate from Head of the department / Head of the Institution stating that he/she has satisfactorily completed the practical work.
7. Industrial tour is compulsory for all the students.

Rules for Personal Safety in Chemistry Laboratory:

- A long sleeved, knee length laboratory coat/ apron is recommended. Long pants and closed toed shoes must be worn for individual safety. Loose clothing, open style shoes and sandals are prohibited. Long hair must be tied up. Each student will have to get his / her own necessary protection items.
- For eye protection, safety goggles must be worn in the laboratory whenever necessary. If the student wears contact lenses, full protection goggles, which provide total seal around eyes, must be worn. All students are expected to wear safety goggles.
- Prior to the practical examination, the teacher-in-charge will check all protective equipment to ensure that they are in order.
- Pipetting by mouth should be avoided. Use of pro-pipette bulbs is recommended.
    - All laboratories should be equipped with safety chart, adequate first aid requirements and fire extinguishers.

Kavayitri Bahinabai Chaudhari

North Maharashtra University, Jalgaon

T.Y.B.Sc Chemistry Syllabus

(CBCS) Pattern

Semester V **Core Course I**

CH-501

Subject- Principles of Physical Chemistry-I

(Theory: Lectures = 45 hrs. Marks 60) **(Credits: 03)**

Course objectives

- To orient and acquaint the students towards the basic concepts of Quantum Chemistry
- To acquire knowledge about rates of chemical reactions and distinguishing the reaction of different order and their characteristics.
- To understand the basic principles of phase rules and phase diagrams.
- To learn the underlying principles of electrode reactions, electrochemical cells and applications of EMF.

Learning outcomes

After successful completion of this course, students are expected to:

- Understand the significance of wave function and postulates of quantum mechanics.
- Deduce rate equations and half-life equations for first and second order reactions
- Draw and explain the one and two component system phase diagrams.
- Explain the principles of electrode processes and apply them during Practicals.

UNIT-1. Basic Quantum Chemistry **(L-11, M-15)**

Failures of Classical Mechanics, Origin of quantum mechanics, Particle aspect of radiation: Blackbody radiation, Photoelectric effect, Compton Effect, de Broglie's hypothesis: Matter waves, Heisenberg uncertainty principle, Application of Heisenberg's principle,

Interpretation of wave function, Significance of ψ and ψ^2, Normalization of wave function Operators and operator algebra, Eigen functions and Eigen values, various operators in quantum mechanics: Linear momentum, Kinetic energy and Total energy operator (only equations no derivations), Postulates of quantum mechanics.

Ref. 1: 3, 5-10, 12, 13, 30, 31, 36, 37, 79-84, 115-121

Ref. 2: 3-9, 18, 27-29, 36-39, 43-48

Ref. 4: 21, 24, 32-36, 38-44

UNIT-2. Chemical Kinetics (L-11, M-15)

The concept of reaction rates. Effect of temperature, Pressure, Catalyst and other factors on reaction rates. Order and molecularity of a reaction. Derivation of integrated rate equations for zero, first and second order reactions (both for equal and unequal initial concentrations of reactants) Half–life of a reaction, Pseudo order reactions, General methods for determination of order of a reaction. Effect of temperature on reaction rate, Arrhenius equation (exponential and integrated form), Collision theory, Concept of activation energy and its calculation from Arrhenius equation, Related numerical.

Ref. 3: 732, 734-744, 751-759

Ref. 4: 970-971, 975-978, 984, 988-990, 992, 993

UNIT-3. Phase Equilibrium (L-11, M-15)

Phases, Components and Degrees of freedom of a system, Criteria of phase equilibrium. Gibbs Phase rule and its thermodynamic derivation. Derivation of Clausius –Clapeyron equation and its importance in phase equilibria. Phase diagrams of one-component systems (water and sulphur) and two component systems involving eutectics, Congruent and Incongruent melting points (lead-silver, $FeCl_3$-H_2O only), Related Numerical.

Ref. 3: 697-714, 719-721

Ref. 4: 605-607, 609-614, 616, 617, 623, 626, 627, 631, 632

UNIT- 4. Electrochemical Cell (L-12, M-15)

Introduction, overview of electrode processes, Faradaic and Non-Faradaic Processes, Introduction to electrical double layer, Factors affecting electrode reaction rate and current.

Classification of electrochemical cell, EMF expression for chemical cell with and without transference, Liquid junction potential, Types of liquid junction potential, Minimization of liquid junction potential.

Application of EMF measurement for pH using Hydrogen gas electrode, Quinhydrone electrode and Glass electrode, Related numerical.

Ref. 5: 1-4, 9, 10, 12-14, 23, 24, 64, 72, 73, 74

Ref. 4: 807, 808, 811, 812, 816-818

References and Suggested Readings

1. *Quantum Chemistry, Donald A. McQuarie, , Viva student edition, Viva Books*
2. *Quantum Chemistry, 4th edition, R. K. Prasad, New Age international Publishers.*
3. *Essentials of Physical Chemistry, Arun Bahl, B. S. Bahl, G. D. Tuli, S., Multicolor edition, S. Chand Publication.*
4. *Principles of Physical Chemistry, 44th edition, Puri, Sharma and Pathaniya, Vishal Publishing Co.*
5. *Electrochemical Methods Fundamentals and Applications, 2nd edition, Allen J. Bard and Larry R. Faulkner, John Wiley & Sons.*
6. *Chemical Kinetics, 2nd edition, K. J. Laidler,*
7. *An Introduction to Electrochemistry, S. Glasstone, East-West Press.*

Semester VI **Core Course I**

CH-601

Subject- Principles of Physical Chemistry-II

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Course objectives

- To learn the basics of molecular spectroscopy and rotational spectra.
- To understand the basic principles and applications of nuclear chemistry.
- To learn the consequences of light absorption by atoms and molecules and photochemical reactions.
- To learn the laws of crystallography and basics of crystal structure.

Learning outcomes

After successful completion of this course, students are expected to:

- Analyze the rotational spectra of diatomic molecules and determine the bond length.
- Explain and apply the radioactivity principles for various chemical and biological investigations.
- Describe the mechanism of fluorescence, phosphorescence and photochemical reactions.
- Analyze the given crystal structure and determine the indices of planes, inter-planer distances and type of crystal structure.

UNIT-1. Investigation of Molecular Structure **(L-11, M-15)**

Introduction, Dipole Moment, Induced dipole moment, Electrical polarization of molecules. Orientation of dipole in an electric field, Debye equation. Method of determination of dipole moment, Vapour temperature method, Molecular structure and dipole moment

Interaction of electromagnetic radiation with molecules, Various types of spectra Rotational, Vibration and Electronic energy levels; with principle and example of each type.

Rotational spectroscopy: Rigid and non-rigid rotor diatomic molecule-Moment of inertia, Energy Levels, Selection rule, Intensities of spectral lines, Determination of bond lengths of diatomic and linear triatomic molecules, Isotopic substitution. Related numerical

Ref. 1: 253-257, 259-261

Ref. 3: 5-9, 33-46

UNIT-2. Nuclear Chemistry (L-12, M-15)

Introduction, Radioactive elements, Types of radioactive decay, Decay schemes, General characteristic of radioactive decay, Decay kinetics, Decay constant, Half-life period, Mean life, Units of radioactivity.

Application of radioactivity – Radiochemical principle of tracer technique; Application of tracer technique – Chemical investigation reaction mechanism- esterification, hydrolysis, Oxidation - Oxidation of CO, Structure determination - PCl_5 molecules, Thiosulphate ion, C-14 dating and tritium dating, Medical applications- Thyroditis, Bone fracture Healing, Brain tumor location, Defects in Blood Circulation.

Nuclear Fusion / Fission as source of energy with example

Nuclear Pollution: Disposal of nuclear waste, nuclear disaster and its management with case study. Related numerical

Ref. 4: 118-125, 225, 247, 248, 373-378, 402, 403, 407-411

Ref. 1: 103-105, 108-110, 113-115, 120-122, 136-138

Ref 6: 87-94, 108-112

UNIT-3. Photochemistry (L-11, M-15)

Laws of photochemistry, Quantum yield, Examples of low and high quantum yields, Consequence of light absorption by atoms and molecules, Jablonski diagram, Fluorescence, Phosphorescence, Quenching. Experimental setup for determination of quantum yield with actinometer as detector

Photochemical gas reactions, Photolysis of ammonia, Combination of H_2 and Cl_2 reaction, Reaction between H_2 and Br_2, Photosensitized gas reaction, H_2 and O_2, H_2 and CO, Chemiluminescence, Related numerical.

Ref. 1: 1045-1055

Ref. 2: 1044, 1045, 1048, 1049, 1054, 1055, 1059-1061

UNIT-4. Crystal Structure (L-11, M-15)

Forms of solids. Symmetry elements, unit cells, crystal systems, Bravais lattice types and identification of lattice planes. Laws of Crystallography - Law of constancy of interfacial angles, Law of rational indices. Miller indices. X–Ray diffraction by crystals, Bragg's law and Bragg's method. Structures of NaCl, KCl and CsCl (qualitative treatment only). Defects

in crystals: Shottkey and Frenkel defects. Liquid Crystal, Types and Applications. Related numerical

Ref. 1: 449-454, 456-463, 472-474

Ref. 2: 1085-1087, 1099, 1100, 1104-1107, 1123, 1130, 1131

References and Suggested Readings

1. *Essentials of Physical Chemistry, Arun Bahl, B. S. Bahl, G. D. Tuli, S. Multicolor edition, S. Chand Publication.*
2. *Principles of Physical Chemistry, 44th edition, Puri, Sharma and Pathaniya, Vishal Publishing Co.*
3. *Fundamentals of Molecular Spectroscopy, 4th Edition, C. N. Banwell and E. M. McCash, Tata McGraw-Hill: New Delhi*
4. *Essentials of Nuclear Chemistry, Revised 4th Edition, H. J. Arnikar, New Age International Publishers.*
5. *Advance Physical Chemistry, Gurtu and Gurtu, Pragati Publication.*
6. *Environmental Pollution and Health, V. K. Ahluwalia, The Energy and Resources Institute (TERI), 2005.*

Semester V **Core Course II**

CH-502

Subject-Inorganic Chemistry

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Course objectives:

- To describe the VSEPR theory to predict shape of molecules from electron pairs.
- To describe the bonding in simple compounds using VBT.
- To describe the principles of VBT to predict hybridization of orbitals.
- To understand how CFT explains electronic structure, colour and magnetic properties of co-ordination compounds.
- To introduce the basic principles of MOT and electronic geometry of molecules.

Learning outcomes:

- Learn about the VSEPR theory and how it can be used to explain molecular shapes.
- Learn about the VBT to describe the formation of covalent bonds in terms of atomic orbital overlap.
- Learn about stability of complexes using CFSE.
- Learn about MOT to draw energy diagrams and to predict bond order.

UNIT-1: Structure and Reactivity of Molecules **(L-09, M-12)**

Valence Shell Electron Pair Repulsion Theory (VSEPR), Shapes of simple molecules and ions containing lone-and bond-pairs of electrons multiple bonding, prediction of shapes of irregular molecules and ions like - Sulphur tetra fluoride, Bromine trifluoride, Dichloroiodate (I) anion, Penta fluoro telluurate (IV) anion, Tetrachloroiodate (III) anion, Nitrogen dioxide, Phosphorus trihalides, Carbonyl fluoride, Summary of VSEPR rules Drawbacks of VSEPR theory.

Ref.1: 206-207

Ref. 3: Relevant pages.

UNIT 2: Modern Theories of Coordination Compound Part –A (L-09, M-12)

Assumptions, Werner theory and isomerism, EAN, Stability of complex ion, Factors affecting stability of complex ion, Irving William series, Stabilization of unstable oxidation state, Stereochemistry of coordination compound with C.N. 4 and 6, Isomerism in coordination compounds.

Ref. - 1: 735-737, 742-745, 748--757.

Ref. - 2: Relevant Pages.

UNIT 3: Modern Theories of Coordination Compound Part –B (L-09, M-12)

Assumptions of V.B.T., V.B. Theory as applied to structural and bonding in complexes of 3d series elements. Examples of square planar, Tetrahedral and Octahedral complexes, inner and outer orbital complexes, Magnetic properties of complexes of 3d series elements, limitations of V.B.T., Assumptions of CFT, Degeneracy of 'd' orbital's, Application of CFT to octahedral complexes, Weak and strong ligand field splitting, spectrochemical series.

Ref. 1: 759 - 766

Ref.2: Relevant Pages

UNIT 4: Modern Theories of Coordination Compound Part –C (L-09, M-12)

Definition of C.F.S.E., Calculation of C.F.S.E. in weak and strong field octahedral complexes, Evidences of C.F.S.E., Factor's affecting 10 Dq, CFT and magnetic properties, spin only magnetic moment equation, Electron occupancy in CFT, Application of CFT to tetrahedral a nd Calculation of C.F.S.E. in tetrahedral complexes. Tetragonal distortions from octahedral geometry, Jahn-Teller theorem Application of CFT to square planer complexes, Problems related to calculation of spin only magnetic moment for square planer, tetrahedral and octahedral complexes (for high spin and low spin complexes).

Ref.1: 766 -772,

Ref.2: Relevant pages

UNIT 5: Modern Theories of Coordination Compound Part –D (L-09, M-12)

Crystal field effects- Variation of lattice energies, enthalpies of hydration and crystal radii variations in halides of first and second row transition metal series and spinel structures, limitations of CFT, experimental evidences in support of metal ligand bond overlaps. ACFT,

Assumptions of Molecular orbital theory, composition of ligand group orbitals, Molecular orbital treatment (Qualitative) of octahedral complexes (strong & weak field), Effect of pi-bonding, Charge transfer spectra, Comparison of VBT, CFT and MOT.

Ref. 1: 794-796,774-778

Ref. 2: Relevant Pages

References:

1. *Principle of Inorganic Chemistry, B. R. Puri, L. R. Sharma, K. C. Kalia, Milestone Publisher and distributor.*
2. *Concise Inorganic Chemistry, 5th Edition, J. D. Lee.*
3. *Inorganic Chemistry Principles of Structure and Reactivity, 4th Edition, James E. Huheey,*
4. *Ellen A. Keiter. Richard L. Keitler.*

Semester VI **Core Course II**

CH-602

Subject- Chemistry of Inorganic Solids

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Course Objectives:

- To describe basic principles of nanomaterials.
- To describe basic synthesis of nanoparticles.
- To describe composition and technological importance of inorganic solids.
- To describe composition of cement, lime and alloys.
- To describe manufacture of fertilizers.

Learning Outcomes:

- Learn about basic principles and synthesis of nanomaterials.
- Learn about classification, composition and processing of cement.
- Learn about classification and composition of alloys.
- Learn about types manufacture and applications of fertilizers.

UNIT 1: Synthetic Methods of Nanomaterials (L-09, M-12)

Introduction to Nano science, nanostructure and nanotechnology (basic idea), Size dependent properties of nanomaterials (basic idea) a) Semiconducting nanoparticles b) Metallic nanoparticles. Synthesis routes of nanomaterials: a) Bottom up approaches i) Chemical vapor deposition (CVD) ii) Spray pyrolysis iii) Sol gel process b) Top down approaches: mechanical alloying, Role of surfactant in shape and size control of nanomaterials

Ref:1: 602-604, 624, 653-655.

Ref:2: 66-70,74-77, 79,85-87.

Ref.3: 656-658, 707-712,721-724

UNIT 2: Inorganic Solids of Technological Importance (L-09, M-12)

Inorganic pigments, Coloured solids**,** White and black pigments, Molecular materials and fullerides, Molecular material chemistry – One dimensional metals, Molecular magnets,

Inorganic liquid crystals, Solid electrolytes (a) solid cationic electrolytes (b) solid anionic electrolytes .

Ref:- 1: 607-609,642-644,647-650.

Ref.3: 661-664,696-699,703-707.

UNIT 3: Cement and Lime (L-09, M-12)

Classification of cement, Ingredients and their role, Manufacture of cement and the setting process, Quick setting cements. Manufacture of lime and applications

Ref.4: Relevant pages

Ref.5: Relevant pages

UNIT 4: **Fertilizers (L-09, M-12)**

Plant Nutrients, Different types of fertilizers, need for fertilizers, requisite qualities of fertilizers, symptom of deficiency, Manufacture of following fertilizers:- Urea, Ammonium nitrate, Calcium ammonium nitrate, Ammonium phosphate, Super phosphates, Compound and Mixed fertilizers, Potassium chloride and Potassium sulphate.

Ref.5: Relevant pages

Ref.6: Relevant pages

UNIT 5: **Alloys (L-09, M-12)**

Classification of alloys, Ferrous and Non-ferrous alloys, Specific properties of elements in alloys, Manufacture of steel, Removal of silicon, decarburization, demagnetization and desulphurization. Composition and properties of different types of steels

Ref.7: Relevant pages

Ref.8: Relevant pages

Reference:

1. *Inorganic Chemistry, 4^{th} /5^{th} edition, Shriver and Atkins*
2. *Textbook of Nano Science and technology, B. S. Murthy, P. Shankar, Badev Raj, B. B. Rath and James Murday, University Press III M, Metallurgy and Material Sciences.*
3. *Inorganic Chemistry, 6^{th} Edition, Weller, Overton, Rourke & Armstrong.*
4. *Shriver Chemical Process Industry, 5^{th} edition, George T. Austin.*
5. *Industrial Chemistry, 14^{th} edition, B. K. Sharma,2004.*
6. *Riegels Handbook of Industrial chemistry, 9^{th} Edition, James A. Kent, CBS Publishers and Distributors*

7. *Engineering Chemistry, S. S. Dara.*
8. *Engineering Chemistry, B. K. Sharma, Goel Publishing House, Meerut.*
9. *Engineering Chemistry, P. C. Jain and M. Jain Dhanpat Rai and Sons Delhi.*

Semester V **Core Course III**

CH-503
Subject- Organic Reaction Mechanism

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Learning Objectives

- To study different types of organic reactions.
- To understand the mechanisms of different types of reactions.
- To distinguish between types of substrates and types of reagents.
- To understand ways of attack of reagent, breaking and formation of bonds in different reaction mechanisms.
- To study kinetics, evidences and factors affecting different types of reactions.
- To study stereochemistry of different reactions.
- To understand role of different reagents in different reactions.

Course Outcomes

- Students will learn organic reactions like nucleophilic substitution, electrophilic substitution, nucleophilic addition, electrophilic addition and elimination.
- Students will be able to write/ explain mechanisms of those types of reactions.
- Students will understand how a reaction takes place in one or more steps.
- Students will understand the types of intermediates formed in different reactions.
- Students will learn how reagent attacks the substrate molecule and accordingly how bonds break and formed.
- Students will learn how change in structure of substrate, reagent and solvent changes the product formed and its stereochemistry.

- Students will be able to predict the products and to suggest the mechanisms.

UNIT 1. Nucleophilic Substitution at Saturated Carbon (9 L, 12M)

SN^1, SN^2 and SN^i reactions, Mechanism and stereochemistry, regioselectivity and stereo specificity of substitution reaction. Scope at saturated carbon, allylic carbon and vinylic carbon. Factors affecting rate of SN^1, SN^2 and SN^i reactions (Effect of nature of substrate, nucleophile, leaving group and solvent).Neighboring group participation (norbornyl & norbornenyl systems), Non-classical carbocation's.

Ref:- 1: 328-359, 931-937.

Ref:- 2: 293-369.

Ref: - 3: 257-328.

Ref: - 4: 179-200.

UNIT 2. Electrophilic Addition to C=C (9 L, 12M)

Introduction, Mechanism of electrophilic addition to C=C bond ($Ad_{2}{}_{E}$Mechanism)**,** addition of hydrogen halides, orientation of addition: Markownikoff's and Anti Markownikoff's addition (peroxide effect), stereochemistry, addition of halogens: experimental evidences for two step mechanism, mechanism of addition of bromine, factors affecting anti-stereoselectivity, effect of substituents on rate of addition, addition of hypohalous acids (HOX), Hydroxylation (Mechanism of formation of cis and trans 1,2-diols), Hydroboration- Oxidation (Formation of alcohol), Hydrogenation (Formation of alkane), Ozonolysis (formation of aldehydes & ketones).

Ref:- 1: 427-447.

Ref:- 2: 734-742, 783-788.

Ref: - 4: 323-360, 425-440

UNIT 3. Nucleophilic Addition to C=O (9 L, 12M)

Introduction, Structure of carbonyl group, reactivity of carbonyl group,

Addition of Hydrogen cyanide, alcohols, thiols, water, ammonia derivatives.

Aldol and Cannizzaro Reaction, Perkin reaction, Wittig reaction, Reformatski reactions,

Reduction reactions using $NaBH_4$, $LiAlH_4$ with mechanism.

Ref:- 1: 222-239.

Ref:- 2: 879-919.

UNIT 4. Aromatic Substitution Reactions **(09 L, 12M)**

Electrophilic substitution

Introduction, arenium ion mechanism, Effect of substituent group (Orientation, o/p directing and meta directing groups). Classification of substituent groups (activating and deactivating groups) Mechanism of: Nitration, Sulfonation, Halogenation, Friedal-Crafts reactions (alkylation and acylation), Diazo Coupling reactions, Ipso-substitution.

Nucleophilic substitution

Addition- elimination (SNAr), Elimination-addition (Benzyne) mechanism with evidences, Chichibabin reaction

Ref:- 1: 471-527.

Ref:- 2: 501-521, 641-653.

Ref: - 4: 517-545, 943-967.

UNIT 5. Elimination Reactions: **(9 L, 12M)**

Introduction, The reaction mechanisms: E1, E2, E1CB with evidences and factors affecting the reaction.E1 v/s E2 and Elimination v/s substitution. Anti and Syn elimination, Stereo electronic factors. Bredt's rule. Dehydrohalogenation, Dehalogenation, Dehydration, Hoffmann and Saytzeff's elimination, Pyrolytic elimination.

Ref:- 1: 382-406.

Ref:- 2 : 982-1010.

Ref: -4 : 273-310.

References

1. *Organic Chemistry, Second Edition. J. Clayden, N. Greeves & S. Warren and P. Wothers (Oxford).*
2. *Advanced Organic Chemistry-Reactions, Mechanisms and Structure, 5th Edition, Michael B. Smith, Jerry March.,Wiley-VCH, Weinheim, 2000,*
3. *Advanced Organic Chemistry Part A- Structure and Mechanisms, 3rd Edition, A. Carey and R.J. Sundberg. Springer US, Third Edition*
4. *Organic Chemistry, 6th Edition, R. T. Morrison and R. N. Boyd.*
5. *Web- Organic Chemistry Portal*

Semester VI **Core Course III**

CH-603

Subject- Spectroscopic Methods of Structure Determination

(Theory: Marks 60 Lectures = 45 hrs) **(Credits: 03)**

Course Objectives

- To study principle of spectroscopy and to understand wave parameters and terms involved in spectroscopy.
- To study different types of spectroscopy.
- To understand principle, concept and the terms used in each type of spectroscopy.
- Interpretation of UV, IR, NMR spectra.
- Use of spectral data for determination of structure of unknown organic compounds.
- To study different applications of each type of spectroscopy.

Learning Outcomes

- Students will learn interaction of radiations with matter. They will understand different regions of electromagnetic radiations. They will know different wave parameters.
- Students will learn principle of mass spectroscopy, its instrumentation and nature of mass spectrum.
- Students will understand principle of UV spectroscopy and nature of UV spectrum. They will learn types of electronic excitations.
- Students will be able to calculate maximum wavelength for any conjugated system. And from the value of λ-max they will be able to find out extent of conjugation in the compound.
- Students will understand principle of IR spectroscopy, types of vibrations and the nature of IR spectrum.

- From IR spectrum, they will be able to find out IR frequencies of different functional groups. And thus, they will be able to find out functional groups present in the compound.
- Students will understand principle of NMR spectroscopy and will understand various terms used in NMR spectroscopy. They will learn measurement of chemical shift and coupling constants.
- Students will be able to interpret the NMR data and they will be able to use it for determination of structure of organic compound.
- Students will be able to determine structure of simple organic compounds on the basis of spectral data such as λ max values, IR frequencies, chemical shift (δ values).

UNIT 1. A) Introduction to Spectroscopy (9L, 12M)

Introduction, meaning of spectroscopy, nature of electromagnetic radiation, wave length, frequency, energy, amplitude, wave number, and their relationship, different units of measurement of wavelength and frequency, different regions of electromagnetic radiations. Interaction of radiation with matter. Excitation of molecules with different energy levels, such as rotational, vibrational and electronic level. Types of spectroscopy, advantages of spectroscopic methods

Ref:- 2: 1-19.

Ref:- 4 : 13-19.

B) Mass spectroscopy

Basic theory, Nature of mass spectrum, Importance of molecular ion peak, isotopic peaks, base peak, nitrogen rule, rule of 13 for determination of empirical formula and molecular formula.

Ref:- 1: 170-186.

Ref:- 2: 415-424.

Ref:- 3 : 2-15.

Ref:- 4 : 401-417.

UNIT 2. Ultra Violet Spectroscopy (9L, 12M)

Introduction, nature of UV spectrum, Beer's law, absorption of UV radiation by organic molecule leading to different excitations. Terms used in UV Spectroscopy: Chromophore,

Auxochrome, Bathochromic shift (Red shift), hypsochromic shift (Blue shift), hyperchromic and hypochromic effect. Effect of conjugation on position of UV band. Calculation of λ-max by Woodward and Fisher rules: for dienes and enone system, Applications of UV Spectroscopy: Determination of structure, determination of stereo chemistry (cis and trans), problems.

Ref:- 1: 1-27.

Ref:- 2: 9-53.

Ref:- 4: 367-398.

UNIT 3. Infra-red Spectroscopy (9 L, 12M)

Introduction, Principle of IR Spectroscopy, fundamental modes of vibrations (3N-6, 3N-5) Types of vibrations (Stretching and bending), Regions of IR Spectrum: functional group region, finger print region and aromatic region, Characteristic IR absorption of functional groups: Alkanes, alkenes, alkynes, alcohol, ethers, alkyl-halides, carbonyl compounds (-CHO, C=O, -COOR, -COOH), amines, amides and Aromatic Compounds and their substitution Patterns. Factors affecting IR absorption: Inductive effect, resonance effect, hydrogen bonding. Applications of IR Spectroscopy: determination of structure, chemical reaction and hydrogen bonding, Problems.

Ref:- 1 : 28-57.

Ref:- 2 : 65-154.

Ref:- 3 : 71-109.

Ref:- 4 : 26-93.

UNIT 4. NMR Spectroscopy (9L,12M)

Introduction, Principles of NMR Spectroscopy, Magnetic and nonmagnetic nuclei, Precessional motion of nuclei without mathematical details, Nuclear resonance, chemical shift, shielding, & deshielding effect. Measurement of chemical shift, delta and Tau-scales. TMS as reference and its advantages, peak area, integration, spin-spin coupling, coupling constants, *J*-value (Only first order coupling be discussed), problems.

Ref:- 1: 63-145.
Ref:- 2 : 185-356.
Ref:- 3 : 144-216.
Ref:-4 : 108-160.

UNIT 5. Combined Problems Based on UV, IR, NMR & Mass (9 L, 12M)

Determination of structure of simple organic compounds on the basis of spectral data such as λ max values, IR frequencies, chemical shift (δ values), coupling constant, peak values provided to the students.

Reference Books:

1. *Spectroscopic Methods in Organic Chemistry, D. H. Williams & I. Fleming, 5th Ed.*
2. *Spectroscopy of Organic Compounds, P. S. Kalsi, New Age Int. Pub., 6th Ed., 2007*
3. *Spectrometric Identification of Organic Compounds, R. M. Silverstein and F. X. Webster , John Wiley and Sons Inc, 7th Edition.*
4. *Introduction to Spectroscopy, Donald L. Pavia, Gary M. Lampman, George S. Kriz and J. R. Vyvyan. Indian Edition. Cengage Learning; 5th edition (2015)*

Semester V **Core Course IV**

CH-504

Subject- Industrial Chemistry

(Theory: Lectures 45 hrs, Marks 60) **(Credits: 03)**

Course objectives

- To produce graduates with enhanced skills, applied knowledge, aptitude to carry out higher studies or research and development in the various industrial areas.
- To make the student cognizant about important aspects of Chemical Industries, Industrial work culture and environment.
- To prepare the students for immediate entry to the workplace with sound theoretical knowledge and some basic experimental concepts in the area of various industries viz. Sugar Industry, Fermentation Industry, Petroleum and Petrochemicals.
- To offers the synergism between basic concepts of Chemistry with Industrial applications.
- To equip the students with knowledge of some industrial organic synthesis as requirement of diverse chemical industries.
- Empower the students to understand the concepts in chemical processing, engineering and industrial development.

Learning outcomes

From the course CH: 504 Industrial Chemistry**,** the student will be able to understand….

- Basic requirements of Chemical Industry, different terms, operations and processes involved in chemical Industry.
- Describe Copy Right Act, Patent Act and Trade Marks, Bureau of Indian Standards (BIS) and International Organization for Standardization (ISO).

- Basic requirements, raw materials, different processes and operations involved in Sugar Industry and also different grades of sugar and uses of by-products of sugar industry.
- Importance of fermented products, basic requirements, theory and process of alcohol making, fractional distillation and various terms involved in Fermentation Industry.
- Understand Occurrence of Petroleum, theories of formation of Petroleum and different terms Viz. Knocking, Anti-Knock Compounds, Octane number, Cetane number, Gasohol and Power alcohol etc.
- Manufacturing processes involved in Industrial Organic Synthesis such as Methanol, Isopropanol, Glycerol, Acetylene and Aromatic hydrocarbon i.e. Toluene from petroleum with their uses.

UNIT 1: General Aspects of Industrial Chemistry (L-9, M-12)

Introduction, Basic Requirements of Industrial Chemistry, Chemical Production, Raw Materials, Unit Process and Unit Operations, Quality Control, Quality Assurance, Process Control, Research and Development, Pollution Control, Human Resource, Safety Measures, Classification of Chemical Reactions, Batch and Continuous Process, Conversion, Selectivity, Yield, Copy Right Act, Patent Act and Trade Marks. Bureau of Indian Standards (BIS), International Organization for Standardization (ISO)

Ref.1: Chapter 2(26, 27, 31 to 36)

Ref.4: Chapter 1 and 2 (Relevant Pages)

Ref.6: Chapter 1, 2 and 3 (Relevant Pages)

Ref: Websites and Web Pages

www.wikipedia.org/wiki/patentact , www.wikipedia.org/wiki/trademarks, www.wikipedia.org/wiki/trademarks,www.wikipedia.org/wiki/bis www.wikipedia.org/wiki/iso

UNIT 2: Sugar Industry (L-9, M-12)

Introduction, Sugar Industry in Maharashtra and India, Manufacture of Cane Sugar- [Refining (with flow sheet)], General Idea of Sulphitation and Carbonation, Concentration /Evaporation, Crystallization Separation of crystals. Grades, Baggase, Cellotex

Ref.3: Chapter 38 1208 to 1218 (Relevant Points Only)

UNIT 3: Fermentation Industry **(L-9, M-12)**

Introduction, Alcohol fermentation, Uses of alcohol, Theory underlying process of making alcohols beverages, Manufacture of Beer, Manufacture of Spirit, Alcohol from Cane Sugar Molasses, Theory of fractional distillation – Coffey'still, Rectified spirit, Absolute alcohol, Fusel oil, Proof spirit, Denatured alcohol.

Ref.2:578-596.

Ref.3: Chapter 36, 1175-1190 (Relevant Points Only)

UNIT4: Petroleum Industry. **(L-9, M-12)**

Occurrence, Petroleum producer countries in the world, Exploration Methods, Composition of Petroleum, Refining or Distillation of Petroleum, Anti-Knock Compounds, Octane number, Cetane number, Petrohol (their definitions only), Manufacture of Petrol or Gasoline by Bergius Method, Cracking process- Thermal, Catalytic, Hydro cracking.

Ref.1: 340 to 352, 356 to358 and 363 to 368.

Ref.3: Chapter 4, 217 to 311 and Chapter 5, 312 to 342 (Relevant Points only)

UNIT 5: Industrial Organic Synthesis **(L-9, M-12)**

Manufacture of methanol from synthesis gas, Isopropanol from propylene, Glycerol from propylene via allyl chloride, Acetone by catalytic dehydrogenation of isopropanol. (with flow sheet diagram), Unsaturated Hydrocarbon –preparation of Acetylene from Natural gas (with flow sheet), Aromatic hydrocarbon- Preparation of toluene (with flow sheet)

Ref.3: Chapter 11, 439 to 451 and Chapter 14, 493 to 522 (Relevant Points Only).

References:

1. *Principles of Industrial Chemistry, Chris A Clausen III and Guy Mattson, John Wiley and Sons, Inc. Somerset, 1978, New York.*
2. *Shreve's Chemical Process Industries, George T. Austin, 5 th Edition, The McGraw-Hill, 1984, New York.*
3. *Industrial Chemistry, B. K. Sharma, 16th Edition, Goel Publishing House, Meerut,(U.P.) 2011, India.*
4. *Comprehensive Industrial Chemistry, P.G. More, 1st Edition, Pragati Prakashan, Meerut, (U.P.) 2010, India.*

5. *Chemistry and Technology of the Cosmetics and Toiletries Industry, D.F. Williams and W.H. Schmitt Blackie Academic & Professional First edition 1992 Second edition 1996 © Chapman & Hall ISBN-13 :978-94-0 10-7194-9 e-ISBN-13:978-94-009-1555-8*
6. *Handbook of Industrial Chemistry Organic Chemicals, Mohammad Farhat AIi, Bassam M. El AIi, James G. Speight, The McGraw-Hill Companies, 2005, ISBN 0-07-141037-6*

Semester VI **Core Course IV**

CH-604

Subject- Chemistry of Industrially Important Products

(Theory: Lectures 45 hrs, Marks 60) **(Credits: 03)**

Course objectives

- To make student perceptive about various commodity industries viz. Cosmetics and Perfumes, Dyes and Pharmaceuticals, Pesticides, Soaps and Detergents, related diversified and multidisciplinary fields of chemical industry.
- To produce graduates with enhanced skills, knowledge and research aptitude to carry out higher studies or research and development in the various industrial areas.
- To equip students with advance knowledge about various industrially important products.
- To makes students ready for immediate entry to the workplace with sound theoretical and basic experimental knowledge in the areas of various industries.
- To engender the substantial interest in the students to understand the concepts in chemical processing, engineering and industrial development of present era viz. Cosmetics and Perfumes Industry, Dyes and Pharmaceuticals, Pesticides, Soaps and Detergents, related multidisciplinary and diversified fields of chemical industry.
- To describe the industrial production of a number of important organic and inorganic compounds / chemicals and products of end use.
- To gain comprehensive knowledge of cutting-edge developments in a field of different chemical industries by discussions and exchange of experiences and knowledge.
- To develop proficiency in application of current aspects of industrial chemistry.

Learning Outcomes

On successful completion of the course **CH: 604 Chemistry of Industrially Important Products**, the student will be able to understand….

- Describe the industrial production of a number of important organic and inorganic compounds / chemicals and products of end use.
- Gain comprehensive knowledge of cutting-edge developments in a field of different chemical industries.
- Importance of Cosmetics Industry and a general study including preparation and uses of the Hair dye, hair spray, shampoo, suntan lotions, lipsticks, talcum powder, nail enamel, creams (cold, and shaving creams).
- Perfumes and identify the distinguishing features of its components and also an essential oils and their importance in cosmetic industries with reference to Eugenol, Geraniol, sandalwood oil, eucalyptus, rose oil, 2-phenyl ethyl alcohol, Jasmone, Civetone, Muscone etc.
- Know about pesticides both natural and synthetic, benefits and adverse effects of it, also synthesis, manufacture and uses of pesticides viz. Organochlorines (DDT, Gammexene,); Organophosphates (Malathion, Parathion); Anilides (Alachlor and Butachlor).
- Definition, classification, raw material used in soaps and detergents, reaction involved in it, Manufacture of Soaps and cleansing action of soaps and detergents.
- Definition, properties of good dyes, relation between colour and constitution, classification of dyes according to their mode of application and chemical constitution.
- Importance's, definition and meaning of the different terms involved in Drugs and Pharmaceuticals Industry and also synthesis, uses, properties and industrial manufacture of Paracetamol, Aspirin, and Chloramphenicol.

UNIT 1: Chemistry of Cosmetics (L-9, M-12)

Introduction, Raw materials and general study including preparation and uses of the following: Hair dye, shampoo, suntan lotions, lipsticks, talcum powder, nails enamel, creams (cold and shaving creams).

Ref.: 6 Chapter -1, 1 to 34, Chapter -2, 36 to 100, Chapter -3, 104 to 145, Chapter - 4 149 to 181 and Chapter- 9, 290 to 309. Relevant Points Only

UNIT 2: Chemistry of Perfumes (L-9, M-12)

Essential oils A general study including properties, uses and importance in cosmetic industries with reference to Eugenol, Geraniol, sandalwood oil, eucalyptus, rose oil, 2-phenyl ethyl alcohol, Jasmone, Civetone, Muscone and antiperspirants and artificial flavours.

Ref. 3: Chapter 53, 1520 to1544 Relevant Points Only.

Ref.6: Chapter 8, 272 to 289, Chapter 10, 310 to 344, Relevant Points Only.

UNIT 3: Pesticide Chemistry (L-9, M-12)

General introduction to pesticides and their changing concepts (natural and synthetic), benefits and adverse effects of pesticides, structure activity relationship, synthesis and uses of representative pesticides in the following classes: Organochlorines (DDT, Gammexene,); Organophosphates (Malathion, Parathion); Anilides (Alachlor and Butachlor).

Ref.3: Chapter 41, 1280 to1318 Relevant Points Only.

Ref.7: Chapter 11, 381 to 426 Relevant Points Only.

UNIT 4: Soap and Detergents (L-9, M-12)

Soaps, Surfactants and its Importance, Raw Materials used in Soap Manufacture, Manufacture of Soaps (Continuous Process), Cleansing action of Soap, Classification of Soaps, Detergents, Principal group of Synthetic Detergents, Detergents builders and Additives, Comparison between Soap Detergent.

Ref.3: Chapter 39, 1219 to1251 and Chapter 40,1252 to1279 Relevant Points Only.

Ref. 6: Chapter- 5, 123 to160 Relevant Points Only.

UNIT 5: Dyes, Drugs and Pharmaceuticals. (L-9, M-12)

(a) Dyes: Introduction, properties of dyes, Otto Witts theory only, Classification of dyes according to their mode of application and Chemical Constitution.

Ref.3: Chapter 54, 1545 to1608 Relevant Points Only.

Ref.6: Chapter 8, 259 to 288 Relevant Points Only.

(b) Drugs and Pharmaceuticals: Introduction, Importance, Qualities of good drugs, Functional and chemotherapeutic drugs, Meaning of the terms: Prescriptions, Doses, Analgesic, Antipyretics, Antibiotics, Anti-inflammatory, Anti-viral, Cardiovascular, Cough and Cold Preparations, Sedatives and Hypnotics, contraceptives. Synthesis, uses, manufacture and properties of Paracetamol, Aspirin, Chloramphenicol

Ref.4: Chapter 8, 144 to194 Relevant Points Only.

Ref.6: Chapter 10, 331 to 379 Relevant Points Only.

References:

1. *Principles of Industrial Chemistry, Chris A Clausen III and Guy Mattson, John Wiley and Sons, Inc. Somerset, 1978, New York.*
2. *Shreve's Chemical Process Industries, George T. Austin, 5 th Edition, The McGraw-Hill, 1984, New York.*
3. *Industrial Chemistry, B. K. Sharma, 16th Edition, Goel Publishing House, Meerut,(U.P.) 2011, India.*
4. *Comprehensive Industrial Chemistry, P.G. More, 1stEdition, Pragati Prakashan, Meerut,(U.P.) 2010, India.*
5. *Chemistry and Technology of the Cosmetics and Toiletries Industry, D.F. Williams and W.H. Schmitt Blackie Academic &. Professional First edition 1992 Second edition 1996 © Chapman & Hall ISBN-13 :978-94-0 10-7194-9 e-ISBN-13:978-94-009-1555-8*
6. *Handbook of Industrial Chemistry Organic Chemicals, Mohammad Farhat AIi, Bassam M. El AIi, James G. Speight, The McGraw-Hill Companies, 2005, ISBN 0-07-141037-6*

Semester V **Skill Enhancement Course**

CH-505

Subject- Analytical Instrumentation

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Course Objectives

- To develop an understanding of the range and uses of analytical methods in chemistry.
- To understand and establish the role of chemistry in quantitative analysis.
- To enhance the Analytical instrumental skill of the students.

Learning Outcomes

- Explain the fundamentals of analytical methods and instruments for qualitative and quantitative Analysis.
- Express the role of analytical chemistry in science.
- Students will be able to function as a member of an interdisciplinary problem solving team.

UNIT 1:-Spectrometry **(9L, 12M)**

Origin of spectra Interaction of electro-magnetic radiation with matter, Electro-magnetic Spectrum, The Absorption of Radiation, Solvents for Spectrometry, Quantitative Calculations, Beer's Law, Principles of instruments - Sources, Monochromators (prism, diffraction gratings, Optical filters), Cells, detectors, Slits Width, Single Beam Spectrometer, Spectrometric Errors, Deviation from Beer's Law - Chemical deviation, Instrumental deviation, Problems.

Ref.-1:- 398-401, 410-411, 413--435, 439-443.

Ref. 2 -6:-Relevant Pages

UNIT 2: Infrared Spectrometry **(9L, 12M)**

Infra red Spectrometry – Principles, Theory, Instrumentation, Source, monochromator, detectors, Single beam, Double beam, Types, Sampling Technique, Solvents, Spectrometric error, FTIR introduction, General applications.

Ref.-2: 447 – 458

Ref.-4: 527-576

Ref. 2-6: Relevant Pages

UNIT 3. A: Emission Spectrometry (9L, 12M)

Flame Emission Spectroscopy – Principles, Theory, Instrumentation, Experimental techniques, Interferences and applications , Advantages and disadvantage, Plasma Emission Spectrometry – Principles, Plasma as excitation source, inductively coupled Plasma source, ICP-AES Instrumentation, Applications.

Ref.-1: 462 - 467

Ref. 2-6: Relevant Pages

B:-Atomic Absorption Spectrophotometry

Introduction, Principles, Advantages over FES, Instrumentation – Sources, Burners, Flames, Interferences – Spectral Interferences, Ionization Interferences, Refractory Compound Formation,Hallow cathode lamps, Physical Interferences, Use of Organic Solvents, Sample Preparation, Applications of AAS. Comparison of AAS with atomic emission methods

Ref.-1: 467 - 475

Ref. 2-6:Relevant Pages

UNIT 4:-Potentiometry (9L, 12M)

Potentiometer, The Cell for Potential Measurements, Combination Electrode, Theory of Glass Membrane Potential, The Alkaline Error, The Acid Error, Standard Buffers, Ion-selective Electrodes - Glass Membrane Electrodes, Precipitate Electrodes, Solid-State Electrodes, Liquid-Liquid Electrodes, Plastic Membrane/Ionophore Electrodes, Coated Wire electrodes, Enzyme Electrodes.

Ref.-1: 312-313,316-325

Ref.-2 -6: Relevant Pages

UNIT 5:-P^Hmetry (9L, 10M)

Introduction to pH meter, The Glass pH Electrode Principle, Accuracy of pH Measurements, Measurements with the pH-meter, Making the pH Measurement, Fundamental limitations, Maintenance.

Ref.-8: 327-333

Ref.-2 - 8: Relevant Pages

Reference Books:-

1. *Analytical Chemistry, G.D. Christian, 5th Edition.*
2. *Analytical Chemistry Principal- J. H. Kennedy. 2nd Edition (1990)*
3. *Analytical Chemistry, An Introduction, Skoog, West and Holler, 6 th Edition*
4. *Instrumental Method of Chemical Analysis, Chaitwal and Anand, 5th Edition.*
5. *Basic Concept of Analytical Chemistry, S.M. Khopkar*
6. *Instrumental Methods of Chemical Analysis- Willard, Merritt, Dean and Settle, 6th Edition*
7. *Introduction to Instrumental Analysis, R.D. Braun*
8. *Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R. C. Denney, J. D. Barnes, M. J. K. Thomas, 6th Edition,*

Important Instrument web links

Instruction Manual Operation Guide UV-1800 Shimadzu Spectrophotometer,
http://www.sustainable-desalination.net/wp-content/uploads/2013/05/UV-1800.pdf

Instruction Manual Operation Guide Agilent 5500 Series FTIR,
https://www.agilent.com/cs/library/usermanuals/public/5500_series_ftir_operation_manual.pdf

Instruction Manual Operation Guide Agilent 700 Series ICP Optical Emission Spectrometers,
https://www.agilent.com/cs/library/usermanuals/public/8510230100_700SeriesICP_UserManual.pdf

Instruction Manual Operation Guide Flame Atomic Absorption Spectrometry,
https://www.agilent.com/cs/library/usermanuals/Public/0009.pdf

Instruction Manual Operation Guide Potentiometry,
http://nhp.mowr.gov.in/docs/HP2/MANUALS/Water%20Quality/5014/-download-manuals-WaterQuality-WQManuals-32PotentiometricAna.pdf
http://shop.hannasingapore.com/media/pdf/2016-01-11-HI901C-Full.pdf

User Manual pH meter F-71, HORIBA, Ltd. 2011
http://library.metergroup.com/Manuals/Horiba/BenchtopPh/F-71%20Manual.pdf

Semester VI **Skill Enhancement Course**

CH-605

Subject- Analytical Techniques

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Course Objectives

- To provide knowledge of instruments which are used in Chemical, Pharma, Petroleum, and insecticide and pesticide industry
- To increase student technical skill as per industry need.
- To develop an understanding of the range and uses of analytical methods in chemistry.

Learning Outcomes

- Compare the Instrumental methods and non instrumental methods and there advantages.
- Solve the problem of detection and separation using analytical instruments.
- Students will be able to explore new areas of research in both chemistry and allied fields of science and technology.
- Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental problems.

UNIT 1:- Solvent Extraction **(9L, 12M)**

The Distribution Co-efficient, The Distribution Ratio, Percent Extracted, Solvent Extraction of Metals - Ion Association Complex and Metal Chelates, The Extraction Process, The Separation Efficiency of Metal Chelates, Analytical Separations, Multiple Batch Extractions, Countercurrent Distribution, Simple numerical problems on Percent Extracted and Multiple Extraction, Problems

Ref.1: 484 to 498.

Ref. 2-6: Relevant Pages

UNIT 2:- High-Performance Liquid Chromatography (9L, 12M)

Introduction, Principles, Equipment for HPLC, Choice of Column Materials for HPLC, Application

Ref.1: 537 to 545

Ref.2-6: Relevant Pages

UNIT 3:- Gas Chromatography (9L, 12M)

Introduction, Principles, Gas chromatography Columns, Gas Chromatography Detectors, Column Efficiency in Chromatography- Theoretical Plates, 1) Van Deemter Equation, 2) Capacity Factor and 3) Resolution, Problems

Ref.1: 522 to 528, 511 to 515

Ref.2-6:- Relevant Pages

UNIT 4:- Ion Exchange Chromatography (9L, 12M)

Introduction, Cation Exchange Resins, Anion Exchange Resins, Cross-linkage, Effect of pH Separation of Amino Acids, Effect of Complexing Agents-Separation of Metal ions on Anion Exchange Columns, Applications of Ion Exchange Chromatography

Ref.1: 517 to 522

Ref. 2-6: Relevant Pages

UNIT 5:-Thermal Methods (9L, 12M)

General Discussion, Thermogravimetry- Instruments for thermogravimetry, Applications of thermogravimetry, Differential Techniques- Differential Thermal Analysis (DTA) and Differential Scanning Calorimetry (DSC), Instruments for DTA and DSC, Experimental and Instrumental Factors, Applications of DTA and DSC, Problems

Ref.-6: 503 - 519

Ref. 1-6: Relevant Pages

Reference Books:-

1. *Analytical chemistry, G.D. Christian, 5th Edition,*
2. *Instrumental Methods of Chemical Analysis, Chatwal and Anand*
3. *Basic Concept of Analytical Chemistry, S.M. Khopkar, 2nd edition,*
4. *Chemical Analysis by A. K. Shriwastawa, P. C.Jain, S. Chand and Company.*
5. *Quantitative Analytical Chemistry, James S. Fritz, George H.Schenk,5th Edition.*
6. *Vogel's Text Book of Quantitative Chemical Analysis, J. Mandham, R.C.Denney, J. D. Barnes, M. Thomas, B. Shivashankar, 6th Edition.*

Important Instrument web links

The LC Handbook Guide to LC Columns and Method Development,

https://www.agilent.com/cs/library/primers/public/LC-Handbook-Complete-2.pdf

Handbook and user manual of Gas chromatography

https://www.agilent.com/cs/library/usermanuals/Public/G3430-90011.pdf

Handbook and user manual of Ion Exchange Chromatography

https://www.agilent.com/cs/library/primers/Public/5991-3775EN_BioIEX_HowTo_LR.pdf

Handbook and user manual of Ion Differential Scanning Calorimetry

https://www.perkinelmer.com/CMSResources/Images/46-74542GDE_DSCBeginnersGuide.pdf

Semester V **Elective Course**

CH-506(A)

Subject- Biochemistry

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Learning Objectives

- To study different types of biomolecules.
- To study structure of biomolecules.
- To study classification of each type of biomolecules.
- To study reactions of the biomolecules.
- Study of metabolism and thus, study of metabolic processes and reactions involved.
- To study energetics of the metabolic processes.
- Students should understand: Structure and role of Carbohydrates, Amino acids, Proteins, Enzymes, lipids, Nucleic Acids and energy rich compounds in biochemical reactions.

Course Outcomes

- Students will study biomolecules like carbohydrates, amino acids, proteins, enzymes, lipids and nucleic acids.
- Students will understand definitions, classifications and examples of these biomolecules.
- Students will learn the detailed structure of these biomolecules along with types of bonds or linkages present in their molecules.
- Students will learn the chemical properties of these biomolecules and the action of some reagents on them in the form of reactions or graphical presentation.
- Students will understand biochemical energetics of common energy rich compounds along with hydrolytic reactions.

- Students will learn metabolisms like Glycolysis, TCA cycle, Transamination, deamination and β- oxidation through reactions, enzymes involved, outlines and energetics.

Unit 1. Carbohydrates (L-09, M-12)

a) Introduction, definition, classification.

b) Monosaccharaides: structure of glucose (open chain and ring structures). Kiliani Fischer synthesis of D-glucose. Reactions of glucose: oxidation with bromine water and nitric acid, reduction, acetylation, addition of HCN, NH_2OH and phenyl hydrazine, mutarotation.

c) Disaccharides: structure of sucrose, lactose and maltose.

d) Polysaccharides: storage polysaccharides, structure of starch, Structural polysaccharides, structure of cellulose.

Ref 1 and 2: Relevant pages

Unit 2. Amino Acids and Proteins (L-09, M-12)

a) Amino acids: Introduction, structure of ammo acids, classification of amino acids, amphoteric nature of amino acids, reactions of amino acids: with FDNB and Dansyl chloride, formation of peptide bond

b) Proteins: Introduction, classification of proteins: based on functions and based on shape, structure of proteins: primary, secondary, tertiary and quaternary structure). Study of some proteins: α keratins and hemoglobin. Separation of amino acids and proteins by paper electrophoresis and dialysis

Ref 1 and 2: Relevant pages

Unit 3. Enzymes and Lipids (L-09, M-12)

a) Enzymes: Introduction, specificity of enzymes, classification, role of enzymes in biochemical reactions, Michaelis Menten equation (no derivation). Effect of substrate concentration, P^H and temperature on enzyme catalyzed reactions. Enzyme inhibitors: introduction and types.

b) Lipids: Introduction, classification of lipids, fatty acids, nomenclature of fatty acids, triacyl glycerols, hydrogenation of oils, Saponification value and iodine value of oils, phospholipids and waxes.

Ref 1 and 2: Relevant pages

Unit 4. Nucleic Acids and Energy Rich Compounds (L-09, M-12)

a) **Nucleic acids**: Introduction, Components of nucleic acids: sugars, bases, nucleosides and nucleotides. Watson and Crick model of DNA, types of RNA (structure not expected)

b) **Energy rich compounds**: Introduction, Pyrophosphates, acyl phosphates, enolic phosphates, thiol esters (structure, hydrolytic reaction and energetics). Energy carriers in biological redox systems: NAD^+ and FAD

Ref 1 and 2- Relevant pages

Unit 5. Metabolism (L-09, M-12)

Definition of metabolism,

a) Carbohydrate metabolism: Glycolysis: reactions involved and energetics, TCA cycle (Kreb cycle): Reactions involved and energetic

b) Amino acid Metabolism: Transamination, deamination (by enzymes - glutamic dehydrogenase, ammonia lyases, deaminases and deamidases), decarboxylation

c) Lipid Metabolism: β- oxidation of fatty acids, reactions involved in β –oxidation, energetics of β –oxidation of palmitic acid.

Ref 1 and 2- Relevant pages

Reference Books

1. *Outlines of Biochemistry, Conn and Stumpf (4^{th}Edition)*
2. *Principles of Biochemistry, A. L. Lehninger (2^{nd} Edition)*

Semester V **Elective Course**

CH-506(B)

Subject- Green Chemistry

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Course Objectives:

- There is rising concern since 1970 about environmental pollution, depleting resources, climate change, ozone depletion, legislation which is getting stringent with strict environmental laws, rising cost of waste deposits, health concern and so on.
- We are facing the challenge to work towards sustainable development. Since 1990, today's society is moving towards becoming more and more environmentally conscious.
- Green chemistry has been introduced in1990 for overall sustainable development against the environmental concerns.
- Green chemistry is not a new branch of chemistry, but it is a new way chemistry, which should be practiced regularly.
- Innovations and applications of green chemistry in education has helped companies not only to gain environmental benefits but at the same time to achieve economic and societal goals also.
- This is possible because these undergraduate students are ultimate scientific community of tomorrow.

Learning Outcomes:

- With this course, the graduate students will be able to understand the twelve principles of green chemistry that will help to build the basic understanding of toxicity, hazards and risk of chemical substances.
- The course will help to understand stoichiometric calculations and relate them to green chemistry metrics. The students will learn about atom economy and understand its importance over percentage yield.

- The students will learn to design safer chemicals, products and processes that are less toxic than the conventional chemistry, understand significance of catalysis, use of renewable feed stock, renewable energy sources, importance of green solvents, etc.
- The course will train the students to appreciate green chemistry and boost the students to think and develop the skills to innovate and search for the solutions to environmental problems.
- Green chemistry is only way of future chemistry to ensure sustainability with absolute zero waste. The success stories and real-world cases will motivate the young generation to practice green chemistry.

UNIT 1. Introduction to Green Chemistry (L-04, M-04)

Definition of Gr**e**en Chemistry. Drawbacks of conventional chemistry. Need of Green Chemistry, Minamata Disease. Goals of Green Chemistry

Ref:1 Relevant Pages

Ref:6 Relevant Pages

UNIT 2. Principles of Green Chemistry and Designing a Chemical Synthesis (L-12, M-18)

Twelve principles of Green Chemistry, role of Paul T. Anastas, importance of green chemistry with examples: Prevention of waste/by-products, Atom economy, Prevention or Minimization of hazardous products, Designing safer chemicals, Energy requirements for synthesis, Selection of suitable solvents, Selection of starting materials, Use of protecting groups, Use of catalysts, Designing of biodegradable products, Prevention of chemical accidents, Strengthening of analytical techniques, industrial safety.

Ref:1 Relevant Pages

Ref:2 Relevant Pages

UNIT 3. Techniques in Green Chemistry (L-12, M-16)

a) Microwave assisted synthesis- Introduction and importance, Applications- Esterification, Fries rearrangement, Orthoester Claisen Rearrangement, Diels-Alder Reaction,Hofmann Elimination.

b) Ultrasound assisted reactions- Introduction and importance, Application- Esterification, saponification, aromatic substitution reactions, alkylation, oxidation, reduction.

Ref:1 Relevant Pages

Ref:3 Relevant Pages

UNIT 4. Solvents, Reagents and Catalysts in Green Chemistry (L-14, M-18)

a) Solvents- Introduction and Importance, Examples-Michael Addition in water, Bis-indolyl methane in ionic liquid, tetrazole synthesis in deep eutectic solvent.

b) Reagents- Introduction and Importance, Examples- Alkylation using dimethyl carbonate, Solid phase peptide synthesis using Merrifield reagent.

c) Catalysts- Introduction and Importance, Examples- Reduction of carbonyl group using Baker's yeast, Esterification using Lipase enzyme, Zeolite clay and Cyclodextrin.

Ref:1 Relevant Pages

Ref 2: Relevant Pages

UNIT 5. Future Trends in Green Chemistry (L-03, M-04)

Biomimetic, Photochemical reactions, Multifunctional Reagents, Green chemistry in sustainable development.

Ref:1 Relevant Pages

Ref 3: Relevant Pages

Ref 5: Relevant Pages

Reference Books:

1. *New Trends in Green Chemistry, V.K. Ahluwalia and M.R. Kidwai: Anamalaya Publishers (2005).*
2. *Green Chemistry- Theory and Practical, P.T. Anastas and J.K. Warner: Oxford University Press (1998).*
3. *Introduction to Green Chemistry, A. S. Matlack: Marcel Dekker (2001).*
4. *Real-World Cases in Green Chemistry, M.C. Cann & M.E. Connely: American Chemical Society, Washington (2000).*
5. *Introduction to Green Chemistry, M. A. Ryan & M. Tinnesand, American Chemical Society, Washington, (2002).*
6. *Silent Spring, Rachel Carson, Houghton Mifflin Company, (1962).*

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Semester VI **Elective Course**

CH-606(A)

Subject- Polymer Chemistry

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Learning Objectives

- The course offers the basic concepts of polymer, polymerization, classes of polymers, important properties, and poly(lactic acid) as a biodegradable polymer.
- The course also offers to study preparation, properties, and applications of industrially important selected polymers.
- The course will give chance to study various mechanisms of polymerization and learn different techniques of polymerization.
- The student will be able to understand glass transition temperature and factors affecting on it and various ways to express molecular weight of polymers.

Course Outcomes

After completing this course, the graduate should be able to

- Define terms like monomer, polymer, polymerization, polydispersity index, etc., classify polymers based on their origin, native backbone chain, and thermal response.
- Know glass transition temperature and its determination, various ways to express molecular weights of polymers and polydispersity index.
- Identify different mechanisms of polymerizations *viz*. free radical, ionic, and condensation polymerizations.
- Distinguish techniques of polymerization based on physical conditions required for the preparation of polymers in laboratory or industry.
- Familiar with preparation, properties, and applications of industrially important selected polymers.

UNIT 1. Basic Concepts of Polymers **(L-09, M-12)**

Introduction, brief history, monomers and polymers, degree of polymerization, functionality, linear, branched and cross linked polymers, homopolymers, Types of copolymers:- random, alternate, block and graft copolymers, Tacticity (stereochemistry) of polymers: isotactic, syndiotactic and atactic polymers. Classification of polymers:- based on a) origin- natural and synthetic polymers b) native backbone chain – organic and inorganic polymers c) thermal response – thermoplastic and thermo setting polymers d) ultimate form and use – plastic, elastomer, fibre and liquid resin, Degradation of polymers:- types of degradation: chain end and random degradations.

Ref. 1 and 2: Relevant pages

UNIT 2. Chemistry of Polymerization **(L-09, M-12)**

Introduction, chain growth polymerization (initiation, propagation, termination, and kinetics): free radical polymerization, ionic (cationic and anionic) polymerizations, step growth polymerization (mechanism and kinetics), ring opening polymerization.

Ref. 1 and 2: Relevant pages

UNIT 3. Polymerization Techniques & Polymer Processing Techniques

(L-9, M-12)

Polymerization techniques: - Bulk polymerization, solution polymerization, suspension polymerization, emulsion polymerization, interfacial condensation polymerization.
Polymer processing techniques:- Calendaring, die casting, film casting, and compression moulding.

Ref. 1 and 2: Relevant pages

UNIT 4. Study of Some Important Polymers **(L-09, M-12)**

Preparation, properties and applications of - Polyethylene [PE], Polypropylene [PP], Poly(vinyl chloride) [PVC], Polystyrene [PS], Polyacrylonitrile [PAN], Polycarbonates [PC], Phenol-formaldehyde resins [PF], Epoxy resins, Polyester - Polyethyleneterephthalate[PET], Polyamides (Nylon-6 and Nylon-6,6), Poly(vinyl alcohol) [PVA], Poly(lactic acid) [PLA], Polyaniline, and Polybutadiene.

Ref. 1 and 2: Relevant pages

UNIT 5. Glass Transition Temperature **(L-09, M-12)**

Glass transition temperature:- Definition and explanation, factors affecting glass transition temperature, Glass transition temperature and molecular weight, Glass transition temperature and melting point, importance of glass transition temperature, determination of glass transition temperature by dilatometry.

Molecular weights of polymers:-types of molecular weights-number average molecular weight, weight average molecular weight, viscosity average molecular weight, sedimentation average molecular weight, and poly dispersity index.

Ref. 1 and 2: Relevant pages

Reference Books

1. *Polymer Science, V. R. Govarikar, N. V. Viswanathan, JayadevSreedhar, New Age International (P) Ltd., New Delhi, 1997.*
2. *Text books of Polymer Science, F. W. Billmeyer, John Wiley & Sons; 3rd edition,1984.*

Semester VI **Elective Course**

CH-606(B)

Subject- Research Methodology for Chemistry

(Theory: Lectures = 45 hrs, Marks 60) **(Credits: 03)**

Course Objectives:

- To familiarize students towards basics of research, process of research and methods.
- To enable the student in conducting research work and formulating research synopsis and report.
- To learn the analysis of primary research articles and peer review articles.
- To improve student understanding of how scientific questions are developed and posed through proposals and dissemination of research results.
- To learn the scientific method of collecting and analyzing information.
- To learn the presentation of scientific information
- To aware the students about proper laboratory safety and techniques.

Learning outcomes:

The learning outcomes for this course of the following Chemistry Graduate Program Goals:

- Students will learn about what is research, research methods and impact of chemical research on society through pure and applied research.
- Students will learn how to analyze research in chemistry drawn from contemporary primary chemical literature.
- Student will formulate thesis topic, explain its significance and propose the methodology to be used in the thesis topic research.
- Student will demonstrate proficiency in scientific writing which includes:

- Ability to interpret and synthesize primary research literature related to the student's thesis topic.
- Ability to write a coherent narrative that explains the significance of the thesis research with regard to the primary research literature.
- Ability to report original research results in a coherent narrative.
- Ability to explain and defend conclusions draw from original results in narrative form.
- Prepare and present scientific topics orally utilizing presentation software such as PowerPoint.

- Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
- Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
- Students will be able to communicate the results of scientific work in oral, written and electronic formats.
- Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behaviour in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.

UNIT 1: Introduction to Research **(L-9, M-12)**

Definition of Research, Objectives of Research, Importance, and need for Research in a related field. Motivation in Research Methods versus Methodology, Classification and types of Research, Pure and applied Research, Difference between Computational lab and wet lab research, theoretical and experimental models, Criteria of Good Research Application of theoretical knowledge in designing of experiments. Methods of Data Collection

List of National Importance Institutes and List of CSIR Laboratories

Ref. 3: 1-24.

UNIT 2: Print Literature Resources **(L-9, M-12)**

Sources of information: Primary, secondary, 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 with examples.

Ref. 1: 299-317;

Ref. 2: 1569-1603

UNIT 3: Digital Literature Resources (L-9, M-12)

The Internet and World Wide Web. Internet resources for chemistry. Finding and citing published information. Web resources, E-journals, Journal access, TOC alerts, Citation index, Impact factor, H-index, UGC infonet, E-books. The introduction of Search engines, Scirus, Google, Google Scholar, Chem Industry, Wiki- Databases, ChemSpider, American Chemical Society, Royal Society of Chemistry, Wiley-inter science, Science Direct, Springer, SciFinder, Scopus, C&EN News Reaxys.

Ref. 1: 299-317;

Ref. 2:1569-1603

UNIT 4: Writing Scientific Reports (L-9, M-12)

Writing Skills, Reporting practical and project work, Referencing, Organizing a poster display. Communication Skills, Body Language, Giving an oral presentation. Content of Research Papers, How to download Research Paper? How to Read Research Paper, Abstract and Summary. What are Paper, Patent and Review? Introduction of Plagiarism and self Plagiarism.

Ref. 1: 325-348; Ref. 3: 344-360.

UNIT: 5 Chemical Safety and Ethical Handling of Chemicals (L-9, M-12)

Safe working procedure and protective environment, protective apparel, emergency procedure and first aid, laboratory ventilation. Safe storage and use of hazardous chemicals, procedure for working with substances that pose hazards, flammable or explosive hazards, disposal of waste chemicals, recovery, recycling and reuse of laboratory chemicals, incineration and transportation of hazardous chemicals.

Ref. 6: 1.31–1.36, 1.40, 2.1-2.16, 5.79-5.85, 7.41-7.50, 8.25-8.31.

Reference Books:

1. *Practical Skills in Chemistry, 2nd Ed, .Dean, J. R., Jones, A. M., Holmes, D., Reed, R., Weyers, J. and Jones, A. Prentice-Hall, Harlow (2011)*
2. *APPENDIX A: The Literature of Organic Chemistry March's Advanced Organic Chemistry: Reactions, Mechanisms, and Structure, Seventh Edition, by Michael B. Smith and Jerry March Copyright John Wiley & Sons, Inc. (2013)*
3. *Research Methodology: Methods And Techniques, 3rd edition, Kothari, C.R. Published by New Age International (P) Ltd., Publishers (2004),*
4. *How to Use Excel in Analytical Chemistry and in general Scientific Data Analysis. Levie, R. de, Cambridge Univ. Press (2001).*
5. *Chemical Safety Matters – IUPAC – IPCS, Cambridge University Press, (1992).*
6. *OSU Safety Manual 1.01*
7. *Laboratory Safety for Chemistry Students, Hill R. H., Finster D. C. 8th ed.; John Wiley and Sons: Hoboken, NJ, March (2017).*

T.Y.B.Sc. Chemistry

Semester -V **Course No:- CH-507**

Subject: Physical Chemistry Practical

(Practical: Lectures = 60 hrs, Marks 60) **(Credits: 02)**

Course Objectives

- To develop skills required in chemistry such as the appropriate handling of apparatus, instruments and chemicals.
- The student will learn the laboratory skills needed to design, safely conduct and interpret chemical research.
- To expose the students to an extent of experimental techniques using modern instrumentation.
- The student will develop the ability to effectively communicate scientific information and research results in written and oral formats.

Learning Outcomes

- Students will get basic analytical and technical skills to work effectively in the various fields of chemistry.
- Students will able to calibrate and handle instruments like conductometer, potentiometer, pH meter, colorimeter, spectrophotometer, polarimeter.
- They have ability to perform accurate quantitative measurements with an understanding of the theory and use of contemporary chemical instrumentation, interpret experimental results, perform calculations on these results and draw reasonable, accurate conclusions.
- They get skills required in chemistry such as the proper handling of apparatus and chemicals.
- They will have ability to present scientific and technical information resulting from laboratory experimentation in both written and oral formats.

- Students will apply conductometer, potentiometer, pH meter, colorimeter, spectrophotometer, polarimetery techniques for analysis and measurement.

Instructions:

- The student should perform at least 10 experiments from each semester. It is expected to perform at least one experiment from each technique.
- Use dilute solutions and in minimum amount.
- Use 50 ml volumetric flasks for preparation of solutions
- Scientific calculators (non-programmable) and practical handbooks are allowed during practical examination.

Conductometry:

1. Conductometric titration of mixture of acids and hence determine the strength of acids.
2. Determine the degree of hydrolysis and hydrolysis constant of sodium acetate conductometrically.

Potentiometry:

1. Determine Ecal and pH of buffer solution (Citric acid + Na_2HPO_4) using quinhydrone electrode.

2. Determine the pKa and Ka of weak monobasic acid by potentiometric titration.

P^Hmetry:

1. Determine the amount of aspirin in the given tablet.
2. Determine the pKa of various mixtures of sodium acetate and acetic acid in solution and hence to find the dissociation constant.

Polarimetry:

1. To study the kinetics of inversion of cane sugar by polarimeter.
2. Determine the concentration of given solution of an optically active substance (cane sugar) by polarimetric measurement.

Flame Photometry:

3. Estimation of Na / K by flame photometer in the given sample.

Refractometery:

1. Determine the refractive indices of series of KCl solution and hence unknown concentration of given KCl solution**.**

Chemical Kinetics:

1. Study the hydrolysis of methyl acetate in presence of hydrochloric acid.
2. Determine the energy of activation of the reaction between $K_2S_2O_8$ and KI. (Equal initial concentration)
3. Investigate the kinetics of iodination of acetone (zero order reaction).

Viscosity:

1. Determine the molecular weight of high polymer using its solution of different concentration.

Partition coefficient:

1. Determine the partition coefficient of iodine between carbon tetrachloride and water**.**

T.Y.B.Sc. Chemistry

Semester -VI **Course No:- CH-607**

Subject: Physical Chemistry Practical

(Practical: Lectures = 60 hrs, Marks 60) **(Credits: 02)**

Instructions:

- The student should perform at least 10 experiments from each semester. It is expected to perform at least one experiment from each technique.
- Use dilute solutions and in minimum amount.
- Use 50 ml volumetric flasks for preparation of solutions.
- Scientific calculators (non programmable) and practical handbooks are allowed during practical examination

Conductometry:

1. Determine the relative strength of monochloro acetic acid and acetic acidconductometrically.
2. Determine the basicity of organic acid by conductometric measurement.

Potentiometry:

1. Determine the amount of sodium chloride in a given solution by potentiometric titration with silver nitrate.
2. Determine formal redox potential of Fe^{2+} to Fe^{3+} by potentiometric titration.

Colorimeter / Spectrophotometer:

1. Determination of λ max and concentration of unknown Cu^{2+} solution and verify Beer's law.
2. Verify Beer's law, determine unknown concentration and molar extinction coefficient of Potassium permanganate.

P^Hmetry:

1. Determine the pKa and Ka of weak monobasic acid by pH metric titration.
2. Determine the degree of hydrolysis and hydrolysis constant of aniline hydrochloride pH metrically.

Polarimetry:

1. Determine the percentage of two optically active substances (d- sucrose and d-tartaric acid) in a mixture polarimetrically**.**

Radioactivity:

1. Determine the E_{max} of Beta particle.

Refractometry:

1. Determine the refractive index of four liquids, hence specific and molarrefraction.
2. Determine the molar refraction of homologous methyl, ethyl and propylalcohol and show that constancy configuration to molar refraction by $–CH_2$group.

Chemical Kinetics:

1. Investigate the reaction between H_2O_2 and KI by gas burette method.
2. Determine the order of the reaction between potassium persulphate and potassium iodide by fractional change method.

Viscosity:

1. Determine the radius of glycerol/sucrose molecule by viscosity measurement.

References:-

1. *Findley's Practical Physical Chemistry, B.P.Levitt, 9th Edition, Longman group Ltd.*
2. *Advanced Physical Chemistry Experiments, J.N.Gurtu and Amit Gurtu, Pragati Prakashan*
3. *Systematic Experimental Physical Chemistry S.W. Rajbhoj, Dr. T.K. Chondekar, 3rd edition, Anjali Publication, Aurangabad.*
4. *Experimental Physical Chemistry, V.D.Athawale, P. Mathur, New age International Ltd,New Delhi.*
5. *Advanced Practical Physical Chemistry, J. B. Yadav, Goel Publishing House, Meerut*
6. *Advanced Practical's in Physical Chemistry. Dr. Pande, Dr. Mrs. Datar, Dr. Mrs. Bhadane, 4th revised Edition, Manali Publication, Pune.*
7. *Experimental Physical Chemistry, R.C. Das, B.Behra, Tata McGrawHill.*

STRUCTURE OF INTERNAL PRACTICAL EXAMINATION

Time allowed – 3 Hours **Marks – 40**

Q.1 Any One experiment from (CH-507/607)	**30 Marks**
Q.2 Oral	**10 marks**

Total: 40 Marks

STRUCTURE OF EXTERNAL PRACTICAL EXAMINATION

Time allowed: 3 Hours **Marks: 60**

Semester V (CH-507)

Q. 1. Any One experiment from CH-507	**40 Marks**
Q.2 Oral	**10 Marks**
Q.3 Certified Journal	**10 Marks**

Total: 60 Marks

STRUCTURE OF EXTERNAL PRACTICAL EXAMINATION

Time allowed: 3 Hours **Marks: 60**

Semester VI (CH-607)

Q. 1. Any One experiment from CH-607)	**40 Marks**
Q.2 Oral	**10 Marks**
Q.3 Certified Journal	**05 Marks**
Q.4 Industrial Tour Report	**05 Marks**

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Total: 60 Marks

T.Y.B.Sc. Chemistry

Semester -V **Course No:- CH-508**

Subject: Inorganic Chemistry Practical

(Practical: Lectures = 60 hrs, Marks 60) **(Credits: 02)**

Course Objectives:

- To analyze the inorganic mixtures.
- To determine metal from ore and alloy analysis.
- Using colorimetric analysis to determine amount of metal.

Learning outcomes:

- Student will able to determine cation & anion from inorganic mixtures by using qualitative analysis.
- Student will able to determine metal from ore & alloys.
- Students will be able to design & carry out scientific experiments as well as accurately record & analyze the results of experiments.
- Students will be able to handle colorimeter for estimation of metal ions.

1. **Inorganic Qualitative Analysis: (Any Five)**
   Binary mixtures containing common anions (Excluding phosphates and borates)
2. **Ore Analysis: (Any Two)**
   i) Heamatite ore - Estimation of Iron volumetrically
   ii) Pyrolusite ore- Estimation of Manganese volumetrically
   iii) Dolomite ore - Estimation of Calcium volumetrically
3. **Alloy Analysis: (Any Two)**
   i) Estimation of Zn from Brass alloy .
   ii) Estimation of Tin gravimetrically as SnO_2 from solder alloy.
   iii) Estimation of Copper iodometrically from nichrome alloy.
   iv) Determination of iron gravimetrically from stainless steel.
4. **Colourimetric analysis (any one)**
   i) Colourimetric titration of Cu(II) against EDTA method .
   ii) Estimation of Titanium using hydrogen peroxide.

IMPORTANT NOTE:

- For volumetric analysis pipette out solution should be 10 ml
- Preparation of stock solution or standard solution should be in **100/50ml volumetric flask** in order to avoid wastage of chemicals.

References

1. *A Text Book of Quantitative Inorganic Analysis, A. I. Vogel, 4th edition*
2. *Vogel's Qualitative Inorganic Analysis, A. I. Vogel.*
3. *Practical Chemistry, O. P. Pandey, D. N. Bajpai, S. Giri, S. Chand Publication, New Delhi.*
4. *Post Graduate Practical Chemistry, H. N. Patel, S. P. Turakhia, S. S. Kelker, S. **R.** Puniyani, Himalaya Publishing House.*
5. *College Practical Chemistry, H. N. Patel, S. P. Turakhia, S. S. Kelker, S.R. Puniyani, Himalaya Publishing House.*
6. *Practical Chemistry, K. K. Sharma, D. S. Sharma, Vikas Publication.*

T.Y.B.Sc. Chemistry

Semester -VI **Course No:- CH-608**

Subject: Inorganic Chemistry Practical

(Practical: Lectures = 60 hrs, Marks 60) **(Credits: 02)**

Course Objectives:

- To determine metal from gravimetric estimations.
- To determine amount of metal by volumetric analysis.
- To determine preparation /synthesis of co-ordination compound.
- To study separation techniques of metals.
- To use colorimetric analysis of metal.

Learning Outcomes:

- Students will be able to prepare co-ordination compounds.
- Students will be able to determine amount of metal by using quantitative analysis.
- Students will be able to calculate Rf value of metal.
- Students will be able to design & carry out scientific experiments as well as accurately record & analyze the results of experiments.
- Students will be able to explain why chemistry is an integral activity for addressing social, economic & environmental problems.

1. Gravimetric Estimations: (Any Two)

i) Fe as Fe_2O_3

ii) Zn as $Zn_2P_2O_7$

iii) Pb as lead chromate

iv) Al as Al_2O_3

2. Volumetric Analysis: (Any Two)

i) Manganese by Volhards method.

ii) Estimation of Nickel by EDTA method.

iii) Determination of strength of NaOH and Na_2CO_3 in a given solution.

iv) Estimation of ferrous and ferric by dichromate method.

3. **Inorganic Preparations: (Any Three)**
   i) Bis (ethylenediamine) copper (II) sulphate.
   ii) Potassium trioxalato chromate (III).
   iii) Tris (acetylacetonato) Iron (III).
   iv) Hexaaquonickel (II) chloride.
   v) Potassium tris oxalatoaluminate (III)trihydrate.
   vi) Synthesis of ZnO nanoparticles using Zinc acetate dihydrate
4. **Colourimetric Analysis: (Any One)**
   i) Estimation of iron using thiocynate method.
   ii) To determine the concentration of cobalt in the given solution using R-nitroso salt by colourimetry.
5. **Paper Chromatography: (Any Two mixtures)**

   Separation and identification of binary mixture of cations (Fe^{3+},Ni^{2+}, Cu^{2+},Co^{2+}, Mn^{2+},Zn^{2+})

IMPORTANT NOTE:

- For volumetric analysis pipette out solution should be 10 ml
- Preparation of stock solution or standard solution should be in **100/50 mL volumetric flask** in order to avoid wastage of chemicals.

References:

1. *A Text Book of Quantitative Inorganic Analysis, 4th edition, A. I. Vogel,*
2. *Vogel's Qualitative Inorganic Analysis, A. I. Vogel.*
3. *Practical Chemistry, O. P. Pandey, D. N. Bajpai, S. Giri, S. Chand Publication, New Delhi.*
4. *Post Graduate Practical Chemistry, H. N. Patel, S. P. Turakhia, S. S. Kelker, S. R. Puniyani, Himalaya Publishing House.*
5. *College Practical Chemistry, H. N. Patel, S. P. Turakhia, S. S. Kelker, S.R. Puniyani Himalaya Publishing House.*
6. *Practical Chemistry, K. K. Sharma, D. S. Sharma, Vikas Publications.*

STRUCTURE OF PRACTICAL EXAMINATION

Inorganic Chemistry Practical

CH-508, Semester-V

Internal Examination Pattern

Time Allowed: 3Hrs. **Max. Marks: 40**

Q 1. Inorganic Qualitative Analysis/Ore Analysis/ Alloy Analysis	**30 Marks**
Q 2. Oral	**10 Marks**
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	40 Marks

External Examination Pattern

Time Allowed: 3Hrs. **Max. Marks: 60**

Q 1. Inorganic Qualitative Analysis/Ore Analysis/ Alloy Analysis	**40 Marks**
Q 2. Oral	**10 Marks**
Q 3. Journal (completed and certified)	**10 Marks**
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	60 Marks

Inorganic Chemistry Practical

CH-608, Semester-VI

Internal Examination Pattern

Time Allowed: 3Hrs. **Max. Marks: 40**

Q 1. Gravimetric Estimations/Volumetric Analysis/colorimetric Analysis/ Inorganic Preparation and Paper Chromatography	**30 Marks**
Q 2. Oral	**10 Marks**
	40 Marks

External Examination Pattern

Time Allowed: 3Hrs. **Max. Marks: 60**

Q 1. Gravimetric Estimations/Volumetric Analysis/colorimetric Analysis/ Inorganic Preparation and Paper Chromatography	**40 Marks**
Q 2. Oral	**10 Marks**
Q 3. Journal (completed and certified)	**05 Marks**
Q 4. Industrial Tour Report	**05 Marks**
	60 Marks

T.Y.B.Sc. Chemistry

Semester -V **Course No: - CH-509**

Subject: Organic Chemistry Practical

(Practical: Lectures = 60 hrs, Marks 60) **(Credits: 02)**

Course Objectives

- To develop skills required in chemistry such as the appropriate handling of apparatus and chemicals.
- The student will learn the laboratory skills needed to design, safely conduct and interpret chemical research.
- To expose the students to an extent of experimental techniques using modern instrumentation.
- The student will develop the ability to effectively communicate scientific information and research results in written and oral formats.

Learning Outcomes

- Separate and analyze binary water insoluble mixture.
- Separate and analyze binary water soluble mixture.
- Estimate - Acetamide, Glucose and Glycine by volumetric method,
- Estimate basicity of various acids.
- Synthesis of various organic compounds through greener alternatives.
- Understand Thin Layer Chromatographic techniques and physical constant.
- Understand the purification technique use in organic chemistry.

I) Separation of Binary Mixtures and Qualitative Analysis (Any 6)

a) Solid-Solid (4 Mixtures) b) Solid-Liquid (1 Mixture) c) Liquid-Liquid (1 Mixture)

At least one mixture from each of the following should be given-Acid-Base, Acid-Phenol, Acid-Neutral, Phenol-Base, Phenol-Neutral, Base-Neutral and Neutral- Neutral. (Solid-solid mixtures must be insoluble in water)

Note:

- Students are expected to determine type of the mixture and to separate the mixture.
- Separation of the Mixture should be done by chemical method only.
- It is expected to perform preliminary tests, physical constants, detection of elements and determination of functional groups of separated compounds.
- On the basis of above tests, students are expected to determine structure of compounds.
- The separated compounds should be purified and then melting point of purified compound should be determined. The purified samples of the separated components should be submitted.
- Separation and qualitative analysis of the binary Mixtures should be carried out on micro scale using micro scale.

II) Organic Estimations (Any 2)

1. Estimation of acetamide
2. Estimation of basicity (Number of -COOH groups) of acid
3. Estimation of glycine
4. Saponification value of oil

III) Green Chemistry Preparation (Any 2)

1. Synthesis of acetanilide from aniline by using Zn dust / acetic acid.
2. Synthesis of dibenzalpropanone from benzaldehyde and acetone. using $LiOH.H_2O$/NaOH
3. Synthesis of p- bromo acetanilide from acetanilide by using KBr.
4. Synthesis of dihydropyrimidinone from ethyl ace to acetate, benzaldehyde and urea
5. Diels-Alder reaction between furan and maleic acid [4+2] Cycloaddition Reaction

T.Y.B.Sc. Chemistry

Semester -VI **Course No:- CH-609**

Subject: Organic Chemistry Practical

(Practical: Lectures = 60 hrs, Marks 60) **(Credits: 02)**

I) Organic preparations **(Any 6)**

1. Benzoquinone from Hydroquinone (Oxidation by $KBrO_3$ or $K_2Cr_2O_7$)
2. Preparation of Sudan-I (Diazocoupling)
3. p-nitroacetanilide from Acetanilide (Nitration)
4. 2-Naphthyl ether from 2-Naphthol (Methylation by DMS, NaOH)
5. Hippuric acid from Glycine (Benzoylation)
6. p-Iodonitrobenzene from p-Nitroaniline (Sandmeyer Reaction)
7. m- Nitro aniline from m-Dinitrobenzene (Reduction)
8. Benzoic acid from Ethyl benzoate (Ester hydrolysis)
9. Isolation of Starch from Potato
10. Adipic acid from Cyclohexanone (Oxidation by Con. HNO_3)

II) Preparation of derivatives **(Any 3)**

1. Oxime derivative of aldehydes or Ketones
2. Aryloxy acetic acid derivative of Phenol
3. 2, 4 DNP derivative of aldehydes or Ketones
4. Glucosazone derivative of Glucose
5. Anilide derivative of acid

III) Purification techniques **(Any 1)**

1. Solvent extraction using separating funnel
2. Preparative TLC
3. Steam distillation

Note:

- The Preparation or derivative should be carried out on small scale and the starting compound should not be given more than one gm.

- Purity of the sample in Preparation and derivative can be checked by thin layer Chromatography (TLC).
- If product is impure, it should be purified.
- The Head of the Department must see that the industrial tour will be arranged collectively by the Department staff members.

Reference Books

1. *Practical Organic Chemistry, A. I. Vogel, Pearson, 5th Edition, 2005.*
2. *Practical Organic Chemistry, O. P. Agarwal, Krishna Prakashan Media (P) Ltd, 2014.*
3. *University Practical Chemistry, P. C. Kamboj, Vishal Publishing Co.; 1st (Reprint) Edition, 2013.*
4. *Comprehensive Practical Organic Chemistry-Qualitative Analysis, V. K. Ahluwalia and Renu Aggarwal, Universities Press, 2016.*
5. *R.B. Woodward and H. Baer, J. Am. Chem. Soc. 1948, 70, 1161.*
6. *D. C. Rideout and R. Breslow, J. Am. Chem. Soc. 1980, 102, 7816.*
7. *Green Chemistry: Theory and Practice, Anastas, P.T and Warner, J.C. Oxford University Press (1998).*
8. *Monograph on Green Chemistry Laboratory Experiments, Green Chemistry Task Force Committee, DST*

STRUCTURE OF INTERNAL PRACTICAL EXAMINATION

Time allowed – 3 Hours **Marks – 40**

Q.1 Any One experiment from CH-509/609) **30 Marks**

Q.2 Oral **10 marks**

STRUCTURE OF EXTERNAL PRACTICAL EXAMINATION

Time allowed: 3 Hours **Marks: 60**

Semester V (CH-509)

Q.1 Separation of Binary Mixtures and Qualitative Analysis of any one Compound
OR Organic Estimation
OR Green Chemistry Experiment **40 Marks**

Q.2 Oral **10 Marks**

Q.3 Journal (completed and certified) **10 Marks**

Semester VI (CH-609)

Q.1 Organic Preparation / Derivative / Purification technique **40 Marks**

Q.2 Oral **10 Marks**

Q.3 Journal (completed and certified) **05 Marks**

Q.4 Industrial Tour Report **05 Marks**

Instructions

- In case of binary mixture experiment, examinee should identify type of mixture and should separate the mixture. After separation, examiner should ask the examinee to analyze any one compound from the mixture.
- In case of preparation of organic compounds and derivatives, product should be purified by recrystallization.
- Industrial tour is compulsory for each student.

Kavayitri Bahinabai Chaudhari
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T.Y.B.Sc Chemistry
(CBCS) Pattern equivalence

Equivalence in accordance with titles and contents of papers (for revised syllabus from June 2020) are as follows…

Sr. No.	Title of Old Paper		Title of New Paper	
	Semester-V			
1.	CH -351	Physical Chemistry	CH – 501	Principles of Physical Chemistry-I
2.	CH -352	Inorganic Chemistry	CH – 502	Inorganic Chemistry
3.	CH -353	Organic Chemistry	CH – 503	Organic Reaction Mechanism
4.	CH -354	Analytical Chemistry	CH – 504	Industrial Chemistry
5.	CH -355	Industrial Chemistry	CH – 505	Analytical Instrumentation
6.	CH -356 (A)	Bio Chemistry	CH – 506 (A)	Biochemistry
7.	CH -356 (B)	Environment Chemistry	CH – 506 (B)	Green Chemistry
8.	CH -357	Physical Chemistry Practical	CH – 507	Physical Chemistry Practical
9.	CH -358	Inorganic Chemistry Practical	CH – 508	Inorganic Chemistry Practical
10.	CH -359	Organic Chemistry Practical	CH – 509	Organic Chemistry Practical
11.	Non-Credit Audit Course **(Any One)**		AC-510	NSS
			AC-511	NCC
			AC-512	Sports
	Semester-VI			
1.	CH -361	Physical Chemistry	CH - 601	Principles of Physical Chemistry-II
2.	CH -362	Inorganic Chemistry	CH - 602	Novel Inorganic Solids
3.	CH -363	Organic Chemistry	CH - 603	Spectroscopic Methods of Structure Determination
4.	CH -364	Analytical Chemistry	CH - 604	Chemistry of Industrially Important Products
5.	CH -365	Industrial Chemistry	CH - 605	Analytical Technique
6.	CH -366 (C)	Polymer Chemistry	CH – 606 (A)	Polymer Chemistry
7.	CH -366 (D)	Chemistry In Every Day Life	CH – 606 (B)	Research Methodology for Chemistry
8.	CH -367	Physical Chemistry Practical	CH – 607	Physical Chemistry Practical
9.	CH -368	Inorganic Chemistry Practical	CH – 608	Inorganic Chemistry Practical
10.	CH -369	Organic Chemistry Practical	CH - 609	Organic Chemistry Practical
11.	Non-Credit Audit Course **(Any One)**		AC-610	Soft Skill
			AC-611	Yoga
			AC-612	Practicing Cleanliness

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North Maharashtra University, Jalgaon

'A' Grade
NAAC Re-Accredited
(3rd Cycle)

Choice Based Credit System (CBCS)

Syllabus For

T.Y.B.Sc.

Computer Science

(With effect from June 2020)

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
T.Y.B.Sc. (Computer Science)
(w.e.f. June-2020)
Structure

Semester – V

Discipline	Course Type	Course Code	Course Title	Credits	Hours/Week (Clock Hours)	Total Teaching hours	Marks (Total 100)	
							CA	UA
DSC	Core I	CS - 501	System Programming	3	3	45	40	60
	Core II	CS – 502	Database Management System	3	3	45	40	60
	Core III	CS – 503	Software Engineering	3	3	45	40	60
	Core IV	CS – 504	Computer Aided Graphics	3	3	45	40	60
DSC Skill Enhancement Course (SEC)	Skill Based	CS – 505	Python Programming - I	3	3	45	40	60
DSC Elective Course	Elective Course (Any One)	CS – 506 (A)	**Elective –A** Internet Programming using PHP	3	3	45	40	60
		CS – 506 (B)	**Elective –B** JAVA Programming-I					60
DSC	Core (Practical)	CS – Lab - 507	Lab on Python Programming - I	2	4 (per batch)	60	40	60
		CS – Lab 508	Lab on Computer Aided Graphics	2	4 (per batch)	60	40	60
		CS – Lab 509	**Elective –A** Lab on Internet Programming using PHP	2	4 (per batch)	60	40	60
			Elective –B Lab on JAVA Programming –I					
Non Credit Audit Course	Elective Audit Course (Any One)	AC – 501 (A)	NSS	No Credit	2	30	100	-----
		AC – 501 (B)	NCC					
		AC – 501 (C)	Sport					

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
T.Y.B.Sc. (Computer Science)
(w.e.f. June-2020)
Structure

Semester – VI

Discipline	Course Type	Course Code	Course Title	Credits	Hours/Week (Clock Hours)	Total Teaching hours	Marks (Total 100)	
							CA	UA
DSC	Core I	CS - 601	Operating System	3	3	45	40	60
	Core II	CS – 602	R -DBMS	3	3	45	40	60
	Core III	CS – 603	Computer Network	3	3	45	40	60
	Core IV	CS – 604	Theoretical Computer Science	3	3	45	40	60
DSC Skill Enhancement Course (SEC)	Skill Based	CS – 605	Python Programming - II	3	3	45	40	60
DSC Elective Course	Elective Course (Any One)	CS – 606 (A)	**Elective –A** Web Programming using ASP.NET	3	3	45	40	60
		CS – 606 (B)	**Elective –B** JAVA Programming- II					60
DSC	Core (Practical)	CS – Lab - 607	Lab on Python Programming II	2	4 (per batch)	60	40	60
		CS – Lab 608	Lab on RDBMS	2	4 (per batch)	60	40	60
		CS – Lab 609	**Elective –A** Lab on ASP.NET	2	4 (per batch)	60	40	60
			Elective –B Lab on JAVA Programming II					
Non Credit Audit Course	Elective Audit Course (Any One)	AC – 601 (A)	Soft Skill	No Credit	2	30	100	-----
		AC – 601 (B)	Yoga					
		AC – 601 (C)	Practicing Cleanliness					

Semester - V

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June -2020)
DSC (UG-CS-501) System Programming
Semester-V

Total lectures: 45
Total Marks: 90

Course Objectives:

- To understand use and development of software tools.
- To understand the design structure of Assembler and macro preprocessor
- To understand the design structure of compiler
- To understand the functions of linkers and loaders

Course Outcomes:

- Understand details about system software
- To do basic system program like development of editors lexical analyzers etc
- Students are familiar with language processing activities- functions of translators, loader and linkers

Unit-1 Introduction [L: 05, M: 10]
1.1 Types of program – System program and Application program
1.2 Difference between system programming and application programming.
1.3 Goal of system software
1.4components of system software
1.5 View of system software
Unit-2 Software Tools [L: 05, M: 10]
2.1 What is a Software Tools?
2.2 Software Tools for Program Developments
2.3 Editors
2.4 Debug Monitors
2.5 Programming Environments
Unit-3 Overview of Language Processors [L: 5, M:12]
3.1 Programming Languages and Language Processors
3.2 Language Processing Activities
3.3 Fundamentals of Language Processing
Unit-4. Assembler [L:10,M:16]
4.1 Definition.
4.2 Features of assembly language, advantages
4.3 Statement format, types of statements
4.4 Constants and Literals.
4.5 Advanced assembler directives
4.6 Design of assembler – Analysis Phase and Synthesis Phase.
4.7 Overview of assembly process
4.8 Pass Structure of Assembler – One pass, two pass assembler.
4.9 Problems of One-pass assembler
4.10 Design of Two-pass Assembler
Unit-5. Macro and Macro Preprocessor [L: 05, M: 14]
5.1 Macro Definition and Call

5.2 Macro Expansion
5.3 Nested Macro Calls
5.4 Tables used in Macro
5.5 Advanced Macro Facilities
5.6 Design of Macro Preprocessor

Unit-6. Compiler [L: 10, M:14]

6.1. What is Compiler?
6.2. Scanning and Parsing
6.2.1. Programming Language Grammars
6.2.2. Scanning
6.2.3. Parsing
6.3. Language Processors Development Tools

Unit-7. Linkers and Loaders [L: 05, M: 14]

7.1 Introduction
7.2 Relocation and Linking Concepts
7.3 Self Relocating Programs
7.4 Linking for Overlays
7.5 Dynamic Linking
7.6 Loaders

References:

1. D.M. Dhamdhere, "Systems Programming", ISBN : 9780071333115, Tata McGraw-Hill Education, 2011
2. D.M. Dhamdhere, "Systems programming and operating system". ISBN: 978-0074635797, Tata Mcgraw Hill Education Private Limited
3. John Donovan, "System programming.", ISBN: 978-0-07-46

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
DSC (UG-CS-502): Database Management System
Semester-V

Total lectures: 45
Total Marks: 90

Course Objectives

- To understand the fundamental concepts of database.
- To understand user requirements and frame it in data model.
- To understand creations, manipulation and querying of data in databases.

Course Outcomes

On completion of the course, student will be able to–

- Solve real world problems using appropriate set, function, and relational models.
- Design E-R Model for given requirements and convert the same into database tables.
- Use SQL.

Content

1. Introduction of DBMS **L 12: M 16**

1.1. Overview, Definition
1.2. Types of DBMS
1.3. Describing & storing data (Data models (relational,hierarchical, network)),
1.4. Levels of abstraction , data independence,
1.5. Queries in DBMS (SQL : DDL,DML,DCL,TCL), Users of DBMS, Advantages of DBMS

2. Conceptual Design (E-R model) **L 10 : M 16**

2.1. Overview of DB design,
2.2. ER data model (entities, attributes, entity sets, relations, relationship sets) ,
2.3. Conceptual design using ER (entities VS attributes, Entity Vs relationship, binary Vs ternary)

3. Relational data model **L 10 : M 18**

3.1. Relations (concepts, definition),
3.2. Conversion of ER to Relational model ,
3.3. Integrity constraints (key, referential integrity, general constraints)
3.4 Codd's Rules, Functional Dependency, Data Normalization (1NF, 2NF, 3NF, BCNF)

4. Relational algebra **L 08 : M 15**

4.1. Preliminaries
4.2. Relational algebra (selection, projection, set operations, renaming, joins, division)

5. Database Implementations **L-08 M:12**

5.1 Database security
5.2 Database integrity
5.3 Transaction Concept
5.4 Transaction State

5.5 Transaction Properties (ACID)

6. Concurrency control, Backup & recovery:- **L-09** **M-12**

6.1Lock-Based protocol,

6.2 Timestamp-Based protocol

6.3 Log base Recovery

6.4 Shadow Paging

6.5 Differed Updates.

Reference Books:-

1. Database System Concepts- Abraham Silberschatz, Henry F. Korth& S. Sudarshan,McGraw- Hill, 4th Edition / 5th Edition.

2. R. Elmasri, S.B. Navathe, "Fundamentals of Database Systems", Fifth Edition, Pearson Education/Addison Wesley, 2007.

3. Database System Concepts – Alexis Leon & Mathews leon, Vikas Publication House Ltd, New Delhi.

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North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
DSC (UG-CS-503)Software Engineering
Semester-V

Total lectures: 45
Total Marks: 90

Course Objective:
This paper helps to understand

- What is software and the process in development of software.
- It gives detailed knowledge about various models and requirements needed in developing software.
- It also elaborates the concepts of designing, testing & quality about software.

Course Outcomes:
After completion of the course:

- Students are able to perform the E-R Diagram, DFD, Data dictionary, Decision tree about software.
- They can also design the software in learned language using the course content.
- Get the knowledge of types of testing & how testing is performed in industry.

1. Introduction to Software Engineering **L-8 M-12**

1.1 Software and Software Engineering
1.2 Evolution of Software
1.3 Software Characteristics
1.4 Software Applications
1.5 Software Myths
1.6 Software Process
1.7 Software Development Life Cycle (SDLC)

2. Software Development Model **L-8 M-14**

2.1 Waterfall Model
2.2 Prototyping Model
2.3 Incremental Development Model
2.4 RAD model
2.5 Spiral Model

3. Requirement Analysis and Specification **L-8 M-12**

3.1 Requirements Engineering
3.2 Fact finding Techniques
3.3 Introduction to Types of Requirement Modeling
3.4 Data Modeling Concepts- Data Objects, Data Attributes & Relationship.

4. Design Engineering **L-7 M-14**

4.1 Characteristics of good Software Design
4.2 Design Concepts- Architecture, Modularity, Information Hiding
4.3 Cohesion & Coupling
4.4 Decision Table & Decision Tree
4.5 Data flow Diagram
4.6 Data Dictionary

5. Software Coding & Testing **L-7 M-12**

5.1 Coding standards & Guidelines

5.2 What is testing?
5.3 Testing Activities
5.4 Black box testing
5.5 White box testing
5.6 Introduction to Debugging Approaches – Brute force Method, Backtracking, Case Elimination Method, Programming Slicing

6. Software Quality **L-7 M-12**

6.1 What is Quality?
6.2 Software Quality - Garvin's quality dimensions, Mc Calls quality factors, ISO 9125 quality factors
6.3 Elements of Software Quality Assurance
6.4 ISO 9000 & Certification

References –

1. Roger S. Pressman , "Software Engineering a Practitioners Approach", ISBN 13: 9780071267823, 7 th edition, McGraw Hill International Edition.
2. Rajib Mall , "Fundamental of Software Engineering", ISBN- 978-81-203- 3819-7 3 RD Edition, , PHI Learning Private Limited.

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T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
DSC (UG-CS-504): Computer Aided Graphics
Semester-V

Total lectures: 45
Total Marks: 90

Course Objectives

- Understanding Graphics Concept.
- Study the various graphics techniques
- Study the various graphics algorithms

Course Outcome:

- Differentiate between interactive and non-interactive graphics.
- Study line Drawing and Circle Drawing techniques and algorithms.
- Perform 2D and 3D transformation on different images.
- Know about detail working of 2D and 3D clipping and windowing.
- Understand raster graphics and hidden surface elimination.

Unit-1: Introduction to Graphics **[L:08 M:16]**

1.1 The origin of computer graphics
1.2 Application of Computer Graphics
1.3 Definitions: Pixel, Resolution, Aspect Ratio, Interactive, Non interactive graphics, Active graphics, Passive graphics
1.4 How the interactive graphics display works.
1.5 Display types: Random Scan and Raster Scan

Unit-2: Line Drawing Technique **[L:07 M:14]**

2.1 Co-ordinate Systems
2.2 The Simple DDA
2.3 The Symmetrical DDA
2.4 Bresenham's line drawing Algorithm
2.5 Bresenham's circle drawing Algorithm

Unit-3: Two Dimensional and Three Dimensional Transformations **[L:08 M:20]**

3.1 Transformation principles
3.2 Concatenations
3.3 2D Transformations**,** 2D Matrix Representation
3.4 3D Transformations, 3D Matrix Representation
3.5 Transformation in Viewing
3.6 The Perspective Transformation

Unit-4: Clipping and Windowing **[L:09 M:16]**

4.1 Definitions: Window, View port, Clipping
4.2 Cohen-Sutherland line clipping algorithm
4.3 Mid-point Subdivision line clipping algorithm
4.4 Polygon Clipping
4.5 The Windowing Transformation
4.6 3-D Clipping

Unit-5: Raster Graphics and Solid Area Scan-Conversion **[L:07 M:12]**

5.1 Introduction
5.2 Scan Converting Line and Polygon drawing
5.3 Coherence
5.4 (YX) Algorithm
5.5 Priority: Painter's Algorithm

Unit-6: Hidden Surface Elimination **[L:06 M:12]**

6.1 Object Space and Image Space Algorithms
6.2 The Depth Buffer Algorithm
6.3 Warnock's Algorithm

Reference:

1. William M. Newman and Robert F. Sproull, "Principles of Interactive Computer Graphics", ISBN : 9780074632932 (Second Edition), Tata-McGraw Hill Publication
2. Rogers," Procedural Interactive Computer Graphics", ISBN- 978-070486775, McGraw Hill Book Company Ltd.
3. Mathematical Elements of Interactive C.

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T. Y. B. Sc. (Computer Science)
(w.e.f. June -2020)
DSC SEC(UG-CS-505)Python Programming – I
Semester-V

Total lectures: 45
Total Marks: 90

Course Objectives:

- The course is designed to provide Basic knowledge of Python.
- Python programming is intended for software engineers, system analysts, program managers and user support personnel who wish to learn the Python programming language.
- To learn how to design and program Python applications.
- To develop problem solving skills and their implementation through Python.
- Master the fundamentals of writing Python scripts

Course Outcome: **At the end of the course, the student will be able to**

- Explain basic principles of Python programming language
- Construct and apply various filters for a specific task.
- Apply the best features of mathematics, engineering and natural sciences to program real life problems.

Unit – 1 Introduction to Python Programming L: 5 M:10

- **Introduction to Python**
- History of Python
- Version of Python
- Need, Featuresof Python
- Applications of Python
- Installing Python on Linux and Windows
- Installing Python IDE

Unit – 2Basics of Python Programming L:10 M: 20

- Python Identifiers, Variables and Keywords
- Putting Comments
- Expressions and Statements
- Standard Data Types – Basic, None, Boolean, Numbers.
- Type Conversion Function
- Operators in Python
- Operator Precedence
- Accepting Input and Displaying Output

Flow Control Statements

- Conditional Statements
- Looping Statements
- break, continue, pass Statements

Unit – 3Python Strings L: 10 M: 20

- Introduction to String
- String Literals
- Assign String to a Variable
- Multiline Strings
- Operations on Strings, Index Operator: Working with the Characters of a String, String Methods, Length, The Slice Operator, String Comparison,
- **Concepts of Python Lists:** Creating, Initializing and Accessing elements in lists, Traversing, Updating and deleting elements from Lists.
- List Operations: Concatenation, List Indexing, Slices
- Built- in List functions and methods
- Aliasing, Cloning Lists

Unit – 4Python Tuples and Dictionary L: 10 M: 20

Introduction to Tuples

- Creating Tuples.
- Deleting Tuples.
- Accessing elements in a Tuple.
- Tuples Operations: Concatenation, Repetition, Membership, Iteration.
- Built- in Tuples functions and methods

Introduction to Dictionary

- Dictionaries: Concept of key-value pair.
- Creating, Initializing and Accessing elements in a Dictionary.
- Traversing, Updating and Deleting elements in a Dictionary
- Built- in Dictionary functions and methods

Unit – 5Python Functions and ModulesL: 10 M: 20

Introduction to Functions

- Defining a Function (def)
- Calling a Function
- Function Arguments - Required arguments, Keyword arguments, Default arguments, Variable-length arguments
- Scope of Variables
- Void functions and function returning values
- Recursion
- Advance Function Topics: Anonymous Function Lambda, Mapping Functions, Functional Programming Tools: filter and reduce

Introduction to Modules

- Creating Modules and Packages
- Importing Modules
- Using the dir() Function
- Built-in Modules

References:

1. John V Guttag (2013), Introduction to Computation and Programming Using Python, Prentice Hall of India, 2013, ISBN: 9780262525008
2. Peter C. Norton, Alex Samuel and others, ―Beginning Python‖, Wrox Publication,2005 ISBN 10: 0764596543 ISBN 13: 9780764596544
3. R. NageswaraRao(2016), Core Python Programming, Dreamtech Press, 2016, ISBN-13: 9789351199427
4. Wesley J. Chun(2006), Core Python Programming - Second Edition, Prentice Hall, ISBN-13: 978-0132269933, ISBN-10: 0132269937
5. Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser(2013), Data Structures and Algorithms in Pyhon", Wiley, 2013, ISBN : 978-1-118-54958-2, ISBN : 978-1-118-29027-9(HardCover)
6. Kenneth A. Lambert(2011), Fundamentals of Python – First Programs, CENGAGE Publication, 2011, ISBN 1111822700, ISBN 9781111822705
7. Luke Sneeringer(2015), Professional Python, Wiley Inc.,2015, ISBN: 1119070856

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North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
DSC (UG-CS-506 A):Elective A - Internet Programming using PHP
Semester-V

Total lectures:45
Total Marks: 90

Objectives:

- To understand Core-PHP concepts, Server Side Scripting Language
- To acquaint knowledge of Database handling in PHP.

Outcomes:

- To Design dynamic and interactive Web pages.
- PHP framework for effective design of web applications.

Unit–1 The BasicsofPHP L:12M:24

- Introduction toPHP
- Working of PHP
- Structure ofPHP
  - Structure & Syntax of PHP
  - PHP withHTML
  - Comments
  - Data Types andVariables
  - Operators
- Flow ControlStatements
  - ConditionalStatements
  - Looping Statements
  - Exit, Return, Die, Include and RequireStatements

Unit – 2 Arrays, FunctionandString L:10 M:20

- Introduction toArray
  - Types ofArray: Index, Associative, MultidimensionalArray
  - Different array function inPHP
  - Traversing arrays, Sorting arrays
- Introduction toFunction
  - Defining and Calling afunction
  - Scope of variables infunction
  - Function Parameters
  - Returning Values from afunction

- RecursiveFunctions
- String functions inPHP
  - Printing functions
  - Comparing strings
  - Manipulating and Searchingstrings
- RegularExpressions

Unit – 3Object-OrientedPHP **L:10 M:18**

- Introduction and Benefits ofOOPs in PHP
- Creating aClass in PHP
- Creating anObject in PHP
  - Adding aMethods
  - Adding aProperties
  - Visibility (Public, Private andProtected)
- Constructor andDestructors
- Inheritance (Extending aclass)
- Abstract classes, Finalclasses
- Interfaces
- Exception handling
- Serialization

Unit – 4WebTechniques **L:07 M:14**

- Introduction
- HTTPBasics
- ProcessingForms
  - Methods (Get and PostMethod)
  - Parameters ($_GET and$_POST)
  - Self-ProcessingPages
  - FileUploads
- Maintaining State
  - Cookies
  - Sessions
  - Combining Cookies andSessions

Unit – 5 PHPwithMySQL **L:06 M:14**

- Introduction toMySQL
- Interaction between PHP and MySQL
- Error Checking
- Execute DDLStatements
- Execute DMLStatements

References Books:

1. Ivan Bayross and Sharnam Shah , "PHP 5.1 for Beginners", ISBN: 9788184040753 SPD Publication 2007
2. Dave W. Mercer, Allan Kent, "Beginning PHP 5" ,ISBN: 978-0-7645-5783-5,Wrox publication , July2004.
3. W. Jason Gilmore , "Beginning PHP and MySQL",ISBN: 978-1-4302-3115-8, 3rd edition, Apress Publication.

4. RasmusLerdorfandKevin Tatroe, “ProgrammingPHP” ,ISBN: 978-1-56592-610-3, O'Reillypublication,2002.
5. Mastering PHP , BPB Publication.
6. PHP cookbook, O'Reilly publication.

Websites:

7. http://www.php.net.in/
8.http://www.w3schools.com
9.http://www.tutorialpoints.com

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T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
Elective B
DSC (UG-CS-506B): JAVA Programming I
Semester-V

Total lectures: 45
Total Marks: 90

Course Objectives:

- To learn Object Oriented Design with JAVA
- Ability to write computer program to solve specific program
- To handle abnormal termination of a program using exception handling

Course Outcomes:

- Get knowledge of JDK environment
- Explore polymorphism using method overloading and method overriding
- Understand the different aspects of hierarchy of classes and their extensibility
- Understands the concept of streams and files
- Write programs for handling run time errors using exceptions

Unit-1 Introduction toJAVA [L-04M-08]

1.1 History ofJava

1.2 Comparison of Java and C++
1.3 Features - Simple, Object Oriented Distributed, Robust, Secure, Architecture neutral, Portable, Interpreted, High Performance, Multithreading,dynamic.
1.4 Java andInternet
1.5 JDK Environment (Java, Javac, Applet Viewer,Javadoc)

Unit-2 Basics of JAVA [L-04M-10]

2.1 Variables, Data Types, Casting, Operators
2.2 Compiling and running java program,
2.3 Command linearguments.
2.4 Accepting input from console (Using BufferedReaderclass,Scanner)
2.5Arrays

]Unit-3 Objects andClasses [L-08M-14]

3.1 Introduction – Classes andObjects
3.2 Data members,methods
3.3 Types of Constructors
3.4 Overloading
3.5 Packages
3.6 Accessmodifier
3.7 Innerclasses

Unit-4 FunctionsinJAVA [L-07M-16]

4.1 String functions - Concatenation, Substring, String editing, Testing forEquality,
4.2 Character extraction functions – CharAt, getChars, getByte
4.3 Formattingfunctions

4.4 Date and Time functions using Gregorian CalendarClass.

Unit-5Inheritance **[L-10 M-20]**

5.1 Inheritance- Inheritance Hierarchy, Super class, Overriding,Polymorphism
5.2 Use of final keyword related to method and class
5.3 Interfaces
5.4 Wrapperclasses
5.5 Reflection - 'Class'class
5.6 Use of abstract class and abstract methods

Unit-6Exception Handling **[L-06M-10]**

6.1 Dealing with errors - Types ofexceptions
6.2 Exception Handling Mechanism
6.3 Catching Exceptions.
6.4 Creating user defined exception

Unit-7 Streamsa n d Files [**L-06M-12]**

7.1 String class and StringBuffer Class
7.2 Using the File class
7.3 Stream classes-Byte Stream classes , Character Stream Classes
7.4 Creation of files
7.5 Reading/Writing characters and bytes
7.6 Handling primitive data types
7.7 Random Access files

References:

1. Cay's Horstmann and Gary Cornell, " Core Java Volume -1 Fundamentals", ISBN: 81-7808-277-2
2. E. Balaguruswamy ,"Programming with Java – A primer", ISBN: 978-0-07-061713-1
3. Herbert Schildt, "The complete reference JAVA-2", ISBN:978-0-07-049543-2, Fifth Edition, (TMH)
4. Java 6 Programming Black Book

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(w.e.f. June-2020)
DSC UG-CS-507 LAB on Python Programming – I

Instruction:

- **At the time of Practical you can used any Python IDEs and Code Editors (PyCharm, Spyder, Thonny, etc.).**

1. Installing python and setting up environment. Simple statements like printing the names (“Hello World”), numbers, mathematical calculations, etc.
2. Write a program to find all prime numbers within a given range.
3. Write a program to print "n" terms of Fibonacci Series using Iteration
4. Write a program to demonstrate the use of slicing in string.
5. Programs related to string manipulation
6. Write a Programs related to functions & modules
7. Write a program that demonstrate concept of functional programming.
8. Write a program to demonstrate the use of list & related functions
9. Write a program to demonstrate the use of Dictionary& related functions
10. Write a program to demonstrate the use of tuple.

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DSC UG-CS-508: LAB on Computer Aided Graphics
Semester-V

Course Objectives

- To know how to implement Graphics Programs.
- To implement various graphics techniques
- To implement various graphics algorithms

Course Outcome:

- Understanding Graphics Concept Practically
- Hands on of using standard graphics library
- Hands on of implementation of DDA, Bresenham's Line,Circle Drawing Algorithm
- Hands on of implementation of 2D Transformation: Translation, Scaling and Rotation
- Hands on of implementation ofCohen-Sutherland line clipping algorithm

1. Draw the following pattern using standard graphics library:
   a. Block Diagram of Computer
   b. Display Flag of India
   c. Flow Chart Symbols, DFD Symbols, ER-Diagram Symbols
2. Implement Bresenham's Line Drawing Algorithm
3. Implement Bresenham's Circle Drawing Algorithm
4. Implement DDA line Drawing Algorithm
5. Implementing Translation transformation on polygon
6. Implementing Scaling transformation on polygons
7. Implementing Rotation transformation on polygons
8. Implement Cohen-Sutherland line clipping algorit

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T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
Elective A
DSC (UG-CS-509 A): Internet programming using PHP
Semester-V

1. Design web pages using HTML that will contain online admissionforms.
2. Write PHP scripts that demonstrate fundamentalsPHP.
3. Write PHP script that will display grade based on criteria given below using the marks obtained in T.Y.Bsc.Examination.
    a. Distinction (70 andabove)
    b. First Class (60 -69)
    c. Pass (40 - 59)
    d. Fail (below 40)
4. Write a PHP script to demonstrate different Stringfunctions.
5. Write a PHP script to demonstratearray.
6. Write a PHP script to use Functions (Call by Value, Call byreference).
7. Write a PHP script to Demonstrate OOPS Concept inPHP.
8. Write a PHP script to demonstrate ExceptionHandling.
9. Write a PHP script to demonstrate Form Data Handling using Get andPost methods.
10. Design a database in MYSQL using PHP. Create table in database. Store, Update, Delete and Retrieve data from the table. Display the data from the table.
11. Write a PHP script to store, retrieve and delete cookies on your localmachine.
12. Write a PHP script to store, retrieve and delete data using sessionvariables.

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T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
Elective B
DSC (UG-CS-509B): Lab on JAVA Programming I
Semester-V

Course Objectives:

- To learn Object Oriented Design with JAVA
- Ability to write computer program to solve specific program
- To handle abnormal termination of a program using exception handling

Course Outcomes:

- Get knowledge of JDK environment
- Explore polymorphism using method overloading and method overriding
- Understand the different aspects of hierarchy of classes and their extensibility
- Understands the concept of streams and files
- Write programs for handling run time errors using exceptions

1. Write a simple program in Java to print first fifty primenumber.
2. Write a program in Java to print factorial of given number using recursion
3. Write a program in Java to print Fibonacci seriesin given series
4. Write a program in Java to demonstrate command line arguments.
5. Write a program in Java to create student information using array
6. Write a program in Java to implement user defined package.
7. Write a program in Java to implement default & parameterized constructor.
8. Write a program in Java to demonstrate various operations on string functions.
9. Write a program in Java to demonstrate wrapper classes
10. Write a program in Java to demonstrate class.
11. Write a program in Java to implement inheritance.
12. Write a program inJava to demonstrate inner class.
13. Write a program in Java to demonstrate reflection.
14. WriteaprograminJavatodemonstrateexceptionhandling.
15. Write a program in Java to demonstrate text stream object that take input from user & write it into text file.

Semester –VI

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T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
DSC (UG-CS-601):Operating System
Semester-VI

Total lectures: 45
Total Marks: 90

Objectives:

- To understand Operating system concepts and services.
- To understand the concept of a CPU scheduling, memory management, Disk Drum Scheduling and deadlock.

Outcomes:

- Students should familiar with Operating System Services.
- Understand CPU scheduling algorithms, memory Management Techniques, Disk Drum Scheduling algorithms, Deadlock preventions and avoidance.
- Introduction to android operating systems – its architecture, applications and uses.

Unit 1.Introduction L:04M:08
1.1 What is an operating system?
1.2 Types of Operating System
1.3 Services of Operating System
1.4 Functions of operating system.
Unit 2.CPU scheduling L:10M:16
2.1 Multiprogramming Concepts
2.2 Basic Concept of CPU scheduling: CPU-I/O burst cycle, CPU scheduler, Preemptive scheduling, Dispatcher
2.3Performance criteria's
2.3 Scheduling Algorithms:FCFS, SJF, Priority scheduling, Round-robin scheduling
2.4 Multilevel queues, multilevel feedback queue
Unit 3.Memory Management L: 10M: 20
3.1 Logical versus Physical Address space
3.2 Swapping
3.3 Multiple partition allocation MFT , MVT
3.4 Paging
3.5 Segmentation
3.6Virtual Memory Management – Background, Demand paging
Unit 4. Disk and Drum Scheduling L:06M:18
4.1 First Come first serve scheduling
4.2 Shortest Seek Time First Scheduling
4.3 SCAN Scheduling
4.4 C-SCAN Scheduling
Unit 5 Deadlocks L:10M:18
5.1 Concept of Deadlock
5.2 Deadlock Characterization
5.3 Deadlock Prevention
5.4 Deadlock Avoidance
5.5 Deadlock Detection
5.6 Recovery from Deadlock
Unit 6 Overview of Android Operating system L:05 M:10
6.1 What is android operating system.

6.2 Android Architecture
6.3 Features of Android operating system
6.4 Applications of android operating system
6.5 What is Google play store

Reference books:

1. Peterson Silberschatz, “Operating system concepts”, ISBN: 0-201-35251-6, Addison Wesley, 1ST Edition
2. Andrew S. Tanenbaum, “Modem operating system”, ISBN: 81-203-0974-X, P .H.I. New Delhi 3.
3. Achyut S. Godbole, “Operating Systems” ISBN: 9780070702035, McGraw Hill Education, 2010, Third Edition
4. .Marko Garaenta, “Learning Android ,Oreilly “, ISBN: 978-1449319236, O′ Reilly, second edition
5 Mike Wolfson, “Android developers tools ,Essential,Oreilly” ISBN:978-1

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
DSC (UG-CS-602):Relational Database Management Systems
Semester-VI

Total lectures: 45
Total Marks: 90

Prerequisites

- Basic Knowledge of DBMS
- Knowledge of SQL Queries
- Basics of relational design
- Basics of ER model

Course Objectives

- To teach fundamental concepts of RDBMS (PL/PgSQL)
- To teach database management operations
- Be familiar with the basic issues of transaction processing and concurrency control
- To teach data security and its importance

Course Outcomes

On completion of the course, student will be able to–

- Design E-R Model for given requirements and convert the same into database tables.
- Use database techniques such as SQL & PL/SQL.
- Explain transaction Management in relational database System.
- Use advanced database Programming concepts

Unit 1 INTRODUCTION TO RDBMS [L : 5 M: 10]

- Introduction to RDBMS,
- Introduction to Open Source software PostgreSQL,
- Installation of open source software PostgreSQL on Windows and Linux,
- Data types of PostgreSQL

Unit 2 DATABASE AND TABLE OPERATIONS [L : 05 M: 10]

- Database Operations - 1.Creating a Database 2.Dropping the Database
- Table Operations – 1. Create 2. Alter3. Drop

Unit 3 SQL – STATEMENTS, OPERATORS, FUNCTIONS [L : 10 M: 20]

- Statements - SELECT, INSERT, UPDATE, DELETE
- Null value and Default value
- Operators - Arithmetic, Logical, Comparison, Bitwise, Relational
- Functions - Aggregate functions, Date and Time functions, String functions

- Clauses:- where, order by, AND, OR, Between, Like, CASE, Distinct, Group by, Having

Unit 4 VIEW, JOIN and DATA CONSTRANTS in SQL [L : 10 M: 20]

- **Constraints -** Data Integrity, Entity Integrity
- Keys - PRIMARY KEY, UNIQUE, FOREIGN KEY, CHECK, Not Null
- **Views -** Create, Alter, Drop
- **Join -** Joins, Cross Join, Inner Join, Outer Join, Self-Join
- **Subquries** -Subqueries as Constants, Subqueries as Correlated Values, Subqueries as Lists of Values, NOT IN and Subqueries with NULL Values, Subqueries Returning Multiple Columns
- **Statement -** MERGE Statement
- **Set operations**-UNION, EXCEPT, and INTERSECT
- **Clauses** -ANY, ALL, and EXISTS Clauses

Unit 5 TRANSACTION COMMANDS , INDEX AND SEQUENCE[L : 5 M: 10]

- **Transaction commands**-Commit, Rollback
- **Indexing -**Creating an Index**,** Unique Indexes
- **Sequences**- Creating Sequence, using nextval(), currval() and setval()

Unit 6PL/PGSQL - SQL PROCEDURAL LANGUAGE[L : 15 M: 20]

- **Introduction to** PL/PGSQL-Advantages of PL/PGSQL, structure of PL/PGSQL, basic Statements and control structures
- **Function -**Creating functions, Removing functions
- **Cursors**-Creation of Cursors, Using Cursors, Looping
  Triggers-Introduction, Triggers Vs constraints, DML Triggers, DDL Triggers
- **Error handling** -Introduction Error Handling, RAISE Statement

REFERENCE BOOKS:

- Bruce Momjian , PostgreSQL Introduction and Concepts, Addison.Wesley, ISBN 0-201-70331-9
- NEIL MATTHEW AND RICHARD STONES **, Beginning Databases with PostgreSQL, From Novice to Professional, Second Edition,** ISBN (pbk): 1-59059-478-9

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T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
DSC (UG-CS-603):Computer Network
Semester-VI

Total lectures: 45
Total Marks: 90

Course Objective:
This paper helps to understand

- How network works? & types of networks & its applications.
- It helps to understand the various models.
- It helps to understand various layers & their functionality.
- It get the idea of how cryptography works.

Course Outcomes:
After completion of the course:

- Students understand the information exchange done across the network with the help of OSI & TCP/IP models.
- Student understands how errors are captured & handled in network.
- Student understands various attack & its prevention techniques.

Unit-1 Introduction to Computer Network and Network Model **L-8 M- 12**

1.1 What is Computer Network?
1.2 Application of Computer Networks
1.3 Transmission Mode, Network Structure
1.4 Network Topologies
1.5 ISO OSI Reference Models, TCP / IP Reference Model & their Comparison.

Unit-2 Physical Layer **L-8 M- 15**

2.1 Guided Media:
- 2.1.1 Twisted Pair
- 2.1.2 Coaxial Cable
- 2.1.3 Fiber Optics
- 2.14 Satellite Communication
- 2.15 Microwave Communication
- 2.1.6 Submarine Cables.

2.2 Unguided Media
- .2.1. Electromagnetic Spectrum
- 2.2.2. Radio Transmission
- .2.3. Microwave Transmission
- 2.2.4. Infrared & Millimeter Waves
- 2.2.5. Light wave Transmission

Unit 3 The Data link Layer **L-8 M- 15**

3.1 Services Provided to Network Layer
3.2 Framing, Error Control , Flow Control
3.3 Error Detection – Redundancy, Parity Check, Checksum & CRC

3.4 Error Correction – Hamming Code.

Unit 4 The Network Layer **L-7 M- 18**

4.1 Logical Addressing

4.1.1 IP v4 Addresses - Address Space - Classful Addressing - Classless Addressing

4.2. Routing Algorithm

4.2.1. Shortest Path

4.2.2. Multicast Routing

4.3. Congestion Control

4.3.1. Introduction to Congestion Control

4.3.2. Deadlocks

Unit-5 Transport Layer **L-7 M- 15**

5.1 Process to Process Delivery

5.1.1 Client-Server Paradigm

5.1.2 Multiplexing and Demultiplexing

5.1.3 Connectionless v/s Connection Oriented Services

5.1.4 Reliable v/s Unreliable Transmission

5.2 UDP and TCP

5.2.1 UDP – Operations and uses

5.2.2 TCP – Services and features

Unit-6 Cryptography and Public key Infrastructure **L-7 M-15**

6.1 Introduction:

6.1.1 Cryptography, Cryptanalysis, Cryptology, Substitution

6.1.2 Techniques: Caesar's cipher, Monoalphabetic and Polyalphabetic,

6.1.3 Transposition techniques – Rail fence technique, Simple Columnar

6.2 Public key infrastructures:

6.2.1 basics, digital certificates, certificate authorities, registration authorities, Digital Signature.

Reference Books: -

1. Andrew S.Tanenbaum , "Computer Networks " ISBN: 978-0130661029, Prentice Hall, Fourth Edition .
2. Behrouz A. Forouzan , "Data Communication & Networking", ISBN: 978- 0071232418 , McGraw Hill Higher Education , Third Edition 3.
3. U.D. Black , "Data Communication & Distributed Networks", ISBN: 9780835913416, Published by
   Prentice-Hall, Englewood Cliffs, N.J., 1987 , Second Edition ,
4. AtulKahate , " Cryptography and Network Security " Edition 3, McGraw Hill.

KBC North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June 2020)
Theoretical Computer Science (UG-CS-604)
Semester-VI

Total lectures: 45
Total Marks: 90

Course Outcome

1) Understanding the use of Sets, Relations and Graphs.
2) Understand Languages in TCS.
3) Introduction of Regular Languages and Expressions.
4) Understanding Pumping Lemma and its applications.
5) Explore the knowledge of Pushdown Automata.
6) Understanding Normal Forms with Examples.
7) Understanding Turing Machine.

Unit-1. Mathematical Preliminaries **[L-04 M-12]**

1.1 Symbol, Alphabet, String, Formal Language, Operation on languages
1.2 Sets, Relations
    1.2.1 Sets and Subsets
    1.2.2 Relations
    1.2.3 Closure of Relations
1.3 Graphs & Trees
    1.3.1 Graphs
    1.3.2 Trees
1.4 Principal of Induction
    1.4.1 Method of Proof by Induction

Unit-2. Finite Automata **[L-14 M-20]**

2.1 Definition of Automata
2.2 Why study Automata Theory?
    2.2.1 Introduction to finite Automata
    2.2.2 Structural representations
    2.2.3 Automata and Complexity
2.3 Descriptions of Finite Automata, Transition Systems, Transition Functions
2.4 Deterministic Finite Automata (DFA)
2.5 Nondeterministic Finite Automata (NFA)
2.6 The Equivalence of DFA and NFA
2.7 Minimization of DFA
2.8 Finite Automata with ε-Moves
2.9 Melay and Moore Machines: Definition and Examples
2.10 Applications of Finite Automata

Unit-3. Regular Expressions & Regular Sets **[L-08 M-16]**

3.1 Regular Expressions
3.2 FA & Regular Expressions
    3.2.1 Convert Regular Expression to FA
    3.2.2 Construct FA from Regular Expression
    3.3 Pumping Lemma for Regular Sets and applications

Unit-4. Context Free Grammars **[L-10 M-18]**

4.1 Introduction to Context Free Grammars
4.2 Derivation Trees
4.2.1 Ambiguity in CFG
4.3 Simplification of Context Free Grammars
    4.3.1 Useless Symbols
    4.3.2 Null Production
    4.3.3 Unit Production
4.4 Normal forms for CFG
    4.4.1 Chomsky Normal Form (CNF)
    4.4.2 Greibach Normal Form (GNF)

Unit-5 Pushdown Automata **[L-04 M-12]**

5.1 Basic Definitions
5.2 Types of PDA
5.3 Acceptance by Pushdown Automata
5.4 PDA and Context Free Language

Unit-6 Turing Machine **[L-05 M-12]**

6.1 Introduction
6.2 Turing Machine Model
6.3 Representation of Turing Machine
6.4 Design of Turing Machine

References:

1. John E. Hopcraft,RajeevMotwani, Jeffery D. Ullman, "Introduction to Automata Theory, Languages & Computations", ISBN: 978-0321455369 , Pearson publication, Third edition
2. K. L. P. Mishra, N. Chandrasekaran, "Theory of Computer Science", ISBN: 9788120329683, Published by Prentice-Hall of India Pvt.Ltd , Third edition.
3. Daniel A. Cohen, "Introduction to Computer Theory",ISBN: 978-0471137726, John Wiley & Sons; 2nd Revised edition edition.
4. SmitaRajpal, "Theory of Automata and Formal Languages", GalgotiaPublications,ISBN: 1234027054
5. http://nptel.ac.in/

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T. Y. B. Sc. (Computer Science)
(w.e.f. June -2020)
DSC (UG-CS-605) Python Programming – II
Semester-VI

Total lectures: 45
Total Marks: 90

Course Objectives:

- The course is designed to provide advance knowledge of Python.
- Python programming is intended for software engineers, system analysts, program managers and user support personnel who wish to learn the Python programming language.
- To learn how to design and program Python applications.
- To develop problem solving skills and their implementation through Python.
- Master the fundamentals of writing Python scripts
- To develop the ability to write database applications in Python

Course Outcome: **At the end of the course, the student will be able to**

- Explain basic principles of Python programming language
- Implement object oriented concepts, database applications.
- Construct regular expressions for pattern matching and apply them to various filters for a specific task.
- Design and implement Database Application and Content providers.
- Apply the best features of mathematics, engineering and natural sciences to program real life problems.

Unit – 1Object Oriented Concepts in Python L:05 M: 10

- Overview of OOP Terminology
- Creating Classes
- Creating Instance Objects
- Accessing Attributes
- Built-In Class Attributes
- Garbage Collection: Constructor
- Overloading Methods and Operator
- Inheritance - Implementing a subclass, Overriding Methods

Unit – 2Python Exception Handling and Regular Expression L: 10 M: 20

- Introduction
- Syntax Error
- Handling Exception
- Multiple Except Clauses
- try…finally
- Raising Exception
- User Defined Exception

- List of Standard Exception
- Regular Expression

Unit – 3File Handling in Python L: 10 M: 20

- File Objects,
- Writing Text Files,
- Appending Text to a File,
- Reading Text Files,
- File Exceptions,
- Paths and Directories,
- Exceptions in os, Paths,
- Directory Contents,
- Obtaining Information about Files, Renaming, Moving, Copying, and Removing Files,
- Creating and Removing Directories, Globbing

Unit – 4GUI with Python L: 10 M: 20

- GUI Programming Toolkits for Python,
- Tkinter Introduction,
- Creating GUI Widgets with Tkinter,
- Resizing the Widget,
- Configuring Widget Options,
- Putting the Widgets to Work,
- Creating Layouts, Packing Order,
- Controlling Widget Appearances, Radio Buttons and Checkboxes, Dialog Boxes, Other Widget Types

Unit – 5Python with MySQL L: 10 M: 20

- Introduction to MySQL
- Installing MySQL Driver - MySQL Connector or MySQLdb
- MySQL Database connection with Python
- Creating Database in MySQL using Python
- Create a Table in MySQL with Python
- Insert, Select, Update and Delete Operation in MySQL with Python
- COMMIT Operation
- ROLLBACK Operation
- Disconnecting Database

References:

1. John V Guttag (2013), Introduction to Computation and Programming Using Python, Prentice Hall of India, 2013, ISBN: 9780262525008
2. Peter C. Norton, Alex Samuel and others, ―Beginning Python‖, Wrox Publication,2005 ISBN 10: 0764596543 ISBN 13: 9780764596544
3. R. NageswaraRao(2016), Core Python Programming, Dreamtech Press, 2016, ISBN-13: 9789351199427
4. Wesley J. Chun(2006), Core Python Programming - Second Edition, Prentice Hall, ISBN-13: 978-0132269933, ISBN-10: 0132269937
5. Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser(2013), Data Structures and Algorithms in Pyhon", Wiley, 2013, ISBN : 978-1-118-54958-2, ISBN : 978-1-118-29027-9(HardCover)
6. Kenneth A. Lambert(2011), Fundamentals of Python – First Programs, CENGAGE Publication, 2011, ISBN 1111822700, ISBN 9781111822705
7. Luke Sneeringer(2015), Professional Python, Wiley Inc.,2015, ISBN: 1119070856

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T. Y. B. Sc. (Computer Science)

(w.e.f. June-2020)

DSC (UG-CS-606 A):

Elective A - Web Programming using ASP.NET

Semester-VI

Total lectures:45

Total Marks: 90

Objectives:

- To describe the .Net Framework, its components and features. ·
- To introduce the ASP.NET. ·
- To demonstrate the use of various controls to design a web application. ·
- To demonstrate the use of ADO.NET.

Outcomes:

- Upon completion of this course the students should be able to understand the .NET framework ·
- Develop a proficiency in the ASP.NET ·
- Develop ASP.NET web applications on any given scenario.

Unit1.Introduction L-08, 20Marks

- Introduction toAsp.Net
- Structure of Asp.NetPage
- ASP.Net CompilationModel
- Code BehindModel
- Execution Stages and Event Model for the PageClass

Unit 2.ASP.NETControls L-08, 20Marks

- Introducing WebForms
- HTMLControls
- WebControls
- BasicControls
- UserControls
- ASP.Net RichControls
- Validation Controls
- ASP.Net Page Directives

Unit 3. ASP.NetIntrinsicObjects L-15, 20Marks

- HTTP RequestObject, HTTP ResponseObject

- HTTP Server UtilityObject
- HTTP Application StateObject
- HTTP Session stateObject
- Object Contextobject

Unit 4. Data AccesswithADO.Net **L-14, 30Marks**

- ASP.Net Data ListControls
- Working With ADO.Net
- Using BasicSQL
- Working With ASP.NetObject
- Data ReaderObject
- Data TableObject
- Data RowObject
- Data Column Object
- Data RelationObject.

Books References: -

1. Kogent Learning Solutions, ".NET 4.0 Programming 6 in 1 Black BooK", ISBN: 9789350045107, by DreamtechPress,2013.
2. Crouch, Matt J, "Asp.Net and Vb.Net Web Programming"ISBN: 9780201734409, Addison-Wesley,2002.
3. J.Liberty,D.Hurwitz , Programming ASP.Net, ISBN: 978-0596529567, O'Reilly Media ,4TH Edition.

WEB References:-1. http://www.tutorialspoint.com

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North Maharashtra University, Jalgaon

T. Y. B. Sc. (Computer Science)

(w.e.f. June-2020)

Elective B

DSC (UG-CS-606B): JAVA Programming II

Semester-VI

Total lectures: 45

Total Marks: 90

Course Objectives:

- **To design User Interface using Swing and AWT**
- **Learn the advanced concept of java**
- **To aware about the applet programming**

Course Outcomes:

- Program using graphical user interface with Swing classes
- Handle different kinds of events generated while handling GUI components
- Create programs using menus and dialog boxes
- Program to create applets
- Understand advanced java concepts like JDBC, Java Beans

Unit-1GRAPHICSProgramming [L-08 M-14]

1.1 Introduction- frames, framelayouts
1.2 Displaying information in a frame, Graphics objects and paint componentmethod
1.3 Text andFonts, Colors
1.4 Drawing Shapes, FillingShapes
1.5 Paint mode andImages.

Unit-2 EventHandling [L-10M-18]

2.1 EventHandling Mechanism
2.2 Concept: AWT, Swing, Difference between AWT and Swing.
2.2 The AWT eventhierarchy
2.3 Event handling summary- event sources and listener, adapterclasses.
2.4 Low level events - Focus, window, keyboard, mouseevents.
2.5 Multicasting

Unit-3 User Interface ComponentsUsingSWING [L-10M-18]

3.1 Introduction to layout management - Panels, Border Layout, GridLayout,
3.2 Text Input- Text Field, Text Area, Passwordfield
3.3 Labels andButtons
3.4 Making choices - Check boxes, Radio buttons, List, Comboboxes

Unit-4 Menu andDialogBox [L-08M-14]

4.1 Menus - Buildingmenus
4.2 Menuevents,
4.3 Popupmenu,
4.5 Keyboard mnemonics and Accelerators, enabling and disablingmenus
4.6 Dialog boxes - opening dialogs using inbuilt dialogbox

Unit-5APPLETS [L-05 M-13]

5.1 Introduction to applet
5.2 Converting application to applets
5.3 Life cycle ofapplet
5.4 Applet tag, Param Tag

Unit-6 Introduction ToAdvancedJAVA **[L-04 M-13]**

6.1 Collections

6.2 Interfaces- List,Set

6.3 Classes- Array List,Vector

6.4 Database connectivity -JDBC

6.5 Introduction to JavaBeans- Servlets, Java Server Pages(JSP)

References:

1. Cay's Horstmann and Gary Cornell ,"CoreJavaVolume 2", ISBN: 978-0-13- 708160-8, 9TH edition, published by PrenticeHall
2. E. Balaguruswamy ,"Programming with Java – A primer", ISBN:978-0-07-061713-1
3. Herbert Schildt, "The complete reference JAVA-2", ISBN: 978-0-07-049543-2, Fifth Edition,(TMH)
4. Java Programming BlackBook.
5. Buyya, Selvi, Chu, , "Object Oriented Programming with Java", ISBN: 978- 0070678835, Tata McGraw Hill Education2010

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
DSC UG-CS-LAB-607 LAB on Python Programming – II
Semester-VI

Instruction:

- **At the time of Practical you can used any Python IDEs and Code Editors (PyCharm, Spyder, Thonny, etc.).**

1. Write a program to demonstrate Exception Handling mechanism
2. Write a program to demonstrate Regular expression in python.
3. Write a program to demonstrate the working of classes and objects.
4. Write a program to demonstrate the working of Inheritance and Overloading Methods and Operator.
5. Write a program to demonstrate read & write file.
6. Write a program to demonstrate to Renaming, Moving, Copying, and Removing Files,
7. Write a program to demonstrate to learn GUI programming using Tkinter.
8. Write a program to create a database application for insert, update and delete in a table using MySQL.

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DSC (UG-CS-Lab 608): Lab on RDBMS
Semester-VI

Course Objectives

- To perform operations on relational database management systems.
- Understand basic database management operations.
- Design E-R Model for given requirements and convert the same into database tables.

Course Outcomes:-

On completion of this course, students will be able to :

- To use SQL & PL/SQL.
- To perform advanced database operations.
- Create database tables in postgreSQL.
- Write and execute simple, nested queries

Use of PostgreSQL 11

1. To create one or more tables with following constraints, in addition to the first twoconstraints (PK & FK)
   a. Check constraint
   b. Unique constraint
   c. Not null constraint
2. To drop a table, alter schema of a table, insert / update / delete records using tablescreated in previous Assignments. (use simple forms of insert / update / deletestatements)
3. To query the tables using simple form of select statement Select <field-list> from table [where <condition> order by <field list>] Select <field-list, aggregate functions > from table [where <condition> group by <> having <> order by <>]
4. To query table, using set operations (union, intersect)
5. To query tables using nested queries (use of 'Except', exists, not exists, all clauses
6. To create views
7. To create Stored Procedure
   - A Simple Stored Procedure
   - A Stored Procedure with IN, OUT and IN/OUT parameter
8. Stored Function
   - A Simple Stored Function
   - A Stored Function that returns
   - A Stored Function recursive
9. Cursors
   - A Simple Cursor
   - A Parameterize Cursor

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North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
Elective A
DSC (UG-CS-609 A): Lab on Lab on ASP.NET
Semester-VI

Course Objectives:

Course Outcomes:

1. Write an ASP .net program that demonstrate use of HTMLControls
2. Write an ASP .net program that demonstrate use of webcontrols.
3. Write an ASP .net that return the windows name of your computer and URL of the page that you arevisiting.
4. Write an ASP .net program that demonstrate use of Validation Controls.
5. Write an ASP .net program that demonstrate use of IntrinsicObjects.
6. Write an ASP .net program that demonstrate Application and Session Scope Variables using Global. Ajax
7. Write an ASP .net program that demonstrate Pagedirectives.
8. Write an ASP .net page that used the connection object to connect the database and display information using data gridControls.

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North Maharashtra University, Jalgaon
T. Y. B. Sc. (Computer Science)
(w.e.f. June-2020)
Elective B
DSC (UG-CS-509 B): Lab on JAVA Programming II
Semester-VI

Course Objectives:

- **To design User Interface using Swing and AWT**
- **Learn the advanced concept of java**
- **To aware about the applet programming**

Course Outcomes:

- Program using graphical user interface with Swing classes
- Handle different kinds of events generated while handling GUI components
- Create programs using menus and dialog boxes
- Program to create applets
- Understand advanced java concepts like JDBC, Java Beans

1. Write a program in Java to display messages in various fonts in aframe

2. Write a program in Java to draw various geometric shapes like circle, line, rectangleetc.

3. Write a program in Java to demonstrate paintmode.

4. Write a program in Java to demonstrate windowevents.

5. Write a program in Java to demonstrate Mouseevents.

6. Write a program in Java to demonstrate Keyboard events.(key pressed, key released)

7. Write a program in Java to demonstratemulticasting

8. Write a program in Java to demonstrate user interface component list boxes and combo box.

9. Write a program in Java to demonstrate user interface component radio button and check box.

10. Write a program in Java to demonstrate menus as interfacecomponent.

11. Write an Applet to display humanface.

12. Write a program in Java to demonstrate Java Applet with parameter

13. Write a program in java to demonstrate collection interfaces. (List andSet).

Kavayitri Bahinabai Chaudhari

North Maharashtra University, Jalgaon

ECONOMICS

(HUMANITIES)

With effect from June 2020

Revised syllabus for T.Y.B.A. (V and VI Sem.)

Semester Pattern

CHOICE BASED CREDIT SYSTEM (CBCS)
Under Graduate Programme (U.G. Course)
(60:40 PATTERN)
W.e.f. June-2020

FACULTY OF HUMANITIES- STRUCTURE OF T.Y.B.A. UNDER C.B.C.S. PATTERN
w.e.f. June 2020
SUBJECT : ECONOMICS

Semester/ Credit	Discipline specific Core Course (DSC)	Ability Enhancement Compulsory Course (AEC)	Skill Enhancement (SEC)	Discipline specific Elective Course (DSE)	Generic Elective (GE)
V Sem Credit : 28 (10 Papers)	**MIL 3 (03)** **DSC 1 (E) (03) Eco 351 General Paper (Indian Economy Since 1980- III)** **DSC 2 E– (03) General Paper** **DSC 3 E (03) General Paper**	**English Communication (02)**	**SEC 3 Eco-354 (02) Modern Banking**	**DSE 3 (A) (03) (S3) Eco-352 (A) Economics of Public Finance I** **OR** **DSE 3 (A) (03) (S3) Eco-352 (B) Industrial Economics –I** **OR** **DSE 3 (A) (03) (S3) Eco-352 (C) Statistics for Economics I** **DSE 4 (A) (03) (S4) Eco-353 (A) Theory of International Trade & Practices –I** **OR** **DSE 4 (A)(03) (S4) Eco-353 (B) Economic Development & Growth -I**	**GE 1 (A) (03)** **GE 2 (A) (03) Eco- 355 Indian Economic Environment I**

FACULTY OF HUMANITIES- STRUCTURE OF T.Y.B.A. UNDER C.B.C.S. PATTERN
w.e.f. June 2020
SUBJECT : ECONOMICS

Semester/ Credit	Discipline specific Core Course (DSC)	Ability Enhancement Compulsory Course (AEC)	Skill Enhancement Course (SEC)	Discipline specific Elective Courses (DSE)	Generic Elective (GE)
VI Sem Credit : 28 (10 Papers)	**MIL 4 (03)** **DSC 1 (F) (03) Eco 361 General Paper (Indian Economy Since 1980- IV)** **DSC 2 F– (03) General Paper** **DSC 3 F (03) General Paper**	**English Communication (02)**	**SEC 4 (02) Eco-364 Indian Financial market**	**DSE 3 (B) (03) (S3) Eco-362 (A) Economics of Public Finance II** **OR** **DSE 3 (B) (03) (S3) Eco-362 (B) Industrial Economics –II** **OR** **DSE 3 (B) (03)(S3)Eco-362 (C) Statistics for Economics II** **DEC 4 (B)(03) (S4) Eco-363 (A) Theory of International Trade & Practices –II** **OR** **DEC 4 (B) (03) (S4) Eco-363 (B) Economic Development & Growth -II**	**GE 1 (A) (03)** **GE 2 (B) (03) Eco- 365 Indian Economic Environment II**

- AEC- English Communication is Compulsory Paper. It is mandatory to each students admitted in third year.
- MIL is also a compulsory paper. A student has to obtain one paper from Marathi, Hindi, Sanskrit, Urdu, Ardhmagdhi etc.
- DSE-3 and 4 are the papers at specialization level. DSE-3 paper should be one from A, B or C and DSE-4 paper should be one from A and B. These are S-3 & S4 papers.
- DSC 1, 2 and 3 are general papers. Among them, DSC-1 is general Economics paper and DSC-2 and DSC-3 are the two general paper already selected at SYBA level.
- SEC – is a skill based paper. One paper should be selected among the papers taught in the Institute.
- GE is a Generic Elective paper. Two papers should be selected among the papers taught in the Institute.

EQUIVALENCE

Sem.	Existing Pattern w.e.f. June-2015	Marks	CBCS Pattern w.e.f. June 2020	Marks
V	Compulsory English	100	AEC - Ability Enhancement compulsory Course	100
	--		MIL 3 Compulsory Course	100
	General Paper G3 Eco 351 Indian Economy Since 1980 –III	100	DSC 1 (E) Eco-351 Indian Economy Since 1980- III	100
	Other General Paper	100	DSC 2 (E) (General Paper of any subject)	100
	Other General Paper	100	DSC 3 (E) (General Paper of any subject)	100
	Eco-352 Any one of the following		**DSE 3 Eco 352 any one of the following**	
	Eco-352 (A)Public Finance & Policies -I (S3)	100	DSE 3(A) Eco-352 (A) Economics of Public Finance	100
	Eco-352 (B) Economics of Indian Agriculture- I (S3)	100	DSE 3 (A) Eco-352 (B) Industrial Economics- I	100
	--		DSE 3 (A) Eco-352 (C) Statistic for Economics -I	100
	Eco-353 Any one of the following		**DSE 4 (A) Eco 353 any one of the following**	
	Eco-353 (A) International Trade & Practices – I (S4)	100	DSE 4(A) Eco-353 (A) Theory of International Trade & Practices- I	100
	Eco-353 (B) Indian Banking & Practices	100	DSE 4 (A) Eco-353 (B) Economic Development & Growth- I	100
	--		SEC (3) Eco-354 Modern Banking	100
	--		GE 1 (A) Inter Disciplinary any subject	100
	--		GE 2 (A) Eco-355 Indian Economic Environment –I	100
	Home Economics			
	HECO 351 (Socio Economic Problems and Policies with reference India) –I	100	DSC 1 (E) HECO-351 Indian Social Problem & Policies	100
	Total Marks	**600**	**Total Marks**	**1000**

EQUIVALENCE

Sem.	Existing Pattern w.e.f. June-2015	Marks	CBCS Pattern w.e.f. June 2020	Marks
VI	Compulsory English	100	AEC - Ability Enhancement compulsory Course	100
	--		MIL 4 Compulsory Course	100
	Eco-361 Indian Economy since 1980- IV	100	DSC 1 (F) Eco-361 Indian Economy Since 1980- IV	100
	Other General Paper	100	DSC 2 (F)	100
	Other General Paper	100	DSC 3 (F)	100
	Eco-362 any one of the following		**DSE 3 Eco-362 any one of the following**	
	Eco-362 (A) Public Finance & Policies - II	100	DSE 3(B) Eco 362 (A) Economics of Public Finance-II	100
	Eco-362 (B) Economics of Indian Agriculture- II	100	DSE 3 (B) Eco-362 (B) Industrial Economics-II	100
	--		DSE 3(B) Eco-362 (C) Statistics for Economics –II	100
	Eco-363 any one of the following		**DSE 4 Eco-363 any one of the following**	
	Eco-363 (A) International Trade & Practices – II	100	DSE 4 (B) Eco-363(A) Theory of International Trade & Practices- II	100
	Eco-363 (B) Indian Banking & Practices –II	100	DSE 4 (B) Eco-363(B) Economic Development & Growth- II	100
	--		SEC 4 Eco-364 Indian Financial Market	100
	--		GE 2 (B)	100
	--		GE 1 (B) Eco-365 Indian Economic Environment – II	100
	Home Economics			
	HECO 361 (Socio- Economic problems and Policies with reference India) II	100	DSC 1 (F) HECO-361 Indian Economic Problems & Policies	100
	Total Marks	**600**	**Total Marks**	**1000**

T.Y.B.A- CBCS Pattern

(ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course- No DSC -1 (E & F) Eco-351 & 361 : General Paper – 3rd**
2. **Paper Title: Indian Economy Since 1980 –III & IV**
3. **Credit – 3 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks- 60 , Internal - 40**
5. **Objectives of paper :**
   1. To enable students to have understanding the various issues of Indian Economy.
   2. To develop the analysing capability in the context of current Indian Economic Problems.
   3. To able the students for appearing the MPSC, UPSC and other competitive Examinations.

SEMISTER-V

DSC-1(E)-Eco-351 Indian Economy Since 1980 –III

1. Financial system in India **20 Lectures**

a) The structure of Indian Financial System
b) Money Market-Meaning, Nature and Importance of Indian Money Market
c) Constituents of money market
d) Recent Reforms in Indian Money Market
e) Capital Market-Meaning and Nature of capital Market
f) Constituents of Capital Market
g) Defects of capital Market
h) Recent Reforms in Indian capital Market
i) Functions of SEBI

2. Money and Banking in India. **20 Lectures**

a) Trends of Prices in India
b) Causes of raising prices in India
c) Inflation -Meaning, consequences of Inflation in India
d) Anti-Inflationary policy of Government
e) Indian Banking-Structure of Indian Banking system
f) Functions of Commercial Banking in India
g) Progress of Commercial Banking since Nationalisation in India
h) Main Functions of RBI
i) Development Banking-Objectives and Functions

j) Functions of IFCI and IDBI

3. Foreign Trade and Globalization of India **20 Lectures**

a) Importance of Foreign Trade for Developing Economy.

b) Composition of India's Foreign Trade.

c) Direction of India's Foreign Trade.

d) India's Balance of Payment (BOP)

e) Causes of disequilibrium of BOP.

f) Measures to correct the adverse BOP.

g) Recent trade policy.

h) Concept of LPG- Effects of globalization on Indian Economy.

i) Role and functions of WTO, World Bank and IMF.

• SEMISTER-VI

DSC-1(F)-Eco-361 Indian Economy Since 1980 –IV

1. Federal Finance in India. **20 Lectures**

a) Silent Features of Federal Financial System in India.

b) Constitutional provision regarding the Division of Resources between Centre and State.

c) Functions of Finance Commission.

d) Recommendations of recent Finance Commission.

e) Financial conflict between Canter and State.

2. Public Revenue of India. **20 Lectures**

a) Features of Indian Tax System.

b) Tax Revenue of Central government.

c) Tax Revenue of State government.

d) Concept of Goods and Service Tax. (GST), Effects of GST on Indian Economy.

e) Problem of Black Money in India-Causes and remedies.

3. Public Expenditure and Public Debt in India. **20 Lectures**

a) Trends of Central and State Government Expenditure.

b) Causes of increasing Public Expenditure.

c) Effects of Public Expenditure.

d) Sources of Public Debt.

e) Causes of increase in Public Debt.

f) Deficit Financing – Meaning and Nature.

g) Importance and Defects of Deficit Financing.

h) Fiscal responsibility & Budget management act 2003.

References:-

1. Indian Economy, Gaurav Datta & Mahajan- S Chand & Sons Delhi.
2. Indian Economy, Problems, Development and Planning, A.N.Agrawal, Visha Prakashan, New Delhi.
3. Indian Economy, S.K.Mishra and V.K.Puri, Himalaya Publication House, New Delhi.

4. Rural Development in India, Vasant Desai, Himalaya Publication House, New Delhi.
5. Bharatiya Arthvyavstha, Dr.N.L.Chavhan, Prashant Publication, Jalgaon
6. Bharatiya Arthavyavstha Aani Sahkar, Dhoot, Pimpalpure Publisher, Nagpur
7. Sahkar, Bhosle, Kate, Fadke Prakashan, Kolhapur
8. Bharatiya Arthavyavstha, Desai, Bhalerao, Nirali Prakashan, Pune
9. Bharatiya Arthavyavsthechi Paridrushhe, Dr.D.R.Jagtap, Dr.D.G.Patil, Prashant Publication, Jalgaon.

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Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

T.Y.B.A- CBCS Pattern

(ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course- No DSE -3 (A & B) Eco-352(A) &362(A) : Special Paper – 3rd**
2. **Paper Title : Economics of Public Finance –I & II**
3. **Credit – 3 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks- 60 , Internal - 40**
5. **Objectives of paper.**
   a) To enable students to have understanding the various issues of Public Finance and Policies.
   b) To develop the analyzing capability in the context of Public Finance and Policies.
   c) To enable the students for appearing the MPSC, UPSC and other competitive Examinations.

SEMESTER-V

DSE -3 (A) Eco-352(A) Economics of Public Finance – I

Unit 1- Introduction to Public Finance **20 lectures**

a) Meaning, Nature and Scope of Public finance
b) Distinction between Public Finance and Private Finance
c) Importance of Public Finance in developing economy
d) The Principle of maximum Social advantage

Unit 2- Public Revenue **20 Lectures**

a) Sources of Public Revenue- Tax Sources and Non Tax Sources
b) Tax- Meaning, objective, feature & base of Taxation, Canons of Taxation, Model of Lindahl.
c) Classification of Taxation
   I) Direct and Indirect Taxes (with GST) Merits and demerits
   II) Progressive, Proportional and Regressive Taxes
d) Taxable Capacity- Meaning and Importance of taxable capacity, Factors determining taxable capacity.
e) Public goods, Private goods and Market Failure.

Unit 3- Approaches of Taxation & Government Intervention **20 Lectures**

A) Approaches of Taxation

a) Concepts of Impact, Incidence and Shifting of Taxes
b) Factors affecting Incidence of tax

c) Modern views of incidence of Tax. Prof. Musgrave's views on incidence of Taxation.

d) Approaches to Taxation

I) The Benefit Approach

II) Ability to Pay Approach

III) Least sacrifice theory

IV) Taxable capacity (modern view)

e) Effects of Taxation on Production and Distribution

B) Government Intervention

a) Role of Government in Economy.

b) Tools of Government Intervention

SEMESTER-VI

DSE- 3 (B)Eco-362 (A) Economics of Public Finance- II

Unit 1- Public expenditure **20 Lectures**

a) Meaning and Principles of Public expenditure

b) Revenue and Capital Expenditure

c) Growth & causes of public expenditure

d) Role and Objectives of Public expenditure (Musgrave's View)

e) Effects of Public expenditure-On Production and Distribution

f) Trends in Public expenditure.

Unit 2- Public Debt **20 Lectures**

a) Meaning, Nature and Objectives of Public Debt

b) Sources of Public Barrowings

c) Burden of Public Debt

d) Role of Public Debt in Developing Economics

e) Public debt Management and Repayment of Public Debt

f) Types of Public debt

Chapter 3- Budget and deficit finance **20 Lectures**

a) Budget- Meaning and Types of Budget

b) Role of Budgetary Policy in Economic Development

c) Deficit financing- Meaning and Effects

d) Distinction between Deficit Budget and Deficit Finance

e) Role of Deficit financing in Developing Countries

f) Concept & Role of fiscal Policy in developing countries

References and Recommended Books

1. H. Dalton, Principals of Public Finance.
2. B.P.TYagi, Public Finance.
3. K.K.Dewet, Modern Economic Theory.
4. R.G.Lipsey and Chrystal, Principles of Economics

5. D.M.Mithani, Public Finance.
6. M.L. Ghingan, Money Banking & Public Finance, Vrunda Publications Pvt. Ltd. Delhi.
7. Dr. D.N. Gurtu, Public Finance :Theory & Practice, College Book Depo New Delhi.
8. B.L. Mathur, Fiscal Economics, Arjun Publishing House, New Delhi
9. H.L. Bhatia, Public Finance, Vikas Publishing House, New Delhi
10. T.T. Sethi, Money Banking & Public Finance, Laxmi Nrayan Agrawal, Agra
11. Sarvajanik Aayavya – Neeta Vani
12. Sarvajanik Aayavya – Sudhir Bodhkar
13. Sarvajanik Aayavya – Dr. Vishwas Kadam
14. Bharatatil Sarvajanik Aayavyay – Prof.Dr.S.V.Dhamdhere
15. Rajaswa – Dev, Zhambre
16. Sarvajanik Aayavyache Arthshastra – Dr.Manoj Gayakwad, Prof.Dr.N.L.Chavhan

T.Y.B.A- CBCS Pattern

(ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course- No DSE – 3 (A&B) Eco-352 (B) & 362(B) : Special Paper – 3rd**
2. **Paper Title: Industrial Economics –I & II**
3. **Credit – 3 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks- 60 , Internal - 40**
5. **Objectives of paper.**
   a) To enable students to have understanding the various issue of Industrial Economics
   b) To develop the knowledge of Industrial sector and motivate students to industrial sector.
   c) To able the students for appearing MPSC,UPSC and other competitive examination.

Semester – V

DSE 3 (A) Eco 352 (B) Industrial Economics -I

Unit – 1-Introduction of Industrial Economics **20 Lectures**

a) Meaning ,Definition ,Nature and Scope of Industrial Economics
b) Importance and Limitation of Industrialization in Developing Economy
c) Strategy of Industrialization
d) Components of Industrial development
e) Industrialization and Agricultural Development

Unit – 2 – Industrial Development in India **20 Lectures**

a) Role of Industrial Sector in India
b) Nature and Development of Industrialization in India
c) Location of Industry – Meaning of location, determinants of location
d) Small Scale Industries and Large Scale Industries –Meaning, Nature, Role and Problems
e) Public, Private and Co-operative Industry in India – Meaning, Nature, Role and Problems
f) Major Industries in India and Role of them – Sugar factory, Cotton Mills, Cement Industry, Engineering and Still and Iron Industry

Unit – 3 –Law of Industrial Labour **20 Lectures**

a) Meaning, Definition, Nature and Problems of Industrial Labour
b) Various Law's of Industrial Labour – Company Act, Mineworker Act, Industrial disputes Act, Wages and Social Security Act
c) Foreign Exchange Management Act 1999

e) Industrial Sickness – Definition, Reason and Governmental remedies

f) Social Security in India

Semester VI

DSE 3 (B) Eco 363 (B) Industrial Economics - II

Unit – 1 –Industrial Finance and Investment **20 Lectures**

a) Industrial Finance **–** importance and sources— Industrial Finance Corporation of India (IFCI), Industrial Credit and Investment Corporation of India , Industrial Development Bank of India(IDBI),Small Industries Development Bank of India (SIDBI), National Small Industries corporation, State Finance Corporation (SFC)

b) Foreign Capital – Meaning and Needs of foreign Capital, Types of foreign capital-Foreign Direct Investment(FDI) – Governments Policy towards FDI

c) Role and defects of Share Market in Indian Industrial Sector-

d) Securities and Exchange Board of India (SEBI)- Functions

a) Decision of Investment – Meaning ,Nature and Types

Unit -2- Productivity and quality **20 Lectures**

a) Meaning and Needs of Industrial Productivity

b) Determinants of Industrial Productivity growth

c) Remedies to growth of Industrial productivity

d) Meaning of Productions Quality –Needs of Quality in Global Competition- Governmental Policy to quality Improvement

Unit- 3- Economic Reform and Changes in Industrial Sector **20 Lectures**

a) New Industrial Policy Since 1991 -- Features and evaluation

b) Meaning and Definition of Globalization, Liberalization, Privatization

c) Impact of Globalization, Liberalization, Privatization on Indian Industrial Sector

d) Disinvestment Policy –Meaning of Disinvestment Policy Impact of Disinvestment Policy on Indian Industrial Sector

e) Multinational Companies – Meaning , Features and Functions of Multinational Companies Good and Bad Effects of Multinational Companies on Industrial Sector, Needs of Controlling on Multinational Companies

f) Impact of Industrial Sector on Environment and Remedies to balancing Environment.

List of Reference Book

1. Desai B.(1999) Industrial Economy in India, Himalaya Publishing House Mumbai
2. Singh A and A.N. Sandhu (1988) Industrial Economics , Himalaya Publishing House Mumbai
3. Barthwal R.R.(2000)Industrial Economics Wiley Eastern Ltd. New Delhi.
4. Dr.Sau.Mangla Jangle, Aaudyogik Arthshashra, Prashant Publication, Jalgaon
5. Prof.Dr.Sumitra Vijay Pawar, Dr.S.D.Patil, Dr.Prashant Sonawane, Aaudyogik Arthshashra, Prashant Publication, Jalgaon.

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Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

T.Y.B.A- CBCS Pattern

(ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course- No DSE -3 (A&B) Eco-352(C) &362(C) : Special Paper – 3rd**
2. **Paper Title : Statistics For Economics- I & II**
3. **Credit – 3 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks- 60 , Internal - 40**
5. **Objectives of paper**
   1) This course is offered to students to provide knowledge in the area of statistics.
   2) The students are made familiar with various tools in statistics like mean, median, mode, measures of dispersion.
   3) To Study the Collection of Primary data and Secondary data.
   4) To make the Classification and Tabulation of data.

Semester -V

DSE -3 (A) Eco-352 (C) Statistics For Economics- I

Unit I - Introduction of Statistics **13 Lectures**

a) Meaning, Definition and Scope of Statistics.
b) Importance and Function of Statistics
c) Limitation of Statistics
d) Characteristics of Statistics

Unit II Collection of Data **22 Lectures**

a) Primary Data: Meaning, Definition & it's Merit-Demerits, Methods of collecting Primary Data, Ideal Questionnaire.
b) Secondary Data: Meaning, Definition, Sources & it's Merit-Demerits of Secondary Data.
c) Organization of Data: Classification, Frequency Distribution and Tabulation of Data, Types of Tabulation

Unit III - Measures of Central Tendency **25 Lectures**

a) Mean: Simple, Discrete and Continuous Series (Merits & Demerits).
b) Median: Simple, Discrete and Continuous Series (Merits & Demerits).
c) Mode: Simple, Discrete and Continuous Series (Merits & Demerits).

d) Concept of cumulative frequency

f) Quartiles: Simple, Discrete and Continuous Series (Merits & Demerits).

g) Deciles: Simple, Discrete and Continuous Series (Merits & Demerits).

h) Percentiles: Simple, Discrete and Continuous Series.

Semester – VI

DSE -3 (B) Eco-362 (C) Statistics For Economics- II

Unit I - Measures of Dispersion **20 Lectures**

a) Meaning of Dispersion.

b) Range: Calculation of Range & its Co-efficient

c) Quartile Deviation: Calculation of Quartile Deviation & its Co-efficient.

d) Mean Deviation : Calculation of Mean Deviation & its Co-efficient.

e) Standard Deviation : Calculation of Standard Deviation & its Co-efficient.

Unit II - Correlation and Regression **20 Lectures**

a) Meaning, Types and Significance of Correlation.

b) Graphical Method of calculating Correlation.

c) Simple Correlation: Karl Pearson's method.

d) Rank : Co-efficient of correlation (Sparman Rank Method)

e) Meaning of Regression, Significance, Regression Line.

f) Difference between Co-relation and Regression

Unit III - Index Number **20 Lectures**

a) Meaning, Types of Index Number.

b) Simple & Weighted Aggregate Method and Significance of Index Number.

c) Construction of Index Number.

d) Laspeyres, Paasche and Fisher's Methods of Constructing Index Number.

e) WPI & RPI Index Number

f) Standard of Living IndexLiving

Refrence Book

1. Allen, R.G.D. (1974), Mathematical Analysis for Economists, Macmilian Press, London.
2. Croxfon, F.E. Cowden D.J. and Kleins (1973), Applied general statistics, prentice Hall, New Delhi.
3. Gupta, S.C. and Kapoor V.K. (1993), Fundamentals and applied statistics, S.Chand & Sons; New Delhi.
4. Speigal, M.R. (1992), Theory and problems of statistics, McGraw Hill Book, London.
5. M.C. Sukla, S.S. Gulshan, Statistics, S.Chand & Company Ltd., New Delhi.
6. Gupta S.C. Statistical Methods
7. Gupta S.P. Statistical Methods
8. Ram Deshmukh, Mulbhoot Sankhikhi, Vidya Prakashan, Nagpur, 2005.

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T.Y.B.A- CBCS Pattern

(ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course- No DSE-4(A & B) Eco-353 (A) & 363 (A) : Special Paper – 4th**
2. **Paper Title – Theory of International Trade and Practices – I & II**
3. **Credit – 3 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks - 60 , Internal - 40**
5. **Objectives of paper :**
   a. To enable students to have understanding the various issues of International Trade and Practices.
   b. To develop the analyzing capability in the text context of International Trade and Practices
   c. To able the students for appearing the MPSC, UPSC and other competitive Examinations.

SEM- V

DSE 4 (A) Eco-353 (A) Theory of International Trade and Practices-I

Unit- I – International Economics and Gains from Trade **20 Lectures**

a) International Economics – Meaning, nature, scope & importance.
b) Internal and external Trade- Meaning, similarities & differences
c) International Trade and Economic development.
d) Gains from International Trade – Meaning Factor influencing, Gains from International Trade, Measurements of Gains from Trade.

Unit- II - Theories of International Trade and Trade Policy. **20 Lectures**

a) Classical Trade Theories – Adam Smith Trade theory, David Ricardo Trade theory,
b) Modern Trade Theories – Heckscher -Ohlin Trade theory, Leontief paradox .
   Free Trade policy –Meaning, arguments for and against.
   Protection Trade – Meaning, arguments for and against.

Unit III – Terms of Trade and Balance of payment – **20 Lectures**

a) Terms of Trade – Meaning, Factors influencing Terms of Trade, Reason of the unfavorable terms of Trade of underdeveloped countries .
b) BOT and BOP – Concept of BOT and BOP, Components of Balance of Payments, equilibrium and disequilibrium in balance of payment, causes of disequilibrium in BOP and measures for correcting disequilibrium in BOP.
c) Foreign Exchange Rate and Control of Foreign exchange Rate – Meaning, determinant of foreign exchange rate, causes of fluctuation in exchange rate, purchasing power parity theory, Balance of payment theory, Fixed and Flexible / floating exchange rate, (meaning, merits and Demerits.)

exchange Control – Meaning, objective methods of exchange control. Demerits of exchange control.

SEMESTER – VI

DSE 4 (B) Eco-363 (A) Theory of International Trade and Practices-II

Unit- I International Capital movement and multinational companies – 20 Lectures

a) International Capital Movement - meaning, classification, factors influencing, capital movement.
b) Foreign Investment – Portfolio investment and foreign direct investment (meaning, objective, determinants, advantages and disadvantages)
c) MNC's- Role of MNC in developing countries. Reason for the growth of MNC's, advantages and disadvantages.
d) Forex Reverse- Meaning, Needs, Forex Reverse in India.

Unit –II – International Financial System & Institutions– 20 Lectures

a) Euro currency market- meaning, origin, growth, general features, Euro currency market and developing countries, Achievements & Failure.
b) IMF – Objective, function and critical appraisal, performance, SDRs.
c) IBRD (World Bank)- objective, function, critical appraisal, performance.
d) ADB - Objective, function, Sources of funds, Progress, Evaluations.
e) NDB – BRICS new development Bank- Objective, features, functions & Progress.
f) Global financial Crisis 2008 – Meaning, subprime crisis, courses, effects.

Unit- III – International Co-operation Devaluation and convertibility of Rupee- 20 Lectures

a) Regional Economic Cooperation – Meaning and Types, EEC- Objective, Organisation, Progression, Achievements, EEC and India.
   ASEAN- Objective, Organisation, Progression, Achievements, ASEAN and India.
   SAARC - Objective, Organisation, Progression, Achievements, SAARC and India
   BRICKS – Origin Objectives, Progress, Achievements, BRICKS and India.
   G 20 - Objective, Organisation, Progression, Achievements, G 20 and India
b) WTO – Objectives, Functions, advantage & disadvantages of India,– structure, function, advantage & disadvantage.
c) Convertibility of Rupee – Partial and full convertibility of Rupee on current account, Desperation of Rupee value and RBI.
d) Devaluation- Objectives, Requisite, condition for success of devaluation, Devaluation of Rupees.
e) BRICS- Origin and Background, Objectives, features, achievements, challenges, BRICS Summits, BRICS and India.
f) G-20 – What is G-20?, Origin, Members, Objectives, How to work G-20, G-20 Summits and Achievements.
g) Devaluation- Objectives, Requisite, condition for success of devaluation, devaluation of Rupees, depreciation of Rupee Value.
h) Convertibility of Rupees - Partial and full convertibility of Rupees on Current account.

List of Books –

1) Kenen, P.B. (1994) The International Economy, Cambridge University Press Londan.
2) Kindlberger C.P.(1973) International Economics, RD Irwin Homewood.
3) Soderstern B.O. (1991) International Economics, Macmillab Press Ltd. London.
4) Krugman P.R. and Obstgeld (1994) International Economics Theory and Policy. Glenview, Foresman.
5) Ellaworth P.T. (1961) International Economics, Macmillan Pess Ltd. London.
6) Sinha, Sinha (2000) International Economics, National Publishing House, New Delhi.
7) Mithani D.M. (2010) International Economics, Himalaya Publishing House, Mumbai.
8) Zingan M.L. (2015) International Economics, Vrunda Pub. House, New Delhi.
9) Desai SSM, International Economics, Nirali Prakashan, Pune.
10) Dev, Zhambre – Antarrashtriya Arthshashtra, Pimpalapure Prakashan, Nagpur
11) Chavhan N.L. - Antarrashtriya Arthshashtra, Prashant Publication, Jalgaon
12) Chavhan N.L. - Antarrashtriya Vyapaar Aani Vyavhaar, Prashant Publication, Jalgaon
13) Antarrashtriya Arthshashtra – Prof.D.S.Kadam, G.J.Lomte.
14) Antarrashtriya Arthshashtra – Prof.Dr.Rajendra A. Rasal

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Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

T.Y.B.A- CBCS Pattern

(ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course- No DSE -4 (A &B) Eco-352(B) &362(B) : Special Paper – 4th**
2. **Paper Title : Economic Development and Growth – I & II**
3. **Credit – 3 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks- 60 , Internal - 40**
5. **Objectives of paper: -**
   a. This paper enables the student to acquaint with the basic concepts and issues of growth and development.
   b. The approach has been to cover all important areas of development economics.
   c. The paper should be taught with reference to Indian economic conditions.

Semester -V

DSE -4 (A) Eco-352(B) Economic Development and Growth – I

Unit 1 : Introduction to Economic of Development and Growth. 20 Lectures

a) Meaning, concept and characteristics of economic development and economic growth.
b) distinguish between growth and development.
c) Alternative measures of development,
d) Characteristics of developed and developing economies.
e) Development as a total social process, Development as freedom , Development as Liberation.

Unit 2 : Theories of Economic Growth and Development 20 Lectures

a) Classical theory of development - Rostow's stages of growth, Lewis' model of unlimited supplies of labour,.
b) Marx Theories of Economic development.
c) Theory of circular causation - Myrdal
d) Lebenstence Theory of Critical Minimum Efforts.
e) Theories of Balanced and Unbalanced Growth (Nurkse and Hirschman theory only)

Unit 3 : Poverty, Inequality and Development 20 Lectures

a) Poverty : definition and Concept - traditional and modern view.(World bank, Abhijit Banarji)
b) Measurement of poverty –absolute and relative.
c) Nurkse's analysis of vicious circle of poverty,

d) Meaning and measurement of income inequality, economic growth and income inequality – Kuznet's inverted hypothesis, impact of inequality on development

e) Policies for reducing poverty and Income inequality.

Semester -VI

DSE -4 (B) Eco-362(B) Economic Development and Growth – II

Unit 1 : Economics planning . **20 Lectures**

a) Meaning and definition of Economic planning.

b) Features and significance of Economics planning

c) Objective of Indian Planning.

d) Indian planning : Achievements and weaknesses

e) Twelfth Five year plan (2012-17): objective and strategies.

Unit 2 : Domestic measure for economic development . **20 Lectures**

a) Capital formation and economic development.

b) Importance of capital formation.

c) Sources of capital formation.

d) Agriculture and economic development.

e) Role of industrialization in economic development.

Unit 3 : Environment and sustainable development . **20 Lectures**

a) Definition and concept of sustainable development.

b) Indicators of Sustainable Development.

c) Basic issues of environment and development – Development and environment inter- linkage;

d) Policy instruments for controlling water and air pollution and forestry policy in India.

e) Economic activity and climate change.

References :

1. Partha Dasgupta, Economics, A Very Short Introduction, Oxford university Press, 2007.
2. Kaushik Basu, The Oxford Companion to Economics in India, OUP, 2007.
3. Amartya Sen, Development as Freedom, OUP, 2000.
4. Robert Putnam, Making Democracy Work: Civic Traditions in Modern Italy, Princeton University Press, 1994
6. Kindleberger C P(1977): Economic Development, McGraw Hill, New York.
7. Meier, G M (1995): Leading Issues in Economic Development, Oxford University press, New Delhi.
8. Debraj Ray, Development Economics, Oxford University Press, 2009.
9. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Understanding Poverty, Oxford University Press, 2006.
10. Todaro M P (1996): Economic Development, Orient Longman, London
11. Higgins B. (1959), Economic Development, W.W . Norton Publisher , New York.
12. Daron Acemoglu and James Robinson, Economic Origins of Dictatorship and Democracy , Cambridge University Press, 2006.

13. Jhingan, M L (2010): The Economics of Development and Planning, Vrinda Publishers (P) Ltd., Delhi.
14. Gaurav Datt & Ashwani Mahajan (2018), Indian Economy.
15. Misra and Puri (2014), Indian Economy, Himalaya Publishing House, Mumbai.
16. Patil J.F. Aani P.J.Tamhankar 1990 : Vikas Va Niyojanache Arthshashra, Fadke Prakashan, Kolhapur.
17. Kavimandan Vijay 2011 : Vikasache Arthshashtra Aani Niyojan, Shri Mangesh Prakashan, Nagpur
18. Fadnis Mrunalini 1998 : Vikasache Arthshashra, Vidya Prakashan, Nagpur
19. Mahajan Mukund 1992 : Vikasache Arthashashra, Nirali Prakashan, Pune.
20. Kuralkar Aani Ektate 1991 : Vikasache Arthashashra, Fadke Prakashan, Kolhapur

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T.Y.B.A- CBCS Pattern

(ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course- Skill Enhancement Course:- SEC (3 & 4) Eco-354, Eco-364**
2. **Paper Title: Modern Banking & Indian Financial Market**
3. **Credit – 2 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks- 60 , Internal - 40**
5. **Objectives of paper :**
   1. To provide the students basic knowledge of Banking & Financial market.
   2. To provide the information of Indian Banking system.
   3. To updated the students about new changes and technology in Banking.
   4. To know the relevance of banking practices in modern competitive world.

SEMESTER– V

SEC- 3 Eco-354 Modern Banking

Unit- I Introduction to Modern Banking and Practices **20 Lectures**

a. Banking- Evolution and Development of Banking, meaning and Definition of Banking.
b. Function of Modern Banking.
c. Feature of Banking.
d. Principles of Sound Banking.

Unit II Banking Operations. **20 Lectures**

a. Process of account opening, operating and closing of Account.
b. Types of Bank Customers.
c. Relation between bankers and Consumers .
d. Know your Customer (KYC) .
e. Customer Credit Assessment.
f. Pay-in slip, Cheque Book, Types of cheque.

Unit III Modern technology in banking Services **20 Lectures**

a. Role, functions of Technology in Banking and Computerization in Banking .
b. Electronic fund Transfer , Electronic clearing service, Real time Gross Settlement system, National Electronic fund Transfer, National Settlement System, E- parches / E-money, fund Transfer at point of sale.

c. Automatic machine in Banking Services- Automatic Teller Machine, Cash Deposit Machine, Cheque Deposit Machine, Passbook Printing Machine, Note and Coin Counting Machine.

d. Payment Cards – Debit Card, Credit Card, Virtual Card.

e. Modern Banking Services - Tele Banking, Internet Banking, Mobile Banking, Core Banking, Virtual Banking, Insurance,
Demat account.

f. Banking Code and Security- IFSC code, MICR code, PIN, OTP, CVV, Fund Transfer App (BHIM and Other)

g. Precaution in using Technology in Banking.

Semester VI

SEC -4 Eco-364 Indian Financial Market

Unit I The financial System in India **20 Lectures**

a. Functions of Financial system in India.

b. Structure of Financial system in India.

c. Progress of Commercial Banking in India.

d. Development Banking & Financial Institution, Non-Banking Financial Institution in India.

e. Banking sector Reform in India.

Unit II Financial Market in India **20 Lectures**

a. Money market – Meaning, features, Objectives, Importance and Defects of Money Market.

b. Constituents of Money Market.

c. Capital market- Meaning, Features, Objectives, Role & Defects of Capital Market.

d. Mutual funds and discount and finance house of India (DHFI)

Unit III Security market in India **20 Lectures**

a. Definition and meaning of Security Market.

b. Primary and Secondary market.

c. Stock Exchange and important terms of Stock Market.

d. Commodity Market and Spot Exchange.

e. Participatory Notes (PNs) and Short Selling.

f. Financial regulation and security Exchange Board of India (SEBI).

References :-

1. R. Ramchandran (2012): Banking Theory & practices M.J.P. Publications, Chennai.
2. E Gardan, K. Niranjan (2010) : Financial Markets and services, Himalaya Publishing House.
3. K.P. Kandasami, S. Niranjan, R. Parameswaran (2013): Banking law and practices , S. Chand & co. New Delhi.
4. Rajesh Kothari (2010) : Financial services in India: Sooge Publication , New Delhi.
5. M.C. Mujumdar (2013) : fundamentals of modern banking , New Central Book Agency, Kolkata.
6. G.Ramesh Babu (2010) : Indian financial system Himalaya publishing house, Mumbai.
7. M. Y. Khan (2010) : Financial services : Tata M. Graw hills education Pvt. Ltd, New Delhi.

8. Bharti V. Pahtak, (2008) : Indian financial system, Person education.
9. K.C. Shekher, (2013) : Banking Theory practices, vikas publishing house Pvt. Ltd., New Delhi.
10. Chavhan, (2020) Modern Banking and Indian Financial Market, Prashant Pub. Jalgaon.
11. Powar,(2019) Principles and Practices of Banking, Prashant Pub. Jalgaon.

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T.Y.B.A- CBCS Pattern

(ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course - Generic Elective GE- 2 (A & B) Eco-355 & Eco-365**
2. **Paper Title: Indian Economic Environment- I & II**
3. **Credit – 3 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks - 60 , Internal - 40**
5. **Objectives of paper :**
    1. To introduce the students Economics Environment for Business.
    2. To provide the information of Indian Economics Environment.
    3. To update the students about new reform in Indian Economy.
    4. To prepare the students for competitive examination.

Sem Vth

GE 1 (A) Eco-355 Indian Economic Environment- I

Unit I: Economics Environment of Business- An Introduction **20 Lectures**

a. Business- Meaning, Nature, Classification, Features, Objectives and limitations of Business.

b. Environment – Meaning, Steps of Environmental Analysis .

c. Types of Business Environment.

d. Economic role of Government in Economic Environment of Business, Role of a Business Economist.

e. Business Environment in India.

Unit II : Agriculture, Infrastructure and Economic Environment of Business **20 Lectures**

a. Role of Agriculture in Economic Development (Reference to Indian Economy)

b. Business Directly Dependent on Agriculture – The Agro- based Industry.

c. Indian Agricultural Policy An Overview.

d. Infrastructure – Meaning, Characteristics, Importance for Business.

e. Transport and Communication Services.

Unit III : Indian Industrial Environment **20 Lectures**

a. Role of Industry in India's Economic Development.

b. Some Problem of Industrial development in India.

c. New Industrial Policy- 1991.

d. Privatization and Disinvestment – Meaning, and Rationale of Privatization, Evaluation of Privatization policy in India , Disinvestment in India.

e. Mergers and Acquisitions- Meaning, Types of objectives of merger and takeover

Sem VIth

GE 1 (B) Eco-365 Indian Economic Environment- II

Unit I : Industrial Labour, Industrial Sickness and Economic Environment of Business

20 Lectures

a. Characteristics of Indian Labour and Employment, Working conditions of Labour.
b. Social Security in Indian and Trade Union.
c. Industrial Dispute - Meaning, causes, Dispute in India, Measures Solve Industrial Dispute.
d. Industrial Sickness - Meaning, size, causes, Consequences, Remedial Measures.
e. Provision of Companies act -2013, Revival and Rehabilitation of sick Companies
f. Insolvency and Bankruptcy code 2016.

Unit II : Financial Market and Foreign Capital Economic Environment of Business 20 Lectures

a. Inflation – Meaning, consequences of intuition, Anti- inflationary policy of the Government.
b. Money Market – Unorganized and Organized sector in Indian Money Market, Characteristics of Money Market.
c. Capital Market – Meaning, Structure and in Role of Capital market in Indian Economy. Growth of Capital Market in India, Reforms in Capital market.
d. Stock Market – Definition, Functions, SEBI.
e. Foreign Capital – Needs and components of foreign Capital, Foreign Investment (Meaning, Types, advantage and disadvantage, Inflow and policy of Government)

Unit III: Government policies for Economic Environment of Business 20 Lectures

a. Fiscal Policy **–** Objectives, The Fiscal imbalance and new fiscal Approach, fiscal Responsibility.
b. Tax Structure – Direct and Indirect Taxes (GST)
c. Monetary Policy- Credit control by RBI, Recent Monetary policy of RBI.
d. National Manufacturing policy, make in India.
e. Exim Policy – (Recent)
f. FERA- and FEMA.

Reference-

1. Puri, Mistra, Economic Environment of Business, 11th Etd. Himalaya Pub. House.
2. Aswathappa, Business Environment (11th Etd) Himalaya Pub. House.
3. Suman kalyan Chakraborty, Economic Environment of Business, Ist Etd. Himalaya Pub. House.
4. Cherunilun Francis, Business Environment, Himalaya Pub. House.
5. Faisal Ahmed, Business Environment: Indian and Global Perspective. PHL Learning Pvt.Ltd.
6. Fernando, Business Environment, Pearson Education.
7. Misra, Puri , Indian Economy (2019). Himalaya Pub. House.
8. Datta, Mahajan, Indian Economy (2019) S.Chand & com. Ltd N.O.
9. Chavhan,Gaykawad, Patil, Indian Economic Environment, Prashant Pub. Jalgaon.

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T.Y.B.A- CBCS Pattern

(HOME ECONOMICS)

SEMESTER– V & VI

Revised syllabus (W.e.f. June 2020)

1. **Paper course- No DSC -1 (E &F)- HECO – 351 & 361 : Special Paper – 3rd**
2. **Paper Title : Indian Social Problems and Policies**

   Indian Economic Problems & Policies
3. **Credit – 3 Total Lectures – 60 + 60 (45 min / Lectures)**
4. **External Marks- 60 , Internal - 40**
5. **Objectives of paper.**
   a) To create awareness among students regarding social problems exists in society.
   b) To enable the students to have an understanding of an economic problems in the society.

Semester – V

DSC 1 (E)HECO-351 Indian Social Problems and Policies

Chapter – 1 Social Problems and Social Disorganization **20 Lectures**

a) Social Problems -

b) Meaning and Definition of Social Problems

c) Characteristics of Social Problems

d) Causes of Social Problems

e) Fallacies about Social Problems

f) Measures to Eradicate Social Problems

1.2 Social Disorganisation

a) Meaning and Definition of Social Disorganisation

b) Symptoms of Social Disorganisation

c) Causes of Social Disorganisation

d) Forms of Social Disorganisation

e) Current Issues in Indian Society

Chapter – 2 Family Disorganisation, Family Tension and Domestic Violence **20 Lectures**

2.1 Family Disorganisation

a) Meaning and Nature of Family Disorganisation

b) Causes of Family Disorganisation

c) Evil effects of Family Disorganisation

2.2 Family Tension

a) Meaning and definition of Family Tension

b) Symptoms and Types of Family Tension

c) Individual causes of Family Tension

d) Social and Cultural causes of Family Tension

2.3 Domestic Violence

a) Meaning of Domestic Violence

b) Nature of Domestic Violence

c) Causes of Domestic Violence

Chapter – 3 Dowry, Divorce and Violence against women **20 Lecture**

3.1 Dowry System

a) Meaning and definition of Dowry System

b) Causes of Dowry System

c) Effects of Dowry System

d) Measures to eradicate the effects of Dowry System

3.2 Divorce

a) Meaning and Causes of Divorce

b) Effects of Divorce

c) Measures to solve Divorce Problem

3.3 Violence against women

a) Meaning and Nature of Violence against women

b) Classification of Violence against women

c) Causes of Violence against women

Semester VI

DSC -1 (F) HECO- 361 Indian Economic Problems & Policies

Chapter – 1 Problems of Population and Population Education **20 Lectures**

1.1 Problems of Population

1.1.1 Size and Growth of Indian Population

1.1.2 Characteristics of Indian Population

1.1.3 Population Explosion

1.1.4 Causes of Population Explosion

1.1.5 Consequences of Population Growth

1.1.6 Remedies for Controlling Population Growth

1.2 Population Education

1.2.1 Meaning of Population Education

1.2.2 Objectives Population Education

1.2.3 Scope of Population Education

1.2.4 Importance of Population Education

Chapter -2 Poverty and Unemployment **20 Lectures**

2.1 Poverty in India

2.1.1 Meaning and Definition of Poverty

2.1.2 Concepts of Poverty – Relative Poverty and Absolute Poverty

2.1.3 Causes of Poverty in India

2.1.4 Evil Consequences of Poverty

2.1.5 Measures of Poverty alleviation

2.2 Unemployment in India

2.2.1 Meaning and Definition of Unemployment

2.2.2 Causes of Unemployment

2.2.3 Types of Unemployment

2.2.4 Effects of Unemployment

2.2.5 Measures to remove Unemployment

Chapter – 3 Corruption, Black Money and Income Inequalities **20 Lectures**

3.1 Corruption

3.1.1 Meaning and Causes of Corruption

3.1.2 Fields of Corruption

3.1.3 Measures to control Corruption

3.2 Black Money

3.2.1 Meaning and Causes of generating Black Money

3.2.2 Effects of Black Money

3.2.3 Measures to control Black Money

3.3. Income Inequalities in India

3.3.1 Nature of Income Inequalities

3.3.2 Causes of Income Inequalities

3.3.3 Effects of Income Inequalities

3.3.4 Measures to solve the problem of Income Inequalities in India

Reference Books :-

1. Datta and sundurum, Indian Economy (2012), S.Chand and Company Ltd New Delhi.
2. Mishra and Puri, Indian Economy (2012), Himalaya Publishing House, Mumbai
3. Ram Ahuja- Social Problems in India., Rawat Publications- Jaipur & New Delhi.
4. C.B.Memoria- Social Problems and Social organisation in India.
5. G.R.Madan- Indian Social Problems, Part-1 & Part-2
6. Dr.Kulkarni and Dr.Shrivastav-LoksankhyaShastra Ani Loksankhya Shikshan
7. Manik Mane- Bhartatil Samkalin Samasya.
8. Bharat Vinayak Chavan- Bhartiya Samajik Samasya.
9. Dr.Ambadas Madgulkar- Bhartiya Samajik Samasya.
10. Dr.Pradip Aaglave- Adhunik Bhartatil Samajik Samasya.
11. P.K.Kulkarni- Bhartatil Samajik Samasya.
12. Dr.Jagtap, Dr.Wani, Dr.Jangle, Dr.Patil- Bhartiya ArthavyavasthaEk
13. Dr. N. L. Chavan – Bhartacha Aarthik Vikas- Part – 1
14. Dr. N. L. Chavan – Bhartiy Arthvyavastha - Part – 1
15. Prof. D. L. Torwane & Prof. Jayashri Mahajan – Bhartiya Samaj (Prashna Ani Samajik Samasya).

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।। अंतरी पेटवू ज्ञानज्योत ।।

कवयित्री बहिणाबाई चौधरी
उत्तर महाराष्ट्र विश्वविद्यालय, जलगाँव

मानविकी विद्याशाखा

Choice Based Credit System
रूचि आधारित साख पध्दति पाठ्यक्रम

बी. ए. तृतीय वर्ष कला - हिंदी

पंचम एवं षष्ठ सत्र
(V & VI Semester)

(w. e. f. June 2020)

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विश्वविद्यालय, जलगाँव

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रूचि आधारित साख पद्धति

पंचम सत्र (V Semester)

Course Code	Course Type	Title of the Course	Credits	Contact Hours / per semester
MIL III Hindi	Discipline Specific Core Course (DSC)	संपादन लेखन और साहित्य (मुद्रित माध्यम)	03	45
DSC- E (A) Hindi	Discipline Specific Core Course (DSC)	विशेष विधा : यात्रा साहित्य	03	45
	OR			
DSC- E (B) Hindi	Discipline Specific Core Course (DSC)	प्रयोजनमूलक हिंदी	03	45
SEC-III Hindi	Skill Enhancement Course (SEC)	हिंदी व्याकरण तथा अभिव्यक्ति कौशल	02	30
DSE-III (A) Hindi	Discipline Specific Elective Courses (DSE)	हिंदी साहित्य का इतिहास (आदिकाल, भक्तिकाल और रीतिकाल)	03	45
DSE-IV (A) Hindi	Discipline Specific Elective Courses (DSE)	हिंदी भाषा का विकास	03	45
GE-I (A) HINDI	Generic Elective (G.E)	हिंदी की राष्ट्रीय काव्यधारा	03	45

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रूचि आधारित साख पद्धति

षष्ठ सत्र (VI Semester)

Course Code	Course Type	Title of the Course	Credits	Contact Hours / per semester
MIL IV HINDI	Discipline Specific Core Course (DSC)	हिंदी सिनेमा और साहित्य : (इलेक्ट्रॉनिक माध्यम)	03	45
DSC- F (A) Hindi	Discipline Specific Core Course (DSC)	विशेष विधा : भारतीय संत काव्य	03	45
	OR	वैकल्पिक पाठ्यक्रम		
DSC- F (B) Hindi	Discipline Specific Core Course (DSC)	प्रयोजनमूलक हिंदी	03	45
SEC-IV Hindi	Skill Enhancement Course (SEC)	हिंदी भाषा का मानकीकरण और अशुद्धि शोधन	02	30
DSE-III (B) Hindi	Discipline Specific Elective Courses (DSE)	हिंदी साहित्य का इतिहास (आधुनिक काल)	03	45
DSE-IV (B) Hindi	Discipline Specific Elective Courses (DSE)	भाषा विज्ञान	03	45
GE-I (B) HINDI	Generic Elective (G.E)	खानदेश का लोक साहित्य	03	45

सूचनाएँ :-

- AEC - English Communication यह अनिवार्य पाठ्यक्रम है। तृतीय वर्ष में प्रवेशित प्रत्येक छात्र के लिए यह पाठ्यक्रम पढ़ना अनिवार्य हैं।
- एमआयएल (MIL) यह पाठ्यक्रम भी अनिवार्य है। तृतीय वर्ष में प्रवेशित मानव विज्ञान विद्याशाखा के छात्र अपने महाविद्यालय में उपलब्ध मराठी, हिंदी, संस्कृत, पाली, अर्धमागधी, उर्दू इन भाषाओं में से किसी एक भाषा के पाठ्यक्रम का चयन कर सकते हैं।
- DSC : इसके अंतर्गत छात्रों को तीन विषयों का चयन करना है। हिंदी विषय में रूचि एवं आस्था रखने वाले छात्र इन तीन में से एक पाठ्यक्रम हिंदी का ले सकते हैं। कुछ महाविद्यालयों में इसके विकल्प में छात्र प्रयोजनमूलक हिंदी का भी अध्ययन करते है वहाँ के छात्र इन दोनों में से किसी एक विकल्प का चयन कर सकते हैं।
- SEC : इसके अंतर्गत महाविद्यालय में उपलब्ध किसी भी एक विषय का चयन करना अनिवार्य हैं।
- GE : इसके अंतर्गत भी छात्रों को महाविद्यालय में उपलब्ध किन्हीं दो विषयों का चयन करना अनिवार्य हैं।

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MIL III - HINDI : संपादन लेखन और साहित्य (मुद्रित माध्यम)

✦ पाठ्यक्रम का उद्देश्य :-

- छात्रों को संपादकीय कला से अवगत कराना।
- संपादक की योग्यता, दायित्व और महत्त्व से परिचित करना।
- संपादकीय लेखन के तत्त्व और प्रविधि को दर्शाना।
- विभिन्न समाचार पत्र और पत्रिकाओं के उल्लेखनीय संपादकीय से परिचित करवाना।

पाठ्यक्रम का स्वरूप

इकाई I : संपादन

1) संपादन : अवधारणा, उद्देश्य और आधारभूत तत्त्व।
2) संपादन : निष्पक्षता और सामाजिक संदर्भ।
3) संपादन कला के सामान्य सिध्दांत।

इकाई II : संपादक :

1) संपादक : योग्यता, दायित्व और महत्त्व।
2) संपादकीय लेखन के प्रमुख तत्त्व।
3) संपादकीय लेखन की प्रविधि।

इकाई III : उल्लेखनीय संपादकीय :

अ) प्रमुख हिंदी समाचार-पत्रों के उल्लेखनीय संपादकीय :-

1) दै. नई दुनिया, दि. 15 अगस्त 2016, संपादकीय - `विश्व में हिंदी का निरंतर विस्तार`।
2) दै. नवभारत टाइम्स, दि. 25 अप्रैल 2019, संपादकीय - `वातावरण और विकास`।
3) दै. राष्ट्रीय जागरण, दि. 8 सितम्बर 2019, संपादकीय - `हम होंगे कामयाब`।

4) दै. अमर उजाला, दि. 20 नवम्बर 2019, संपादकीय - `दूरसंचार क्षेत्र में हलचल`।

5) दै. भास्कर, दि. 3 जनवरी 2020, संपादकीय - `उम्मीदवारी का फार्मूला`।

6) दै. जनसत्ता, दि. 23 मई 2020, संपादकीय - `जीवट का सफर`।

आ) प्रमुख हिंदी पत्रिकाओं के उल्लेखनीय संपादकीय :-

1) आलोचना त्रैमासिक 49, सहस्राब्दी अंक उनचास, अप्रैल-जून 2013, संपादकीय - `रचने की न्यूनतम अर्हता` संपादक - अरूण कमल।

2) नया ज्ञानोदय, अंक 62, अप्रैल 2008 (भारतीय ज्ञानपीठ की मासिक पत्रिका), संपादकीय - `दस्तख़त` संपादक - रवींद्र कालिया।

3) बहुवचन, हिंदी की अंतर्राष्ट्रीय त्रैमासिक पत्रिका, अंक 37, अप्रैल-जून 2013, संपादकीय - आरंभिक - `दूसरे समय में कहानी`, संपादक - अशोक मिश्र।

4) सामयिक सरस्वती - शब्दों का उत्सव, वर्ष 4, अंक 13-14 (थर्ड जेंडर विशेषांक) (सामयिक प्रकाशन का त्रैमासिक), संपादकीय - जारी है अस्तित्व की लड़ाई, संपादक - शरद सिंह।

5) जनपथ, जून-जुलाई 2011, संपादकीय - पहली हराई - `कुछ और सामान की तलाश`, संपादक - अतिथि संपादक - राजकुमार राकेश।

6) वागर्थ, अंक 24, मार्च 1997, संपादकीय - `सिर्फ शोकगीत नहीं`, संपादक - प्रभाकर श्रोतिय।

पाठ्यक्रम की उपलब्धियाँ :

- छात्र संपादकीय कला से अवगत होंगे।
- छात्र संपादक की योग्यता, दायित्व और महत्त्व से परिचित होंगे।
- छात्रों को संपादकीय लेखन के तत्त्व और प्रविधि का ज्ञान प्राप्त होगा।
- विभिन्न समाचार-पत्र और पत्रिकाओं के संपादकीय से छात्रों का परिचय होगा।

संदर्भ सूची :-

1) प्रयोजनमूलक हिंदी और पत्रकारिता - दिनेश प्रसाद सिंह, वाणी प्रकाशन, नई दिल्ली
2) आधुनिक पत्रकारिता के विविध आयाम - डॉ. बी. आर बारड / डॉ. डी. एम. दोमडिया, रावत प्रकाशन, नई दिल्ली
3) समाचार संपादन - रामशरण जोशी, राधाकृष्ण प्रकाशन, दिल्ली
4) भारतीय पत्रकारिता - नए दौर : नए प्रतिमान - संतोष, राधाकृष्ण प्रकाशन, नई दिल्ली
5) खेल पत्रकारिता, सुशील दोषी, राजकमल प्रकाशन प्रा. लि., नई दिल्ली
6) समाचार संपादन, कमल दीक्षित, महेश दर्पण, राजकमल प्रकाशन प्रा. लि., नई दिल्ली
7) समाचार-पत्र प्रबंधन, गुलाब कोठारी, राजकमल प्रकाशन प्रा. लि., नई दिल्ली

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(इस पाठ्यक्रम के विकल्प में छात्र DSC E Hindi (B) इस पाठ्यक्रम का चयन कर सकते हैं।)

✦ पाठ्यक्रम का उद्देश्य :-

- यात्रा साहित्य विधा के सैद्धांतिक विवेचन से छात्रों को अवगत कराना।
- यात्रा साहित्य विधा के विकासात्मक परिचय से छात्रों को परिचित कराना।
- यात्रा साहित्य विधा के प्रमुख साहित्यकार तथा उनके यात्रा वर्णन का ज्ञान छात्रों को प्रदान करना।
- `मेरी जापान यात्रा` इस साहित्य कृति के माध्यम से छात्रों में यात्रा साहित्य लेखन की कला से परिचित कराना।

पाठ्यक्रम का स्वरूप

इकाई 1 : **यात्रा साहित्य विधा** : **सैद्धांतिक विवेचन**

1) शाब्दिक अर्थ, परिभाषा, तत्त्व, प्रकार।
2) यात्रा साहित्य का प्रयोजन, महत्त्व एवं प्रमुख विशेषताएँ।
3) यात्रा साहित्य विधा का अन्य विधाओं से परस्पर संबंध।

इकाई 2 : **यात्रा साहित्य विधा का विकासात्मक अध्ययन**

1) भारतेन्दु पूर्व युग तथा भारतेन्दू युग।
2) द्विवेदी युग तथा छायावादी युग।
3) छायावादोत्तर युग / स्वातंत्र्योत्तर युग तथा समकालीन यात्रा साहित्य।
4) यात्रा साहित्य के प्रमुख साहित्यकारों तथा उनके यात्रा वर्णनों का सामान्य परिचय।

इकाई 3 : **साहित्य कृति** :

`**मेरी जापान यात्रा**` - **राष्ट्रसंत तुकडोजी महाराज**, श्री गुरुदेव प्रकाशन, गुरूकुंज आश्रम,
तहसील-तिवसा, जिला - अमरावती

i) राष्ट्रसंत तुकडोजी महाराज : जीवन एवं रचना परिचय
ii) `मेरी जापान यात्रा` इस साहित्य कृति का तात्त्विक विवेचन एवं विश्लेषण।
iii) `मेरी जापान यात्रा` इस साहित्यिक कृति का आशय, विषय एवं प्रमुख उद्देश्य।
iv) `मेरी जापान यात्रा` में चित्रित यथार्थता तथा प्रत्यक्ष अनुभव कथन।
v) `मेरी जापान यात्रा` इस साहित्य कृति की कलात्मकता तथा पात्र एवं चरित्रांकन।
vi) `मेरी जापान यात्रा` में चित्रित परिवेशगत चित्रण तथा सांस्कृतिक आदान-प्रदान।
vii) `मेरी जापान यात्रा` इस साहित्य कृति की प्रासंगिकता एवं महत्त्व।
viii) `मेरी जापान यात्रा` इस साहित्य कृति की प्रमुख विशेषताएँ।
ix) `मेरी जापान यात्रा` इस साहित्य कृति का शिल्पगत अध्ययन एवं विश्लेषण।

✦ पाठ्यक्रम की उपलब्धियाँ :-

- इस पाठ्यक्रम को पढ़ने के उपरांत छात्रों को यात्रा साहित्य विधा का सैद्धांतिक ज्ञान प्राप्त हो जाएगा।
- पाठ्यक्रम को पढ़ने के उपरांत छात्र को यात्रा साहित्य विधा का विकासात्मक परिचय प्राप्त हो जाएगा।
- पठित साहित्य कृति के माध्यम से छात्र यात्रा साहित्य लेखन की कला को आत्मसात करेंगे।

✦ संदर्भ ग्रंथ -

1) हिंदी यात्रा साहित्य और स्त्री यात्रा साहित्यकार - डॉ. बळीराम धापसे, कीर्ति प्रकाशन, 17, रचनाकार कॉलनी, देवगिरी कॉलेज के पास, औरंगाबाद - 431005
2) हिंदी का यात्रा साहित्य - रेखा उप्रेती, हिंदी बुक सेंटर, आसफ अली रोड, नई दिल्ली- 02
3) यात्रा साहित्य : परिवेश एवं परिप्रेक्ष्य - प्रकाश मोकाशी, युनिवर्सिटी बुक हाऊस (प्रा.) लि., जयपूर - 03
4) राहुल सांकृत्यायन : घुमक्कड शास्त्र और यात्रावृत्त - जानकी पांडेय, ज्ञानभारती, रूपनगर, दिल्ली-02
5) हिंदी का आधुनिक यात्रा साहित्य - प्रतापलाल शर्मा, अमर प्रकाशन, सदर बाजार, मथुरा-01
6) हिंदी का स्वातंत्र्यप्राप्युत्तर यात्रा साहित्य - हरेश स्वामी, अन्नपूर्णा प्रकाशन, साकेत नगर, कानपुर-04

7) यात्रा साहित्य का उद्‌भव और विकास - सुरेन्द्र माथुर, साहित्य प्रकाशन, मालीवाडा, दिल्ली
8) साहित्य में गद्य की नई विविध विधाएँ - कैलाशचंद्र भाटिया, तक्षशिला प्रकाशन, दरियागंज, नई दिल्ली-02
9) हिंदी यात्रा साहित्य स्वरूप और विकास - मुरारीलाल शर्मा, क्लासिकल पब्लिशिंग कंपनी, नई दिल्ली - 15
10) हिंदी विधाएँ : स्वरूपात्मक अध्ययन - वैजनाथ सिंहल, हरियाणा साहित्य अकादमी, चण्डीगढ़
11) राष्ट्रसंत तुकडोजी महाराज के काव्य में सामाजिक चेतना - डॉ. पंढरीनाथ शिवदास पाटील

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DSC E (B) HINDI प्रयोजनमूलक हिंदी

(इस पाठ्यक्रम के विकल्प में छात्र DSC E Hindi (A) इस पाठ्यक्रम का चयन कर सकते हैं।)

✦ पाठ्यक्रम का उद्देश्य :-

- कार्यालयी भाषा हिंदी से छात्रों को अवगत कराना।
- कम्प्यूटर और हिंदी भाषा प्रयोग तथा कम्प्यूटर और रोजगार से छात्रों को अवगत कराना।
- टिप्पण के स्वरूप, उद्देश्य, प्रक्रिया तथा टिप्पणी के तत्व एवं नियमों से छात्रों को अवगत कराना।
- कार्यक्रम पत्रिका, कार्यालयी पत्रिका विवरण, कार्यवृत्त, रिपोर्ट, सचिव के कार्य, पदनाम लेखन, टेबल पट्ट, सूचना पट्ट आदि से छात्रों को परिचित कराना।
- कार्यालयी हिंदी क्रियान्वयन योजना से छात्रों को परिचित कराना।

पाठ्यक्रम का स्वरूप

इकाई I : कार्यालयी भाषा हिंदी तथा कम्प्युटर :

अ) कार्यालयी भाषा हिंदी : स्वरूप, विशेषताएँ, कार्यालयी भाषा के रूप में हिंदी का विकास, हिंदी के प्रयोग का सांविधानिक प्रावधान, राष्ट्रपति के आदेशों का सामान्य परिचय, हिंदी प्रयोग की समस्याएँ।

आ) कम्प्यूटर : परिचय एवं महत्त्व, कम्प्यूटर और हिंदी भाषा प्रयोग, हिंदी की प्रमुख वेबसाईट्स, विभिन्न क्षेत्रों में कम्प्यूटर का योगदान, शिक्षा क्षेत्र में कम्प्यूटर, बैंकों में कम्प्यूटर, कम्प्यूटर और रोजगार।

इकाई II : टिप्पण तथा कार्यालयी कार्यसूची :-

अ) टिप्पण (Noting) : स्वरूप, उद्देश्य, प्रकार, प्रक्रिया, टिप्पणी के तत्त्व एवं नियमों की जानकारी।

आ) कार्यालयी कार्यसूची : कार्यक्रम पत्रिका (अजेंडा), कार्यालयी पत्रिका विवरण, कार्यवृत्त, बैठक की रिपोर्ट, सचिव के कार्य, पदनाम लेखन, टेबल पट्ट, सूचना पट्ट लेखन की आवश्यकता।

इकाई III : **कार्यालयी हिंदी क्रियान्वयन योजना** :

अ) हिंदी प्रशिक्षण कार्यक्रम, परीक्षा, पाठ्यक्रम, पारिभाषिक शब्दावली एवं शब्दकोश निर्माण, संगणक की दृष्टि से देवनागरी लिपि का महत्त्व।

आ) केंद्रीय हिंदी निदेशालय, केंद्रीय हिंदी संस्थान आगरा, सूचना एवं तकनीकी शब्दावली आयोग तथा केंद्रीय अनुवाद ब्यूरो का परिचय।

पाठ्यक्रम की उपलब्धियाँ :

- कार्यालयी भाषा हिंदी का विस्तृत ज्ञान छात्रों को नौकरी अथवा रोजगार के रूप में लाभदायी सिध्द होगा।
- कम्प्यूटर का परिचय एवं महत्व तथा कम्प्यूटर और हिंदी भाषा का प्रयोग आदि के अध्ययन से रोजगार के अवसर उपलब्ध होंगे।
- सरकारी कार्यालयों में प्रयुक्त टिप्पण का स्वरूप, महत्व, नियमों की जानकारी नौकरी में लाभदायी सिध्द होगी।
- कार्यक्रम पत्रिका (अजेंडा), कार्यवृत्त, बैठक की रिपोर्ट, सचिव के कार्य आदि का अध्ययन प्रशासकीय परीक्षाओं में फलदायी होगा।
- कार्यालयी हिंदी क्रियान्वयन योजना का ज्ञान प्राप्त कर छात्रों को रोजगार के अवसर उपलब्ध होंगे।

✦ **संदर्भ ग्रंथ** -

1) हिंदी भाषा का प्रयोजनमूलक स्वरूप - डॉ. कैलासचंद्र भाटिया, साहित्य भवन प्रा. लि. इलाहाबाद
2) जनसंचार माध्यमों में हिंदी - डॉ. चंद्रकुमार, क्लासिक पब्लिकेशन, नई दिल्ली
3) प्रयोजनमूलक हिंदी - डॉ. विजयपाल सिंह, संजय बुक सेंटर, वाराणसी
4) हिंदी के प्रयोजनमूलक भाषा रूप - डॉ. माधव सोनटक्के, छाया पब्लिशिंग हाऊस, औरंगाबाद
5) प्रयोजनमूलक हिंदी (भाग 2, 3) - डॉ. उर्मिला पाटील, अतुल प्रकाशन, कानपुर
6) व्यावसायिक संप्रेषण - डॉ. अनूपचंद्र भयाणी, राजपाल ॲण्ड सन्स, दिल्ली
7) प्रयोजनमूलक हिंदी : सिध्दांत एवं प्रयोग - डॉ. दंगल झाल्टे, वाणी प्रकाशन, दिल्ली
8) देवनागरी विकास परिवर्तन और मानकीकरण - केंद्रीय हिंदी निदेशालय, नई दिल्ली

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SEC III - HINDI : हिंदी व्याकरण तथा अभिव्यक्ति कौशल

✦ **पाठ्यक्रम का उद्देश्य** :-

- छात्रों को हिंदी भाषा की व्याकरणिक संरचना से अवगत कराना।
- छात्रों को हिंदी शब्द संसाधन से परिचित कराना।
- छात्रों को संक्षेपण करने की प्रक्रिया से अवगत कराना।
- छात्रों को पल्लवन करने की प्रक्रिया से अवगत कराना।
- वक्तृत्व कला-कौशल की जानकारी से छात्रों को परिचित कराना।
- वाद-विवाद कला-कौशल की जानकारी से छात्रों को परिचित कराना।

पाठ्यक्रम का स्वरूप

इकाई I : शब्द भेद तथा शब्द संसाधन :-

अ) शब्द भेद :- **विकारी और अविकारी**

1) **विकारी शब्द** : संज्ञा, सर्वनाम, विशेषण एवं क्रिया आदि का सामान्य परिचय एवं प्रकार (भेद)।

2) **अविकारी शब्द (अव्यय)** : क्रियाविशेषण अव्यय, संबंधसूचक अव्यय, समुच्चयबोधक अव्यय एवं विस्मयादिबोधक अव्यय आदि का सामान्य परिचय एवं प्रकार (भेद)।

आ) शब्द-संसाधन :-

i) पर्यायवाची शब्द ii) विलोम शब्द iii) अनेक शब्दों के लिए एक शब्द

इकाई II : अभिव्यक्ति कौशल : मौखिक तथा लिखित :-

अ) मौखिक अभिव्यक्ति कौशल :-

i) **वक्तृत्व** : वक्तृत्व शब्द का अर्थ, वक्तृत्व कला एवं शास्त्र, वक्तृत्व के तत्त्व, वक्तृत्व का महत्त्व, वक्तृत्व प्रतियोगिता के नियम, उत्तम वक्ता की विशेषताएँ।

ii) **वाद-विवाद** : वाद-विवाद से तात्पर्य, वाद-विवाद के रूप (संसदीय वाद-विवाद, मेस वाद-विवाद, सार्वजनिक वाद-विवाद, प्रतियोगितात्मक वाद-विवाद, हास्य वाद-विवाद), वाद-विवाद प्रतियोगिता के सामान्य नियम।

आ) लिखित अभिव्यक्ति कौशल :-

i) **संक्षेपण (सारलेखन)** :- संक्षेपण का महत्त्व, संक्षेपण की विशेषताएँ, संक्षेपण की प्रक्रिया, संक्षेपण-लेखन।

ii) **पल्लवन** :- पल्लवन का महत्त्व, पल्लवन की विशेषताएँ, पल्लवन की प्रक्रिया, पल्लवन-लेखन।

पाठ्यक्रम की उपलब्धियाँ :-

- व्याकरण के कारण हिंदी भाषा के मानक रूप को समझा जाएगा।
- हिंदी भाषा की संरचनात्मक ढाँचे की समझ छात्रों में आएगी।
- हिंदी भाषा का शुद्ध-लेखन करने की क्षमता विकसित होगी।
- पत्रकारिता, प्रकाशन विभाग, पटकथा लेखन आदि व्यावसायिक क्षेत्र में रोजगार के अवसर प्राप्त होंगे।
- स्पर्धात्मक परीक्षा में (लिखित और मौखिकी) इसकी उपयोगिता सिध्द होगी।
- अभिव्यक्ति कौशल की क्षमता विकसित होगी।
- शब्द-संसाधन के माध्यम से भाषा का शब्द-भंडार बढ़ेगा।

संदर्भ ग्रंथ :-

1) हिंदी व्याकरण - पं. कामताप्रसाद गुरू, प्रकाशन संस्थान, नयी दिल्ली।

2) सुबोध हिंदी व्याकरण एवं रचना - डॉ. वीरेन्द्रकुमार गुप्ता, एस. चाँद ॲण्ड कंपनी, दिल्ली।

3) आधुनिक हिंदी व्याकरण और रचना - डॉ. वासुदेवनंदन प्रसाद, भारती भवन, इलाहाबाद।

4) मानक हिंदी व्याकरण - डॉ. लक्ष्मीकांत पाण्डेय, विद्या प्रकाशन, कानपुर

5) प्रयोजनमूलक हिंदी भाग 1 - डॉ. उर्मिला पाटील, अतुल प्रकाशन, कानपुर

6) प्रयोजनमूलक हिंदी व्याकरण - डॉ. द्विजराम यादव, साहित्य रत्नाकर, कानपुर

7) प्रयोजनमूलक मानक हिंदी - ओंकारनाथ वर्मा, सुलभ प्रकाशन, लखनऊ

8) शुद्ध हिंदी - डॉ. जगदीशप्रसाद कौशिक, साहित्यागार प्रकाशन, जयपुर

9) व्यावहारिक हिंदी - डॉ. ईश्वरदत्त शील, विद्या विहार प्रकाशन, कानपुर

10) प्रयोजनमूलक हिंदी - डॉ. पुरूषोत्तम वाजपेयी, चन्द्रलोक प्रकाशन, कानपुर

11) प्रायोगिक व्याकरण एवं पत्रलेखन - डॉ. शिवाकान्त गोस्वामी, विद्या प्रकाशन, कानपुर

12) वाद-विवाद प्रतियोगिता : पक्ष और विपक्ष - डॉ. गिरिराजशरण अग्रवाल, डॉ. मीना अग्रवाल, डायमंड बुक्स, दिल्ली

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पाठ्यक्रम का स्वरूप

✦ **पाठ्यक्रम का उद्देश्य** :-

- हिंदी साहित्य का काल विभाजन तथा नामकरण से छात्रों को अवगत कराना।
- आदिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों तथा प्रमुख रचनाकारों की रचनाओं से छात्रों को परिचित कराना।
- भक्तिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों तथा प्रमुख रचनाकारों की रचनाकारों से छात्रों को परिचित कराना।
- रीतिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों तथा प्रमुख रचनाकारों की रचनाओं से छात्रों को परिचित कराना।

इकाई I : **हिंदी साहित्य का काल विभाजन, नामकरण तथा आदिकालीन साहित्य** :-

अ) हिंदी साहित्य का काल विभाजन एवं नामकरण :-

i) हिंदी साहित्य का काल विभाजन एवं नामकरण।

ii) आदिकालीन साहित्य की पृष्ठभूमि : राजनीतिक, सामाजिक, धार्मिक तथा साहित्यिक।

iii) आदिकालीन काव्य की प्रमुख प्रवृत्तियाँ।

iv) रासो साहित्य का संक्षिप्त परिचय।

v) विद्यापति एवं गोरखनाथ का साहित्यिक परिचय।

vi) निम्नलिखित काव्यकृतियों का संक्षिप्त अध्ययन :

- पृथ्वीराज रासो - चंदबरदाई
- पहेलियाँ, मुकरियाँ - अमीर खुसरो

इकाई II : **भक्तिकाल** : **सामान्य परिचय** :-

i) पृष्ठभूमि - राजनीतिक, सामाजिक, धार्मिक तथा साहित्यिक।

ii) निम्नलिखित प्रमुख काव्यधाराओं तथा उनसे संबंधित प्रमुख कवियों का परिचय :

- ज्ञानाश्रयी शाखा - कबीर
- प्रेमाश्रयी शाखा - जायसी
- रामभक्ति शाखा - तुलसीदास
- कृष्णभक्ति शाखा - सूरदास
- निम्नलिखित काव्यकृतियों का संक्षिप्त परिचय।
    1) पद्मावत - जायसी
    2) विनय पत्रिका - तुलसीदास

इकाई III : **रीतिकाल** : **सामान्य परिचय** :-

i) पृष्ठभूमि - राजनीतिक, सामाजिक, धार्मिक, तथा साहित्यिक।

ii) रीतिकालीन काव्य की प्रमुख प्रवृत्तियाँ।

iii) कवि परिचय - बिहारी, घनानंद, केशवदास एवं भूषण का परिचय।

iv) निम्नलिखित काव्य कृतियों का संक्षिप्त अध्ययन।

1) कवित्त - घनानंद
2) शिवा बावनी - भूषण

✦ पाठ्यक्रम की उपलब्धियाँ :-

- हिंदी साहित्य के काल विभाजन तथा नामकरण से छात्र परिचित हो जायेंगे।
- आदिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों, तथा प्रमुख रचनाओं का ज्ञान छात्रों को प्राप्त होगा।
- भक्तिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों तथा प्रमुख रचनाकारों की रचनाओं से छात्र परिचित होंगे।

- रीतिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों तथा प्रमुख रचनाकारों की रचनाओं का ज्ञान छात्रों को मिलेगा।
- प्रस्तुत पाठ्यक्रम का अध्ययन छात्रों को सेट-नेट की परीक्षा तथा स्पर्धा परीक्षा की पूर्व तैयारी की दृष्टि से उपयोगी सिध्द होगा।

✦ संदर्भ ग्रंथ :-

1) हिंदी साहित्य का इतिहास - आचार्य रामचंद्र शुक्ल
2) हिंदी साहित्य का इतिहास - सं. डॉ. नगेंद्र
3) हिंदी साहित्य का इतिहास - डॉ. लक्ष्मीसागर वार्ष्णेय
4) हिंदी साहित्य का इतिहास - डॉ. देवीशरण रस्तोगी
5) हिंदी साहित्य का इतिहास - डॉ. सज्जनराम केणी
6) हिंदी साहित्य का इतिहास - डॉ. रमेशचंद्र शर्मा
7) हिंदी साहित्य युग और प्रवृत्तियाँ - शिवकुमार शर्मा

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रूचि आधारित (CBCS) पाठ्यक्रम
DSE-IV (A) HINDI हिंदी भाषा का विकास

पाठ्यक्रम का स्वरूप

✦ **पाठ्यक्रम का उद्देश्य** :-

- भाषा की परिभाषाओं तथा विशेषताओं से छात्रों को अवगत कराना।
- भाषा के विविध रूपों का ज्ञान छात्रों को प्रदान करना।
- विविध बोलियों के सामान्य परिचय से छात्रों को परिचित कराना।
- भाषा के व्युत्पत्ति विषय सिध्दांत से छात्रों को परिचित कराना।
- हिंदी के प्रचार एवं प्रसार में खान्देश के साहित्यकारों के योगदान से छात्रों को अवगत कराना।
- हिंदी के प्रचार एवं प्रसार में विविध संस्थाओं के योगदान को उजागर करना।

इकाई I : **भाषा का सैद्धांतिक विवेचन** :-

i) भाषा की परिभाषा, स्वरूप तथा भाषा की विशेषताएँ।

ii) भाषा के विविध रूप : बोली, परिनिष्ठित भाषा, प्रादेशिक भाषा, राजभाषा तथा राष्ट्रभाषा।

iii) बोली और परिनिष्ठित भाषा तथा राजभाषा और राष्ट्रभाषा का पारस्परिक अंतर एवं संबंध।

इकाई II : **हिंदी की बोलियों का सामान्य परिचय तथा भाषा व्युत्पत्ति विषयक सिध्दांत**:-

अ) हिंदी की बोलियों का सामान्य परिचय :- ब्रज, अवधी, खड़ी बोली, भोजपुरी, दखिखनी, मारवाडी तथा मैथिली (इनके संबंध में भौगोलिक क्षेत्र, साहित्य संपदा (लिखित-मौखिक), उपबोलियाँ, प्रत्येक बोली की अपनी खास विशेषताएँ आदि बातों की जानकारी अपेक्षित)

आ) भाषा व्युत्पत्ति विषयक सिध्दांत :- दिव्योत्पत्ति सिध्दांत, धातु सिध्दांत, श्रम परिहार सिध्दांत, मनोभावाभिव्यक्ति सिध्दांत, समन्वय सिध्दांत आदि का सामान्य परिचय।

इकाई 3 : हिंदी भाषा के विकास में व्यक्तियों और संस्थाओं का योगदान :-

अ) हिंदी के प्रचार-प्रसार में खान्देश के साहित्यकारों का योगदान : -

1) डॉ. मु. ब. शहा।
2) डॉ. शंकर पुणतांबेकर।
3) डॉ. तेजपाल चौधरी।
4) डॉ. पितांबर सरोदे।
5) डॉ. विश्वास पाटील।

आ) हिंदी के प्रचार-प्रसार में सामाजिक संस्थाओं का योगदान :-

1) ईसाई मिशनरी।
2) ब्रह्म समाज।
3) थिओसॉफिकल सोसायटी।

इ) हिंदी के प्रचार-प्रसार में साहित्यिक संस्थाओं का योगदान :-

1) नागरी प्रचारिणी सभा काशी
2) हिंदी साहित्य सम्मेलन प्रयाग
3) राष्ट्रभाषा प्रचार समिति वर्धा
4) राष्ट्रभाषा प्रचार सभा पुणे
5) दक्षिण भारत प्रचार सभा, मद्रास।

✦ पाठ्यक्रम की उपलब्धियाँ :-

- भाषा की परिभाषाओं तथा विशेषताओं से छात्र परिचित होंगे।
- भाषा के विविध रूपों का ज्ञान छात्रों को प्राप्त हो जाएगा।
- भाषा की विविध बोलियों से छात्र परिचित होंगे।
- भाषा की व्युत्पत्ति विषयक सिद्धांतों से छात्र परिचित होंगे।
- हिंदी भाषा के विकास में खान्देश के योगदान से छात्र परिचित होंगे।
- भाषा के विकास में विविध संस्थाओं के योगदान से छात्र परिचित होंगे।
- सेट / नेट की तथा स्पर्धा परीक्षाओं की पूर्व तैयारी हेतु यह पाठ्यक्रम उपयोगी सिद्ध होगा।
- इस पाठ्यक्रम को पढ़ने के उपरांत छात्र भाषिक ज्ञान से परिपूर्ण बनेंगे।

✦ संदर्भ ग्रंथ -

1) भाषा विज्ञान - डॉ. भोलानाथ तिवारी
2) सामान्य भाषा विज्ञान - डॉ. बाबूराम सक्सेना
3) भाषा विज्ञान की भूमिका - डॉ. देवेंद्रनाथ शर्मा
4) भाषा विचार एवं भाषा विज्ञान - डॉ. कृष्णा पोतदार, डॉ. मधु खराटे
5) सरल भाषा विज्ञान - डॉ. पिताम्बर सरोदे, डॉ. विश्वास पाटील
6) भाषा विज्ञान एवं हिंदी भाषा - डॉ. हणमंत पाटील
7) राष्ट्रभाषा आंदोलन - श्री. गो. प. नेने
8) राष्ट्रभाषा प्रचार का इतिहास - सं. गंगाशरण सिंह
9) वैश्विकरण एवं हिंदी मानकीकरण - डॉ हणमंतराव पाटील
10) आधुनिक हिंदी व्याकरण और रचना - डॉ. वासुदेवनंदन प्रसाद
11) हिंदी राष्ट्रभाषा से विश्वभाषा की ओर - सं. डॉ. सुरेश माहेश्वरी

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GE- I (A) HINDI हिंदी की राष्ट्रीय काव्यधारा

पाठ्यक्रम का स्वरूप

पाठ्यक्रम का उद्देश्य :

- हिंदी की राष्ट्रीय काव्यधारा से छात्रों को परिचित कराना।
- हिंदी की राष्ट्रीय काव्यधारा का विकासात्मक परिचय प्रस्तुत करना।
- हिंदी की राष्ट्रीय काव्यधारा के प्रमुख कवियों सामान्य परिचय देना।
- भारतीय स्वतंत्रता आंदोलन में हिंदी की राष्ट्रीय काव्यधारा के योगदान को उजागर करना।
- पाठ्यक्रम में समावेशित कविताओं के आधार पर छात्रों में राष्ट्र के प्रति अस्मिता, स्वाभिमान तथा गौरव का भाव जागृत करना।

इकाई I : हिंदी की राष्ट्रीय काव्यधारा : सैद्धांतिक विवेचन :-

- राष्ट्रीय काव्यधारा का अर्थ, परिभाषा, स्वरूप और प्रमुख विशेषताएँ।
- हिंदी की राष्ट्रीय काव्यधारा का उद्‌भव एवं विकास।
- हिंदी राष्ट्रीय काव्यधारा के प्रमुख कवियों का जीवन एवं रचना परिचय।

इकाई II : भारतीय स्वाधीनता आंदोलन और राष्ट्रीय काव्यधारा :-

- हमारा राष्ट्र और संस्कृति।
- आधुनिक राष्ट्रीय कविता।
- द्विवेदीयुगीन राष्ट्रीय कविता।

इकाई III : संपादित साहित्य कृति :-

राष्ट्रीय काव्यधारा - डॉ. कन्हैया सिंह

वाणी प्रकाशन, नई दिल्ली, सं. 2014

उपर्युक्त संपादित साहित्य कृति में संकलित निम्न कविताएँ ही पाठ्यक्रम में सम्मिलित रहेगी :

1) मैथिलीशरण गुप्त - सिद्धराज (पंचम सर्ग)।
2) अयोध्यासिंह उपाध्याय - भव्य भारत और भारत का हित।
3) माखनलाल चतुर्वेदी - कैदी और कोकिला तथा अमर राष्ट्र।
4) बालकृष्ण शर्मा `नवीन` - भरत खंड के तुम हे जन-गण, ओ मजदूर-किसान, उठो।
5) रामधारी सिंह दिनकर - शहीद स्तवन तथा जनतंत्र का जन्म।

✦ पाठ्यक्रम की उपलब्धियाँ -

- हिंदी की राष्ट्रीय काव्यधारा से छात्र परिचित हो जायेंगे।
- हिंदी की राष्ट्रीय काव्यधारा के विकासात्मक परिचय का ज्ञान छात्रों को प्राप्त होगा।
- हिंदी की राष्ट्रीय काव्यधारा के प्रमुख कवियों के जीवन एवं रचनाओं से छात्र परिचित होंगे, जिससे उन्हें भी राष्ट्रीय कविता-लेखन की प्रेरणा मिलेगी।
- पाठ्यक्रम में समावेशित कविताओं के आधार पर छात्रों में राष्ट्र के प्रति अस्मिता, स्वाभिमान तथा गौरव का भाव जागृत हो जाएगा।

✦ संदर्भ सूची -

1) राष्ट्रीय काव्यधारा - डॉ. कन्हैया सिंह, वाणी प्रकाशन, नई दिल्ली
2) हिंदी की राष्ट्रीय काव्यधारा : एक समग्र अनुशीलन - देवराज शर्मा पथिक, इंद्रप्रस्थ प्रकाशन, दिल्ली
3) आधुनिक हिंदी काव्य में राष्ट्रीय चेतना - शुभलक्ष्मी, नचिकेता प्रकाशन
4) हिंदी काव्य की प्रवृत्तियाँ - प्रभाकर माचवे, राजकमल प्रकाशन, दिल्ली
5) हिंदी काव्य - भाषा की प्रवृत्तियाँ - भाटिया कैलाशचंद्र, तक्षशीला प्रकाशन, दिल्ली
6) छायावादोत्तर हिंदी काव्य की सामाजिक और सांस्कृतिक पृष्ठभूमि - कमला प्रसाद पांडेय, रचना प्रकाशन, दिल्ली
7) हमारे कवि : हिंदी के बत्तीस प्रमुख प्राचीन और नवीन कवियों के जीवन और काव्य की आलोचना - गुरा राजेंद्रसिन्हा, साहित्य भवन,दिल्ली

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MIL IV - HINDI : सिनेमा और साहित्य : (ईलेक्ट्रॉनिक माध्यम)

✦ **पाठ्यक्रम का उद्देश्य** :-

- छात्रों को हिंदी सिनेमा के इतिहास से अवगत कराना।
- सिनेमा और भारतीय समाज के संबंध का परिचय देना।
- हिंदी सिनेमा के तकनीकी पक्ष से परिचित कराना।
- साहित्यकृति पर आधारित सिनेमा से परिचित करवाना।
- `मोहनदास` की कहानी के माध्यम से सामाजिक यथार्थ को दर्शाना।

पाठ्यक्रम का स्वरूप

इकाई I : प्रारंभिक सिनेमा का संक्षिप्त इतिहास

1) प्रारंभिक दौर का हिंदी सिनेमा।
2) स्वतंत्रता आंदोलन और हिंदी सिनेमा।
3) हिंदी सिनेमा में भारतीय समाज का यथार्थ।

इकाई II : हिंदी सिनेमा का तकनीकी पक्ष

1) फिल्म निर्माण की प्रक्रिया।
2) सिनेमा की पटकथा - अर्थ, परिभाषा, स्वरूप, पटकथा लेखन की प्रक्रिया।
3) सिनेमा के संवाद - अर्थ, स्वरूप, संवाद लेखन की प्रक्रिया, भाषा-शैली।

इकाई III : `उदय प्रकाश` द्वारा लिखित `मोहनदास` इस लंबी कहानी पर बनी फिल्म `मोहनदास` का समीक्षात्मक अध्ययन।

1) कथा-पटकथा में अंतर।
2) कहानी के पात्र एवं फिल्म के पात्र में आया परिवर्तन।
3) संवाद, भाषा-शैली में आया परिवर्तन।

पाठ्यपुस्तक - **मोहनदास**

लेखक - उदय प्रकाश

प्रकाशक - वाणी प्रकाशन, नई दिल्ली

Film Link : https://youtu.be/30zN6PWMJ5I

निर्देशक - मज़हर कामरान

निर्मिति - वर्तिका फिल्म प्रा. लि.

कथा-पटकथा संवाद - उदय प्रकाश

पाठ्यक्रम की उपलब्धियाँ :

- छात्र हिंदी सिनेमा की ऐतिहासिकता से अवगत होंगे।
- छात्रों को हिंदी सिनेमा और भारतीय के संबंध की जानकारी प्राप्त होगी।
- छात्रों को हिंदी सिनेमा के तकनीकी पक्ष का ज्ञान प्राप्त होगा।
- `मोहनदास` साहित्यकृति पर आधारित सिनेमा से छात्रों का परिचय होगा।
- छात्रों को `मोहनदास` की कहानी के माध्यम से सामाजिक यथार्थ का परिचय होगा।

✦ संदर्भ ग्रंथ -

1) भारतीय हिंदी सिनेमा की विकास यात्रा - डॉ. देवेंद्रनाथ सिंह, डॉ. वीरेंद्र सिंह यादव, पैसिफिक पब्लिकेशन, एन-187, शिवाजी चौक, सादतपुर, एक्सटेंशन, दिल्ली-110094
2) भारतीय सिनेमा का अंत:करण - विनोद दास, मेधा बुक्स, एक्स-11, नवीन शाहदरा, दिल्ली-110032
3) साहित्य और सिनेमा : बदलते परिदृश्य में संभावनाएँ और चुनौतियाँ - संपा. डॉ. शैलजा भारद्वाज, चिंतन प्रकाशन, 3 ए /119, आवास विकास, हंसपुरम, कानपुर - 208021
4) साहित्य और सिनेमा - संपा. प्रा. पुरूषोत्तम कुंदे, साहित्य संस्थान प्रकाशन, उत्तरांचल कॉलोनी, लोनी बॉर्डर, गाजियाबाद

5) हिंदी साहित्य और फिल्मांकन - डॉ. रामदास तोंडे, लोकवाणी संस्थान, शाहदरा, दिल्ली-13
6) भारतीय सिनेमा एक अनन्त यात्रा - प्रसून सिन्हा, श्री. नटराज प्रकाशन, ए-507/12, साऊथ गांवडी, एक्सटेंशन दिल्ली-110053
7) साहित्य और सिनेमा के अंतर्संबंध - नीरा जलक्षत्रि, शिल्पायन प्रकाशन, लेन नं. 1, वेस्ट गोरख पार्क, शाहदरा, दिल्ली - 110032
8) फिल्म साहित्य और सिनेमा - विवेक दुबे, संजय प्रकाशन, 4378/ए, डी. 209, जे. एम. डी. हाऊस, अंसारी रोड, दरियागंज, नई दिल्ली 110002
9) फिल्म और फिल्मकार - डॉ. सी. भास्कर राव, कनिष्क पब्लिशर्स, डिस्ट्रीब्यूटर्स, 4697/5-21 ए, अंसारी रोड, दरियागंज, नई दिल्ली - 110002
10) पटकथा लेखन : एक परिचय - मनोहर श्याम जोशी, राजकमल प्रकाशन, नेताजी सुभाष मार्ग, नई दिल्ली - 110002
11) सिनेमा कल, आज और कल - विनोद भारद्वाज, वाणी प्रकाशन, 21-ए, दरियागंज, नई दिल्ली-110002
12) सिनेमा और संस्कृति - डॉ. राही मासूम रजा, वाणी प्रकाशन, 21-ए, दरियागंज, नई दिल्ली - 110002
13) बहुवचन, हिंदी की अंतरराष्ट्रीय त्रैमासिक पत्रिका, अंक 39 अक्टूबर-दिसंबर 2013, महात्मा गांधी अंतरराष्ट्रीय हिंदी विश्वविद्यालय, वर्धा का प्रकाशन।

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DSC - F HINDI (A) विशेष विधा : भारतीय संत काव्य

(इस पाठ्यक्रम के विकल्प में छात्र DSC F Hindi (B) इस पाठ्यक्रम का चयन कर सकते हैं।)

✦ पाठ्यक्रम का उद्देश्य :-

- भारतीय संत काव्य का परिचय कराना।
- भारतीय संत काव्य परंपरा का विकासात्मक परिचय करवाना।
- भारतीय संतों के काव्य का अध्ययन कराना।
- भारतीय संत काव्य की विशेषताओं तथा उपलब्धियों का परिचय देना।

पाठ्यक्रम का स्वरूप

इकाई I : भारतीय संत काव्य : सैद्धांतिक विवेचन :-

1) भारतीय संत काव्य की परंपरा।
2) महिला संत काव्य की परंपरा।
3) संत साहित्य की विशेषताएँ।
4) समाज के निर्माण में संतों का योगदान।
5) संत काव्य की प्रासंगिकता।

इकाई II : हिंदी अध्ययन मंडल द्वारा संपादित पाठ्यग्रंथ `भारतीय संत काव्य` में संकलित निम्न संत कवियों का जीवन एवं रचना परिचय, सामाजिक कार्य तथा प्रथम और द्वितीय क्रम पर प्रकाशित दो पद अध्ययनार्थ रखे गए हैं।

1) संत तिरूवल्लुवर - तमिलनाडु
2) संत बसवेश्वर - कर्नाटक
3) संत नामदेव - महाराष्ट्र
4) संत कबीरदास - उत्तर प्रदेश
5) संत नरसी मेहता - गुजरात
6) संत रैदास - राजस्थान

इकाई III : हिंदी अध्ययन मंडल द्वारा संपादित पाठ्यग्रंथ 'भारतीय संत काव्य' में संकलित निम्न महिला संत कवयित्रियों का जीवन एवं रचना परिचय तथा प्रथम और द्वितीय क्रम पर प्रकाशित दो पद अध्ययनार्थ रखे गए हैं।

1) संत कवयित्री अण्डाल - तमिलनाडु
2) संत कवयित्री अक्कमहादेवी- कर्नाटक
3) संत मीराँबाई - राजस्थान
4) संत लल्लेश्वरी - कश्मीर
5) संत मुक्ताबाई - महाराष्ट्र
6) संत ताजबीवी - उत्तर भारत

✦ पाठ्यक्रम की उपलब्धियाँ :-

- भारतीय संत काव्य से छात्र परिचित होंगे।
- भारत के विभिन्न राज्यों की संस्कृति, परिवेश तथा परंपराओं का ज्ञान छात्रों को प्राप्त होगा।
- भारत वर्ष के विभिन्न राज्यों के संतों का जीवन परिचय, रचना परिचय तथा संतों द्वारा किए गए सामाजिक कार्यों का ज्ञान छात्रों को प्राप्त होगा।
- पाठ्यग्रंथ में संकलित संतों तथा संत कवयित्रियों के पद पढ़कर छात्रों के मन में मूल्य संवर्धन तथा संरक्षण की प्रेरणा जगेगी।
- संतों द्वारा किए गए सामाजिक कार्य तथा लिखें गए पदों से छात्र प्रेरित एवं प्रोत्साहित होंगे।

संदर्भ :

1) हिंदी के जनपद संत - जगजीवन राम
2) भारत की महिला संत - वासंती साळवेकर
3) भारतीय नारी संत परंपरा - बलदेव वंशी
4) भक्ति के आयाम - डॉ. पी. जयरामन

5) कबीर मीमांसा - डॉ. रामचंद्र तिवारी

6) संत साहित्य की आधुनिक अवधारणाएँ - डॉ. सुनील कुलकर्णी

7) भक्तिकाल की प्रासंगिकता - डॉ. संजय शर्मा

8) भक्तिकाल के कालजयी रचनाकार - डॉ. विष्णुदास वैष्णव

9) भारतीय भक्तिसाहित्य में अभिव्यक्त सामाजिक समरसता - डॉ. सुनील कुलकर्णी

10) सामाजिक समरसता के अग्रदूत संत कवि - डॉ. सुनील कुलकर्णी

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DSC F HINDI (B) प्रयोजनमूलक हिंदी

(इस पाठ्यक्रम के विकल्प में छात्र DSC F Hindi (A) इस पाठ्यक्रम का चयन कर सकते हैं।)

✦ पाठ्यक्रम का उद्देश्य :-

- वाणिज्यिक पत्रलेखन की छात्रों को जानकारी देना।
- बैंकिंग के कार्यव्यवहार से छात्रों को अवगत कराना।
- विज्ञापन का महत्त्व एवं आवश्यकता, विज्ञापन की भाषा के रूप में हिंदी का प्रयोग आदि की छात्रों को जानकारी देना।
- शब्द संसाधन से छात्रों को परिचित कराना।
- साक्षात्कार (भेटवार्ता) की छात्रों को जानकारी देना।

पाठ्यक्रम का स्वरूप

इकाई I : वाणिज्यिक पत्रलेखन तथा बैंकिंग व्यवहार :-

अ) वाणिज्यिक पत्रलेखन : पूछताछ पत्र, आदेश पत्र, शिकायत पत्र, साख पत्र, क्षतिपूर्ति पत्र, तकादे का पत्र।

आ) बैंकिंग व्यवहार : बैंकिंग कार्यव्यवहार का ज्ञान - खाता खोलना, खाता बंद करना, बैंक में धन जमाकर्ता की नियमावली, चेक, हुंडी, ड्राफ्ट, लेखा परीक्षा (Audit) की जानकारी, विविध प्रकार के कर्ज-योजनाओं की जानकारी।

इकाई II : विज्ञापन लेखन तथा साक्षात्कार लेखन :-

अ) विज्ञापन लेखन : विज्ञापन का स्वरूप, महत्त्व एवं आवश्यकता, विज्ञापन के प्रकार विज्ञापन की भाषा के रूप में हिंदी का प्रयोग, विभिन्न माध्यमों के लिए विज्ञापन तैयार करना।

आ) साक्षात्कार लेखन : साहित्यिक, कलाकार, पुरस्कार प्राप्त व्यक्ति, स्वतंत्रता सेनानी, उद्योगपति, खिलाडी, कार्यालयीन अधिकारी। भेटवार्ता का प्रारूप।

इकाई III : **शब्द संसाधन** :-

अ) अनेक शब्दों के लिए एक शब्द

आ) समानार्थी शब्द

पाठ्यक्रम की उपलब्धियाँ :-

- छात्रों को वाणिज्यिक पत्रलेखन का ज्ञान भविष्य में व्यवसाय के दृष्टि से लाभदायी सिध्द होगा।
- व्यावहारिक बैंकिंग का विस्तृत ज्ञान छात्रों को नौकरी, व्यवसाय एवं व्यक्तिगत जीवन में फलदायी सिध्द होगा।
- विज्ञापन के सैध्दान्तिक ज्ञान और अध्ययन से रोजगार के अवसर उपलब्ध होंगे।
- साक्षात्कार (भेटवार्ता) के प्रारूप का ज्ञान भविष्य में मीडिया और प्रींट मीडिया के क्षेत्र में लाभदायी सिध्द होगा।
- छात्रों के शब्द संसाधन में वृध्दि होगी, जिसका उन्हें भविष्य में लाभ होगा।

✦ संदर्भ ग्रंथ :-

1) प्रयोजनमूलक हिंदी - विनोद गोदरे, वाणी प्रकाशन, नई दिल्ली
2) मानक हिंदी व्याकरण - डॉ. लक्ष्मीकांत पाण्डेय, विद्या प्रकाशन, कानपुर
3) आधुनिक हिंदी व्याकरण और रचना - वासुदेवनंदन प्रसाद, भारती भवन, इलाहाबाद
4) मीडिया और हिंदी - संपा. डॉ. मधु खराटे, डॉ. हणमंत पाटील, राजेंद्र सोनवणे, विद्या प्रकाशन, कानपुर
5) प्रयोजनमूलक हिंदी - डॉ. माधव सोनटक्के, लोकभारती प्रकाशन, दिल्ली
6) प्रयोजनमूलक हिंदी - डॉ. रामगोपाल सिंह, साहित्य संस्थान, गाजियाबाद
7) प्रयोजनमूलक हिंदी के अधुनातन आयाम - डॉ. अंबादास देशमुख, शैलजा प्रकाशन, कानपुर
8) व्यावहारिक हिंदी और रचना - कृष्णकुमार गोस्वामी, वाणी प्रकाशन, नई दिल्ली

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✦ **पाठ्यक्रम का उद्देश्य** :-

- हिंदी भाषा के मानक रूप से परिचय कराना।
- देवनागरी लिपि तथा हिंदी वर्तनी संबंधी नियमावली की जानकारी देना।
- शासकीय पत्र प्रारूप-लेखन की क्षमता विकसित करना।
- साक्षात्कार प्रणाली की क्षमता को विकसित करना।
- शुद्ध-लेखन की क्षमता को विकसित करना।

पाठ्यक्रम का स्वरूप

इकाई I : देवनागरी लिपि तथा हिंदी मानकीकरण के नियम :-

अ) देवनागरी लिपि :- देवनागरी लिपि का परिचय, देवनागरी लिपि के गुण-दोष, परिवर्धित देवनागरी वर्णमाला का परिचय।

आ) केंद्रीय हिंदी निदेशालय द्वारा प्रकाशित अद्यतन हिंदी मानकीकरण के नियमावली का अध्ययन :-

मानक भाषा का अर्थ एवं स्वरूप, मानक हिंदी भाषा की उपयोगिता और महत्त्व, मानक हिंदी वर्णमाला का परिचय, हिंदी वर्तनी के मानकीकरण की नियमावली का परिचय, हिंदी के विराम-चिह्नों का परिचय तथा संख्यावाचक शब्दों का लेखन

इकाई II : अशुद्धि शोध नियम, शासकीय पत्राचार प्रारूप लेखन तथा साक्षात्कार लेखन :-

अ) अशुध्दि शोधन नियम : लिंग, वचन, कारक, क्रिया आदि से संबंधित।

आ) शासकीय पत्राचार प्रारूप लेखन :- अर्ध-सरकारी पत्र, सरकारी पत्र, ज्ञापन लेखन, कार्यालयीन आदेश, परिपत्रक तथा अधिसूचना लेखन।

इ) साक्षात्कार लेखन : साक्षात्कार का अर्थ एवं परिभाषा, साक्षात्कार का महत्त्व, साक्षात्कार की विशेषताएँ, साक्षात्कारकर्ता के गुण, साक्षात्कार-लेखन।

✦ उपलब्धियाँ -

- प्रस्तुत पाठ्यक्रम से छात्रों को हिंदी का मानक रूप सीखने को मिलेगा, जिससे छात्र हिंदी लेखन और उच्चारण शुद्ध रूप में कर सकेंगे।
- यु. पी. एस. सी. परीक्षा में वैकल्पिक साहित्य विषय `हिंदी के पाठ्यक्रम में - `हिंदी भाषा और नागरी लिपि का इतिहास` एक स्वतंत्र खंड `क` समाविष्ट है। अत: प्रस्तुत पेपर के अध्ययन करने से छात्रों को UPSC परीक्षा की दृष्टि से तैयारी करने में मददगार साबित होगा।
- शुद्ध लेखन की क्षमता विकसित होने से छात्रों को - पत्रकारिता, प्रकाशन विभाग, साहित्य-लेखन आदि क्षेत्रों में रोजगार के अवसर प्राप्ति में आसानी होगी।
- शासकीय पत्राचार के विभिन्न प्रारूप-लेखन की तैयारी प्रस्तुत पाठ्यक्रम को पढ़कर हो सकेगी।
- दूरदर्शन, रेडिओ, समाचार-पत्र, पत्रिका आदि क्षेत्रों में साक्षात्कार का अत्यंत महत्त्व है। अत: साक्षात्कार प्रणाली को छात्र अवगत कर लेता है तो उसे इन क्षेत्रों में रोजगार के अवसर प्राप्त होंगे।
- प्रस्तुत पाठ्यक्रम का अध्ययन करने से छात्रों के व्यक्तित्त्व का विकास होगा।

✦ संदर्भ ग्रंथ -

1) हिंदी व्याकरण - पं. कामताप्रसाद गुरू, प्रकाशन संस्थान, नई दिल्ली।
2) मानक हिंदी और भाषा - डॉ. भोलनाथ तिवारी, प्रभात प्रकाशन, नई दिल्ली।
3) देवनागरी लिपि तथा हिंदी वर्तनी का मानकीकरण - केंद्रीय हिंदी निदेशालय, उच्चतर शिक्षा विभाग, HRDM, भारत सरकार (2016)।
4) प्रयोजनमूलक मानक हिंदी - ओंकारनाथ वर्मा, सुलभ प्रकाशन, लखनऊ।
5) प्रयोजनमूलक हिंदी भाग 1, 2, 3 - डॉ. उर्मिला पाटील, अतुल प्रकाशन, कानपुर।
6) शुद्ध हिंदी - डॉ. जगदीश प्रसाद कौशिक, साहित्यागार प्रकाशन, जयपुर।
7) मानक हिंदी व्याकरण - डॉ. लक्ष्मीकांत पाण्डेय, विद्या प्रकाशन, कानपुर।
8) प्रयोजनमूलक हिंदी व्याकरण - डॉ. द्विजराम यादव, साहित्य रत्नाकर, कानपुर।
9) व्यावहारिक हिंदी व्याकरण - डॉ. नामदेव उतकर, चन्द्रलोक प्रकाशन, कानपुर।

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DSE HIND-III (B) हिंदी साहित्य का इतिहास (आधुनिक काल)

पाठ्यक्रम का स्वरूप

✦ पाठ्यक्रम का उद्देश्य :-

- हिंदी साहित्य इतिहास के आधुनिक काल के साहित्य से छात्रों को परिचित कराना।
- हिंदी साहित्य के आधुनिक काल के साहित्य की प्रमुख प्रवृत्तियों तथा रचनाकारों से छात्रों को अवगत कराना।
- हिंदी साहित्य इतिहास के आधुनिक काल के पद्य और गद्य साहित्य तथा प्रमुख साहित्यकारों का ज्ञान छात्रों को प्रदान करना।
- आधुनिक काल के साहित्य की प्रमुख उल्लेखनीय कृतियों का छात्रों को परिचय देना।

आधुनिक काल

इकाई I : **आधुनिक काल** : **काव्य** :-

i) भारतेंदुकालीन काव्य की प्रमुख विशेषताएँ।
ii) द्विवेदीयुगीन काव्य की प्रमुख विशेषताएँ।
iii) निम्नलिखित साहित्यिक वादों का परिचय :

छायावाद, प्रगतिवाद, प्रयोगवाद।

इकाई II : **आधुनिक काल** : **गद्य** :-

i) भारतेंदु पूर्व खडीबोली गद्य का सामान्य परिचय।
ii) साहित्यकारों का संक्षिप्त परिचय -

भारतेंदु, प्रेमचंद, आचार्य हजारी प्रसाद द्विवेदी, यशपाल, रामकुमार वर्मा, फणीश्वरनाथ रेणु, मोहन राकेश, जैनेंद्रकुमार।

iii) निम्नलिखित विधाओं का विकासात्मक अध्ययन :-

उपन्यास, कहानी, नाटक।

इकाई III : आधुनिक कालीन साहित्य की प्रमुख पद्य और गद्य कृतियों का संक्षिप्त परिचय :-

i) **आधुनिक कालीन साहित्य की प्रमुख पद्य कृतियों का संक्षिप्त परिचय-**

यशोधरा (मैथिलीशरण गुप्त), प्रिय प्रवास (अयोध्यासिंह उपाध्याय), रश्मिरथी (रामधारी सिंह दिनकर), अंधा युग (धर्मवीर भारती), समय से मुठभेड़ (अदम गोंडवी) तथा बाघ और सुगना मुंडा की बेटी - (अनुज लुगुन)।

ii) **आधुनिक कालीन साहित्य की प्रमुख गद्य कृतियों का संक्षिप्त परिचय** -

कर्मभूमि (प्रेमचंद), पहला राजा (जगदीशचंद्र माथुर), अंतिम अरण्य (निर्मल वर्मा), आषाढ़ का एक दिन (मोहन राकेश), मैला आँचल (फणीश्वरनाथ रेणु), शकुन्तिका (भगवानदास मोरवाल)।

✦ पाठ्यक्रम की उपलब्धियाँ :-

- भारतेन्दुकालीन काव्य की प्रमुख विशेषताओं का छात्रों को ज्ञान प्राप्त होगा।
- द्विवेदीकालीन काव्य की प्रमुख विशेषताओं का छात्रों को ज्ञान प्राप्त होगा ।
- साहित्यिक वादों का छात्रों को परिचय प्राप्त होगा।
- आधुनिक गद्यकारों के साहित्यिक योगदान से छात्रों का परिचय होगा।
- आधुनिक काल की पद्य एवं गद्य कृतियों से छात्र परिचित होंगे।
- प्रस्तुत पाठ्यक्रम का अध्ययन छात्रों को नेट /सेट की परीक्षा तथा प्रतियोगिता परीक्षाओं की पूर्व तैयारी की दृष्टि से उपयोगी सिद्ध होगा।

✦ संदर्भ ग्रंथ -

1) हिंदी साहित्य का इतिहास - आचार्य रामचंद्र शुक्ल
2) हिंदी साहित्य का इतिहास - सं. डॉ. नगेंद्र
3) हिंदी साहित्य का इतिहास - डॉ. लक्ष्मीसागर वार्ष्णेय
4) हिंदी साहित्य का इतिहास - डॉ. देवीशरण रस्तोगी
5) हिंदी साहित्य का इतिहास - डॉ. सज्जनराम केणी
6) हिंदी साहित्य का इतिहास - डॉ. रमेशचंद्र शर्मा
7) हिंदी साहित्य युग और प्रवृत्तियाँ - शिवकुमार शर्मा

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पाठ्यक्रम का स्वरूप

✦ **पाठ्यक्रम का उद्देश्य** :-

- भाषा विज्ञान की परिभाषाएँ तथा भाषा विज्ञान के विविध अंगों से छात्रों को परिचित कराना।
- भाषा विज्ञान तथा व्याकरण के तुलनात्मक अध्ययन का ज्ञान छात्रों को प्रदान करना।
- ध्वनि विज्ञान से संबंधित विविध मुद्दों से छात्रों को परिचित कराना।
- पद (रूप) विज्ञान से संबंधित विविध मुद्दों से छात्रों को परिचित कराना।
- वाक्य विज्ञान से संबंधित विविध मुद्दों का ज्ञान छात्रों को प्रदान करना।
- अर्थ विज्ञान से संबंधित विविध मुद्दों का ज्ञान छात्रों को प्रदान करना।

इकाई I : **भाषा विज्ञान की परिभाषा, स्वरूप, प्रमुख अंग तथा ध्वनि विज्ञान** :-

i) भाषा विज्ञान की परिभाषा, भाषा विज्ञान के अंग तथा भाषा विज्ञान की व्याकरण से तुलना।

ii) **ध्वनि (स्वन) विज्ञान** :

ध्वनि विज्ञान की व्याख्या, भाषा ध्वनि की परिभाषा, ध्वनियंत्र और उसकी कार्यप्रणाली (उच्चारण प्रक्रिया), ध्वनि वर्गीकरण के आधार (स्थान और प्रयत्न), स्वरों और व्यंजनों का वर्गीकरण, ध्वनिगुण।

इकाई II : **पद विज्ञान तथा वाक्य विज्ञान** :-

i) **पद (रूप विज्ञान)** :-

शब्द, पद, संबंध तत्त्व और अर्थतत्त्व, संबंध तत्त्व के प्रकार।

ii) **वाक्य विज्ञान** :-

वाक्य की परिभाषा, वाक्य की आवश्यकताएँ, वाक्य में पदक्रम, वाक्य-विभाजन, वाक्य विभाजन के आधार - अग्र-पश्च, उद्देश्य-विधेय तथा उपवाक्यीय।

इकाई III : **अर्थ विज्ञान** :-

i) **अर्थ विज्ञान** :-

शब्द और अर्थ का संबंध, अर्थ परिवर्तन का स्वरूप, अर्थ परिवर्तन की दिशाएँ, अर्थ परिवर्तन के कारण - बल का अपसरण, पीढ़ी परिवर्तन, अन्य भाषाओं का प्रभाव, वातावरण में परिवर्तन, नम्रता प्रदर्शन, अशोभन के लिए शोभन का प्रयोग, अधिक शब्दों के स्थान पर एक शब्द का प्रयोग, एक शब्द के दो रूपों का प्रचलन, व्यंग्य, आलंकारिक प्रयोग, वस्तुओं का निर्माण, अज्ञान और असावधानी।

✦ पाठ्यक्रम की उपलब्धियाँ :-

- भाषा विज्ञान की परिभाषाएँ तथा भाषा विज्ञान के विविध अंगों से छात्र परिचित होंगे।
- इस पाठ्यक्रम को पढ़कर भाषा विज्ञान तथा व्याकरण का तुलनात्मक ज्ञान छात्रों को प्राप्त होगा।
- ध्वनि विज्ञान से संबंधित विविध मुद्दों का ज्ञान छात्रों को प्राप्त होगा।
- पद (रूप) विज्ञान से संबंधित विविध मुद्दों का ज्ञान छात्रों को प्राप्त होगा।
- अर्थ विज्ञान से संबंधित विविध मुद्दों का ज्ञान छात्रों को प्राप्त होगा।
- यह पाठ्यक्रम सेट/नेट तथा स्पर्धा परीक्षाओं की पूर्व तैयारी की दृष्टि से उपयोगी सिध्द होगा।

✦ संदर्भ ग्रंथ :-

1. भाषा विज्ञान- डॉ. भोलानाथ तिवारी
2. हिन्दी भाषा - डॉ. भोलानाथ तिवारी
3. भाषा विज्ञान -डॉ. तेजपाल चौधरी
4. भाषा विज्ञान- डॉ. रामस्वरूप खरे
5. भाषिक हिन्दी भाषा तथा भाषा शिक्षण- डॉ. अंबादास देशमुख
6. भाषा विज्ञान- डॉ. डी. एम. दोमडिया
7. भाषा विज्ञान एवं हिंदी भाषा का इतिहास -डॉ.हणमंतराव पाटील/ सुधाकर शेंडगे
8. भाषा विज्ञान के अधुनातन आयाम एवं हिन्दी भाषा- डॉ. अंबादास देशमुख

9. भाषा विज्ञान एक अध्ययन- गरिमा श्रीवास्तव

10. भाषा विज्ञान : हिन्दी भाषा- डॉ. सुरेश सिंहल

11. भाषा विज्ञान का रसायन- कैलाशनाथ पाण्डेय

12. भाषा विज्ञान: हिन्दी भाषा और लिपि-रामकिशोर शर्मा

13. भाषा चिन्तन के नये आयाम -रामकिशोर शर्मा

14. आधुनिक भाषा विज्ञान के सिद्धान्त- -रामकिशोर शर्मा

15. हिंदी भाषा का उद्‌गम और विकास - उदयनारायण तिवारी

16. हिंदी भाषा का उद्‌भव और विकास - हेतु भारव्दाज

17. हिंदी भाषा और लिपि का ऐतिहासिक विकास - सत्यनारायण त्रिपाठी

18. हिंदी भाषा की संरचना - डॉ. भोलानाथ तिवारी

19. हिंदी भाषा चिंतन - दिलीप सिंह

20. भाषा का संसार - दिलीप सिंह

21. भाषा विचार एवं भाषा विज्ञान - डॉ. कृष्णा पोतदार, डॉ. मधु खराटे

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GE-I (B) HINDI खानदेश का लोकसाहित्य

पाठ्यक्रम का स्वरूप

पाठ्यक्रम का उद्देश्य :

- लोकसाहित्य की सैद्धांतिकी से छात्रों को परिचित कराना।
- खानदेश के लोकसाहित्य और लोकसंस्कृति से छात्रों को अवगत कराना।
- छात्रों को खानदेश की प्रमुख बोलियाँ : अहिराणी, लेवा और आदिवासी के साहित्य से अवगत कराना।
- लोकगीत, लोककथा, लोकनाट्य और लोकोत्सव आदि के माध्यम से खान्देश की लोकसंस्कृति का साक्षात्कार कराना।
- लोकगीत, लोककथा, और लोकनाट्य आदि से संबंधित प्रतिनिधि साहित्य रचना का अध्ययन और विश्लेषण करना।

इकाई I : लोकसाहित्य : सैद्धांतिक विवेचन :-

i) लोकसाहित्य का सैद्धांतिक पक्ष : अर्थ, परिभाषा, स्वरूप और विशेषताएँ।

ii) खानदेश का लोकसाहित्य और लोकसंस्कृति का सामान्य परिचय।

iii) लोकसाहित्य के प्रमुख प्रकार : लोकगीत, लोककथा, लोकनाट्य और लोकोत्सवों का परिचय।

iv) खानदेश की प्रमुख बोलियों का सामान्य परिचय।

इकाई II : खानदेश की प्रमुख बोलियों का प्रतिनिधि साहित्य : लोकगीत और लोककथा:-

i) अहिराणी बोली : प्रातिनिधिक रूप में एक लोकगीत और एक लोककथा।

ii) लेवा बोली : प्रातिनिधिक रूप में एक लोकगीत और एक लोककथा।

iii) आदिवासी बोली : प्रातिनिधिक रूप में एक लोकगीत एक लोककथा।

इकाई III : खानदेश की प्रमुख बोलियों का प्रतिनिधि साहित्य : लोकनाट्य और लोकोत्सव का अध्ययन :-

i) अहिराणी बोली : प्रातिनिधिक रूप में एक लोकनाट्य और एक लोकोत्सव का अध्ययन।
ii) लेवा बोली : प्रातिनिधिक रूप में एक लोकनाट्य और एक लोकोत्सव का अध्ययन।
iii) आदिवासी बोली : प्रातिनिधिक रूप में एक लोकनाट्य और एक लोकोत्सव का अध्ययन।

सूचना :- ईकाई I और ईकाई II में हिंदी अध्ययन मंडल द्वारा संपादित पाठ्यपुस्तक ``खानदेश का लोकसाहित्य`` में खानदेश की प्रमुख बोलियाँ - अहिराणी, लेवा और आदिवासी की साहित्यिक रचनाओं में से प्रथम क्रम पर प्रकाशित रचनाएँ अध्ययनार्थ रखी गई हैं।

पाठ्यक्रम की उपलब्धियाँ :-

- लोकसाहित्य की सैद्धांतिकी से छात्र अवगत होंगे।
- खानदेश के लोकसाहित्य और लोकसंस्कृति से छात्र परिचित होंगे।
- छात्रों को खानदेश की प्रमुख बोलियाँ :- अहिराणी, लेवा और आदिवासी के साहित्य का ज्ञान हो जाएगा।
- लोकगीत, लोककथा, लोकनाट्य और लोकोत्सव आदि से संबंधित प्रतिनिधि साहित्य रचना का अध्ययन और विश्लेषण करने से छात्रों में प्रादेशिक साहित्य के प्रति आस्था और अस्मिता का भाव जागृत होगा।
- प्रस्तुत पाठ्यक्रम को पढ़कर छात्रों को लोक भाषा में साहित्य सर्जन की प्रेरणा मिलेगी।

✦ संदर्भ ग्रंथ -

1. लोकसाहित्य शास्त्र (अहिराणी के परिप्रेक्ष्य में)-डॉ. बापूराव देसाई
2. मावची लोकसाहित्य शास्त्र - डॉ. बापूराव देसाई
3. पच्चीस लोक बोलियों का शास्त्र और संस्कृति- डॉ. बापूराव देसाई
4. लोकसाहित्य के प्रतिमान- डॉ.कुंदनलाल उप्रेति
5. लोकसाहित्य के मूल स्त्रोत - डॉ. उर्मिला पाटील

6. लोकसाहित्य का अध्ययन- डॉ. त्रिलोचन पाण्डेय
7. महाराष्ट्र का हिन्दी लोक काव्य -डॉ.कृष्ण दिवाकर
8. लोकगीतों का विकासात्मक अध्ययन - डॉ.कुलदीप
9. हिन्दी लोकसाहित्य शास्त्र, सिद्धांत और विकास - डॉ.अनुसया अग्रवाल
10. लोकगीतों की सांस्कृतिक पृष्ठभूमि - डॉ.विद्या चौहान
11. लोककथा परिचय - नलिन विलोचन शर्मा
12. लोककथा विज्ञान- श्रीचन्द्र जैन
13. लोकसाहित्य शास्त्र -डॉ.नंदलाल कल्ला
14. भारतीय लोकसाहित्य की रूपरेखा -दुर्गा भागवत अनु.स्वर्णकांता
15. भारतीय लोकसाहित्य - डॉ.श्याम परमार
16. लोकसाहित्य की भूमिका - डॉ.कृष्णदेव उपाध्याय
17. लोकसाहित्य सिद्धांत और प्रयोग - डॉ. श्रीराम शर्मा
18. अहिराणी ओवीगीते : आशय आणि अभिव्यक्ती - डॉ. सुधा खराटे
19. अहिराणी लोकसाहित्य दर्शन (सण आणि उत्सव) - कृष्णा पाटील
20. आदिवासी संस्कृती, भाषा आणि साहित्य - डॉ. पुष्पा गावित
21. पश्चिम खानदेशातील आदिवासी लोकसाहित्य - डॉ. पुष्पा गावित
22. बोली : समाज, साहित्य आणि संस्कृती - डॉ. कैलास सार्वेकर
23. भाषा भूगोल और सांस्कृतिक चेतना - डॉ. विजयचंद्र
24. लोकसाहित्य विविध आयाम एवं नई दृष्टि - डॉ. जयश्री गावित
25. लोकसाहित्य - डॉ. शशिकांत सोनवणे
26. लोकसाहित्य और पावरी भाषा - डॉ. नारायणभाई चौधरी
27. लेवा पाटीदार समाज : एक अन्वयार्थ - डॉ. नि. रा. पाटील

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* समकक्ष विषयों की सूची *

पंचम सत्र (semester V)

अ.क्र	पुराना पाठ्यक्रम	अ.क्र.	नया पाठ्यक्रम
1	HIN-351 A हिंदी सामान्य (G-3) -I	1	DSC- E (A) Hindi विशेष विधा : यात्रा साहित्य
2	HIN-351 B प्रयोजनमूलक हिंदी (G-3) - I	2	DSC- E (B) Hindi प्रयोजनमूलक हिंदी
3	HIN-352 हिंदी साहित्य का इतिहास (S-III) - I	3	DSE-III (A) Hindi हिंदी साहित्य का इतिहास (आदिकाल, भक्तिकाल और रीतिकाल)
4	HIN-353 भाषा विज्ञान तथा राष्ट्रभाषा आंदोलन का इतिहास (S-IV) - I	4	DSE-IV (A) Hindi हिंदी भाषा का विकास
5	-	5	MIL III Hindi संपादन लेखन और साहित्य (मुद्रित माध्यम)
6	-	6	SEC-III Hindi हिंदी व्याकरण तथा अभिव्यक्ति कौशल
7	-	7	GE-I (A) HINDI हिंदी की राष्ट्रीय काव्यधारा

षष्ठ सत्र (semester VI)

अ.क्र	पुराना पाठ्यक्रम	अ.क्र.	नया पाठ्यक्रम
1	HIN-361 A हिंदी सामान्य (G-3) -II	1	DSC- F (A) Hindi विशेष विधा : भारतीय संत काव्य
2	HIN-361 B प्रयोजनमूलक हिंदी (G-3) - II	2	DSC- F (B) Hindi प्रयोजनमूलक हिंदी
3	HIN-362 हिंदी साहित्य का इतिहास(S-III)-II	3	DSE-III (B) Hindi हिंदी साहित्य का इतिहास (आधुनिक काल)
4	HIN-363 भाषा विज्ञान तथा राष्ट्रभाषा आंदोलन का इतिहास (S-IV) - II	4	DSE-IV (B) Hindi भाषा विज्ञान
5	-	5	MIL IV HINDI हिंदी सिनेमा और साहित्य : (इलेक्ट्रॉनिक माध्यम)
6	-	6	SEC-IV Hindi हिंदी भाषा का मानकीकरण और अशुद्धि शोधन
7	-	7	GE-I (B) HINDI खानदेश का लोक साहित्य

डॉ. सुनील कुलकर्णी
अध्यक्ष, हिंदी अध्ययन मंडल
कवयित्री बहिणाबाई चौधरी
उत्तर महाराष्ट्र विश्वविद्यालय, जलगाँव

|| अंतरी पेटवू ज्ञानज्योत ||

Grade - A

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव

मानवविज्ञान विद्याशाखा

Choice Based Credit System

तृतीय वर्ष कला - मराठी

सत्र पाचवे व सहावे

(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

DSC मराठी : वाङ्मयीन मराठी

विशिष्ट वाङ्मयप्रकारांचा अभ्यास

सत्र पाचवे

DSC मराठी E : एकांकिका लेखनाचा अभ्यास

सत्र सहावे

DSC मराठी F : ललित गद्य लेखनाचा अभ्यास

किंवा

पर्यायी अभ्यासपत्रिका

DSC मराठी : उपयोजित मराठी

व्यवसायाभिमुख लेखनासाठी मराठी

सत्र पाचवे

DSC मराठी E : व्यवसायाभिमुख लेखनासाठी मराठी

सत्र सहावे

DSC मराठी F : व्यवसायाभिमुख लेखनासाठी मराठी

DSE 3 मराठी : मध्ययुगीन मराठी वाङ्मयाचा इतिहास

सत्र पाचवे

DSE 3 मराठी A: मध्ययुगीन मराठी वाङ्मयाचा इतिहास

सत्र सहावे

DSE 3 मराठी B : मध्ययुगीन मराठी वाङ्मयाचा इतिहास

DSE 4 मराठी : मराठीचा भाषिक अभ्यास

सत्र पाचवे

DSE 4 मराठी A : मराठीचा भाषिक अभ्यास

सत्र सहावे

DSE 4 मराठी B : मराठीचा भाषिक अभ्यास

GE मराठी : मराठी लोकरंगभूमी

सत्र पाचवे

GE मराठी A : मराठी लोकरंगभूमी

सत्र सहावे

GE मराठी B : मराठी लोकरंगभूमी

MIL मराठी : माध्यमांसाठी लेखन व संवाद

सत्र पाचवे

MIL मराठी 3 : दृक्-श्राव्य माध्यमांसाठी लेखन व संवाद

सत्र सहावे

MIL मराठी 4 : आधुनिक समाजमाध्यमांसाठी लेखन व संवाद

SEC मराठी : लेखनकौशल्ये

सत्र पाचवे

SEC मराठी 3 : लेखनकौशल्य - निबंधलेखन

सत्र सहावे

SEC मराठी 4 : लेखनकौशल्य - ग्रंथपरीक्षण लेखन

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon

Structure of T. Y. B. A. (Faculty of Humanities)
Under CBCS Pattern (2020 - 2021)

Semester	Discipline Specific Core Course DSC	Ability Enhancement Compulsory Courses AEC	Skill Enhancement Course SEC	Discipline Specific Elective Courses DSE	Generic Elective GE
V Credits: 28 (10 Papers)	MIL 3 (03) DSC 1 E (03) – Marathi G - 3 DSC 2 E (03) DSC 3 E (03)	English Communication (02)	SEC 3 (02) – Marathi	DSE 3 A (03) – Marathi S - 3 DSE 4 A (03) - Marathi S - 4	GE 1 A (03) - Marathi GE 2 A (03)
VI Credits: 28 (10 Papers)	MIL 4 (03) DSC 1 F (03) – Marathi G - 3 DSC 2 F (03) DSC 3 F (03)	English Communication (02)	SEC 4 (02) – Marathi	DSE 3 B (03) - Marathi S - 3 DSE 4 B (03) – Marathi S - 4	GE 1 B (03) – Marathi GE 2 B (03)

- **AEC - English Communication** ही अनिवार्य अभ्यासपत्रिका आहे. तृतीय वर्षास प्रवेशित प्रत्येक विद्यार्थ्याने ही अभ्यासपत्रिका अभ्यासणे अनिवार्य आहे.
- **MIL** ही अनिवार्य अभ्यासपत्रिका आहे. तृतीय वर्षास प्रवेशित प्रत्येक विद्यार्थ्याने मराठी, हिंदी, संस्कृत, पाली, अर्धमागधी, उर्दू यांपैकी महाविद्यालयात शिकवल्या जाणाऱ्या कोणत्याही एका भाषा विषयाच्या **MIL** मधील अभ्यासपत्रिकेची निवड करणे अनिवार्य आहे.
- **DSE 3, 4** मध्ये मराठी विषयाच्या अभ्यासपत्रिकांची निवड केल्यास **DSC** मधील तीन अभ्यासपत्रिकांपैकी एक अभ्यासपत्रिका मराठी विषयाची निवडणे (वाङ्मयीन वा उपयोजित) अनिवार्य आहे.
- **DSC** मधील अन्य दोन अभ्यासपत्रिका अन्य कोणत्याही दोन भिन्न विषयांच्या निवडता येतील.
- **SEC** मध्ये महाविद्यालयात उपलब्ध असलेल्या कोणत्याही विषयाच्या कौशल्याधारित अभ्यासपत्रिकांची निवड करणे अनिवार्य आहे.
- **GE** मध्ये महाविद्यालयात विशेष स्तरावर उपलब्ध कोणत्याही दोन विषयांच्या प्रत्येकी एक अशा एकूण दोन आंतरविद्याशाखीय अभ्यापत्रिकांची निवडणे अनिवार्य आहे. (उदा. GE मराठी आणि GE राज्यशास्त्र)

Equivalence

T. Y. B. A.	Existing Pattern	CBCS Pattern (Since 2020 - 2021)
Sem. V	Compulsory English	AEC - English Communication
	----------	MIL 3 (Compulsory Course) (Marathi/Hindi/Sanskrit/Urdu/Pali/Aradhamagadhi)
	Special Paper S-3	DSE 3 A
	Special Paper S-4	DSE 4 A
	General Paper G-3 (Vangmayin or Upyojit)	DSC 1 E (General Paper of Special subject- DSE 3 A & 4 A) (Vangmayin or Upyojit)
	Optional	DSC 2 E (General Paper of any subject)
		DSC 3 E (General Paper of any subject)
	----------	SEC-3 (Skill based Paper of any subject)
	----------	GE-1 A (Interdisciplinary Paper of any subject)
	----------	GE-2 A (Interdisciplinary Paper of any subject)
Sem. VI	Compulsory English	AEC - English Communication
	----------	MIL 4 (Compulsory Course) (Marathi/Hindi/Sanskrit/Urdu/Pali/Aradhamagadhi)
	Special Paper S-3	DSE 3 B
	Special Paper S-4	DSE 4 B
	General Paper G-2 (Vangmayin or Upyojit)	DSC 1 F (General Paper of Special subject- DSE 3 B & 4 B) (Vangmayin or Upyojit)
	Optional	DSC 2 F (General Paper of any subject)
		DSC 3 F (General Paper of any subject)
	----------	SEC-4 (Skill based Paper of any subject)
	----------	GE-1 B (Interdisciplinary Paper of any subject)
	----------	GE-2 B (Interdisciplinary Paper of any subject)

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव

मानवविज्ञान विद्याशाखा

Choice Based Credit System

तृतीय वर्ष कला – मराठी

सत्र पाचवे व सहावे

(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

अभ्यासपत्रिका	अभ्यासपत्रिकेचे शीर्षक	सत्र	सत्रानुसार शीर्षक	श्रेयांक
DSC Marathi वाङ्मयीन मराठी	विशिष्ट वाङ्मयप्रकारांचा अभ्यास	पाचवे	एकांकिका लेखनाचा अभ्यास	तीन
		सहावे	ललित गद्य लेखनाचा अभ्यास	तीन
पर्यायी अभ्यासपत्रिका				
DSC Marathi उपयोजित मराठी	व्यवसायाभिमुख लेखनासाठी मराठी	पाचवे	व्यवसायाभिमुख लेखनासाठी मराठी	तीन
		सहावे	व्यवसायाभिमुख लेखनासाठी मराठी	तीन
DSE 3 Marathi	मध्ययुगीन मराठी वाङ्मयाचा इतिहास	पाचवे	मध्ययुगीन मराठी वाङ्मयाचा इतिहास	तीन
		सहावे	मध्ययुगीन मराठी वाङ्मयाचा इतिहास	तीन
DSE 4 Marathi	मराठीचा भाषिक अभ्यास	पाचवे	मराठीचा भाषिक अभ्यास	तीन
		सहावे	मराठीचा भाषिक अभ्यास	तीन
GE Marathi	मराठी लोकरंगभूमी	पाचवे	मराठी लोकरंगभूमी	तीन
		सहावे	मराठी लोकरंगभूमी	तीन

MIL Marathi	**माध्यमांसाठी लेखन व संवाद**	**पाचवे**	**दृक्-श्राव्य माध्यमांसाठी लेखन व संवाद**	**तीन**
		सहावे	**आधुनिक समाजमाध्यमांसाठी लेखन व संवाद**	**तीन**
SEC Marathi	**लेखनकौशल्ये**	**पाचवे**	**लेखनकौशल्य - निबंधलेखन**	**दोन**
		सहावे	**लेखनकौशल्य - ग्रंथपरीक्षण लेखन**	**दोन**

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
मानव्यविज्ञान विद्याशाखा
Choice Based Credit System
तृतीय वर्ष कला – मराठी
सत्र पाचवे व सहावे
(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

DSC Marathi
वाङ्मयीन मराठी
विशिष्ट वाङ्मयप्रकारांचा अभ्यास

सत्र पाचवे
DSC Marathi E : एकांकिका लेखनाचा अभ्यास
(श्रेयांक – तीन)

दलित एकांकिका लेखनाचा अभ्यास
'निवडक दलित एकांकिका'
संपा. दत्ता भगत, साहित्य अकादेमी, नवी दिल्ली.
पहिली आवृत्ती: 2012. **पुनर्मुद्रण:** 2013.

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. एकांकिका या नाट्यप्रकाराचे स्वरूप व त्याची वैशिष्ट्ये जाणून घेणे.
  2. मराठीतील एकांकिका लेखनाची वाटचाल लक्षात घेणे.
  3. दलित एकांकिका लेखनाचे स्वरूप, त्याची वैशिष्ट्ये व वाटचाल समजून घेणे.
  4. निवडक दलित एकांकिकांचा अभ्यास करणे.

- **घटक विश्लेषण –**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	1.1 एकांकिका: संकल्पना, स्वरूप व वैशिष्ट्ये	01	15
	1.2 मराठीतील एकांकिका लेखनाचा परामर्श		
	1.2.1 सन 1950 पूर्व मराठीतील एकांकिका लेखन		
	1.2.2 सन 1950 नंतरचे मराठीतील एकांकिका लेखन		
	1.2.3 मराठीतील दलित एकांकिका लेखन: स्वरूपवैशिष्ट्ये व वाटचाल		

2.	'निवडक दलित एकांकिका' या पुस्तकातील पुढील एकांकिकांचा अभ्यास (विषयसूत्र, कथानक, पात्रचित्रण, संघर्ष, संवाद, मांडणी, भाषिक विशेष या मुद्यांच्या अनुषंगाने)	01	15
	1. 'शेटजीचे इलेक्शन' — अण्णाभाऊ साठे		
	2. 'जहाज फुटलं आहे' — दत्ता भगत		
	3. 'घोटभर पाणी' — प्रेमानंद गज्वी		
3.	'निवडक दलित एकांकिका' या पुस्तकातील पुढील एकांकिकांचा अभ्यास (विषयसूत्र, कथानक, पात्रचित्रण, संघर्ष, संवाद, मांडणी, भाषिक विशेष या मुद्यांच्या अनुषंगाने)	01	15
	1. 'डोया व्हईसन आंधया' — भगवान ठाकूर		
	2. 'बायको मी देवाची' — रामनाथ चव्हाण		
	3. 'ऐन आषाढात पंढरपुरात' — संजय पवार		
	एकूण श्रेयांक व घड्याळी तासिका	03	45

- **संदर्भग्रंथ-**

1. आधुनिक मराठी नाटक (आशय आणि आकृतिबंध) — सुषमा जोगळेकर
2. दलित रंगभूमी — संपादन व प्रस्तावना: भालचंद्र फडके, सुरेश एजन्सी, पुणे.
3. मराठी रंगभूमीच्या तीस रात्री — मकरंद साठे, पॉप्युलर, मुंबई.
4. मराठी नाटक आणि रंगभूमी: पहिले शतक (1843-1943) — वि. भा. देशपांडे, व्हीनस, पुणे.
5. मराठी नाटक: स्वातंत्र्योत्तर काल (1947-90) — वि. भा. देशपांडे, व्हीनस, पुणे.
6. मराठी नाटक नाटककार: काळ आणि कर्तृत्व खंड 1, 2, 3 — वि. भा. देशपांडे, दिलीपराज, पुणे.
7. मराठी नाट्यसृष्टी — गो. म. कुलकर्णी, मेहता, पुणे.
8. मराठी नाटक आणि रंगभूमी विसावे शतक — वसंत आबाजी डहाके, पॉप्युलर, मुंबई.
9. माझा नाट्यलेखन / दिग्दर्शनाचा प्रवास — संपा. वि. भा. देशपांडे, उन्मेष, पुणे.
10. प्रदक्षिणा खंड 2 — संपा. अनिरुध्द कुलकर्णी, कॉन्टिनेन्टल, पुणे.
11. निवडक मराठी एकांकिका — संपा. सुधा जोशी, रत्नाकर मतकरी, साहित्य अकादेमी, नवी दिल्ली.
12. नाटक-एक वाङ्मयप्रकार — दत्ता भगत, य. च. म. मु. वि., नाशिक.
13. मराठी नाटक आणि रंगभूमी — हिमांशू स्मार्त, विश्वनाथ शिंदे, प्रतिमा, पुणे.
14. नाटकी नाटकं — कमलाकर नाडकर्णी, मनोविकास, पुणे.
15. नाट्यावलोकन — आरती कुलकर्णी, रेखा जगनाळे-मोतेवार, विजय, नागपूर.
16. दलित साहित्य: उद्गम आणि विकास — योगेन्द्र मेश्राम
17. दलित रंगभूमी — संपा. भालचंद्र फडके
18. दलित रंगभूमी आणि नाट्यचळवळ — मधुकर मोकाशी, स्नेहवर्धन, पुणे.
19. दलित नाटक आणि रंगभूमी — ईश्वर नंदापुरे
20. दलित नाटक: प्रेरणा व विकास — शैलेश त्रिभुवन
21. एकांकिका विशेषांक, पंचधारा, जुलै-सप्टेंबर 2015.
22. https://www.marathisrushti.com/articles/दलित-रंगभूमी-दलित-नाट्यच/

सत्र सहावे
DSC Marathi F : ललित गद्य लेखनाचा अभ्यास
(श्रेयांक –तीन)

ललित गद्य लेखनाचा अभ्यास
'ललितरंग' (स्त्रीविषयक निवडक ललित गद्य)

संपादन: मराठी अभ्यासमंडळ, कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव.
(सदर पुस्तकात सहा ललित गद्य लेखांचा समावेश असेल.)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. ललित गद्य या वाङ्मयप्रकाराची संकल्पना, त्याचे स्वरूप व त्याची वैशिष्ट्ये जाणून घेणे.
  2. मराठीतील ललित गद्य लेखनाच्या वाटचालीचा परामर्श घेणे.
  3. ललित गद्य लेखनातील विविध प्रकारांची, त्यांच्या बदलत्या रूपांची माहिती करून घेणे.
  4. स्त्रीविषयक निवडक ललित गद्य लेखनाचा अभ्यास करणे.

- **घटक विश्लेषण –**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	1.1 ललित गद्य: संकल्पना, स्वरूप व वैशिष्ट्ये	01	15
	1.2 मराठी ललित गद्य लेखनाचा परामर्श		
	1.2.1 सन 1950 पूर्वीचे मराठी ललित गद्य (लघुनिबंध)		
	1.2.2 सन 1950 नंतरचे मराठी ललित गद्य (ललित निबंध)		
	1.2.3 सन 1975 नंतरचे ललित गद्य (लेखनाचे विविधांगी स्वरूप)		
2.	'ललितरंग' या पुस्तकातील (क्र. एक ते तीन) ललित गद्य लेखांचा अभ्यास (लेखनातील 'मी', अनुभवाचे स्वरूप - भावनात्मकता व चिंतनशीलता, स्त्रीजीवनाचे दर्शन, निवेदन, भाषिक व शैली विशेष, मांडणी या मुद्यांच्या अनुषंगाने)	01	15
3.	'ललितरंग' या पुस्तकातील (क्र. चार ते सहा) ललित गद्य लेखांचा अभ्यास (लेखनातील 'मी', अनुभवाचे स्वरूप - भावनात्मकता व चिंतनशीलता, स्त्रीजीवनाचे दर्शन, निवेदन, भाषिक व शैली विशेष, मांडणी या मुद्यांच्या अनुषंगाने)	01	15
	एकूण श्रेयांक व घड्याळी तासिका	03	45

- **संदर्भग्रंथ-**

1. लघुनिबंध ते मुक्तगद्य – वि. शं. चौघुले, मॅजेस्टिक, मुंबई.
2. ललित गद्याचे तात्त्विक स्वरूप आणि लघुनिबंधाचा इतिहास – आनंद यादव, मेहता, पुणे.
3. आधुनिक मराठी वाङ्मयाचा इतिहास खंड पहिला व दुसरा – संपा. अ. ना. देशपांडे, व्हीनस, पुणे.
4. मराठी वाङ्मयाचा इतिहास खंड सातवा – संपा. रा. ग. जाधव, महाराष्ट्र साहित्य परिषद, पुणे.
5. लोकरंग – संपा. चंद्रकुमार नलगे, गंगाधर पानतावणे, रिया, कोल्हापूर.
6. मराठी लघुनिबंधाचा जनक कोण ? – ना. सी. फडके
7. मराठी निबंध-लघुनिबंध: स्वरूप व विवेचन – संपा. चंद्रकांत देऊळगावकर, वि. ना. देऊळकर, मेहता, पुणे.
8. लघुनिबंध आणि लघुनिबंधकार – संपा. भिवाजी अर्जुन परब, ढवळे, मुंबई.
9. मराठी साहित्य: प्रेरणा व स्वरूप (1950-1975) – संपा. गो. मा. पवार, म. द. हातकणंगलेकर, पॉप्युलर, मुंबई.
10. प्रदक्षिणा खंड 1 व 2- संपा. अनिरुध्द कुलकर्णी, कॉन्टिनेन्टल, पुणे.
11. साहित्याची निर्मितीप्रक्रिया – आनंद यादव, मेहता, पुणे.
12. वाङ्मयप्रकार: संकल्पना आणि स्वरूप – संपा. आनंद वास्कर, अन्वय, पुणे.
13. मराठी गद्य: पूर्वपीठिका आणि निबंध – हरिश्चंद्र तुकाराम थोरात, स्वरूप, औरंगाबाद.
14. मुक्तगद्य: संकल्पना आणि उपयोजन – वि. शं. चौघुले, मॅजेस्टिक, मुंबई.
15. प्रस्तावना – ललित गद्याचे स्वरूप: आकलन व अध्यापन, आनंद यादव, ललित गद्यलेणी – संपा. कैलास सार्वेकर, अमोल, पुणे.
16. महाराष्ट्र साहित्य पत्रिका, अंक 291-292, ऑक्टोबर 1999 ते मार्च 2000.
17. ललित गद्य विशेषांक, ललित, ऑगस्ट 1988.
18. स्तंभलेखन विशेषांक, साहित्यसूची, दिवाळी 1996.
19. मराठीतील ललित गद्य: विचार आणि विस्तार, अक्षरयात्रा विशेषांक 2011-12, संपा. उज्ज्वला मेहंदळे
20. ललित गद्य विशेषांक, ललित, मार्च 2013.
21. स्त्री साहित्याचा मागोवा खंड 1, 2 – संपा. मंदा खांडगे व इतर, साहित्यप्रेमी भगिनी मंडळ, पुणे.
22. स्त्री-लिपी (स्त्री-साहित्यातील बदलांचा वेध) – नीलिमा गुंडी, मेनका, मुंबई.
23. मराठी लेखिका: चिंता आणि चिंतन – भालचंद्र फडके, श्रीविद्या, पुणे.

पर्यायी अभ्यासपत्रिका

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
मानव्यविज्ञान विद्याशाखा
Choice Based Credit System
तृतीय वर्ष कला – मराठी
सत्र पाचवे व सहावे
(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

DSC Marathi
उपयोजित मराठी
व्यवसायाभिमुख लेखनासाठी मराठी

सत्र पाचवे
DSC Marathi E : व्यवसायाभिमुख लेखनासाठी मराठी
(श्रेयांक – तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. व्यावसायिक लेखनासाठी मराठी भाषेचे उपयोजन करण्यास शिकणे.
  2. अहवाल लेखनाचे स्वरूप जाणून असे लेखन करणे.
  3. संपादन प्रक्रियेची माहिती घेऊन त्या प्रक्रियेचा अनुभव घेणे.
  4. प्रकाशन व्यवसायाबाबत जाणून घेऊन त्याच्याशी संबंधित विविध कामांची माहिती घेणे.

- **घटक विश्लेषण -**

घटक क.	घटक	श्रेयांक	घड्याळी तासिका
1.	**अहवाल लेखन**	01	15
	1.1 अहवाल लेखन: स्वरूप, घटक व वैशिष्ट्ये		
	1.2 अहवाल लेखकाच्या अंगी आवश्यक गुण		
	1.3 अहवालांचे स्वरूप: वाङ्मयमंडळ, मराठी विभाग कार्यक्रम, शैक्षणिक सहल, राष्ट्रीय सेवा योजना शिबीर, युवती सभा कार्यक्रम		
	1.4 उपयोजन - वर नमूद केलेल्यांपैकी कोणत्याही एका प्रकारच्या अहवालाचे लेखन करा.		
2.	**संपादन: स्वरूप व प्रक्रिया**	01	15
	2.1 संपादन: प्रयोजन व भूमिका		
	2.2 संपादन: नियोजन, पूर्वतयारी व संपादकाच्या अंगी आवश्यक गुण		

	2.3 संपादनाचे स्वरूप: स्मरणिका व गौरविका, वार्षिक अंक / दिवाळी अंक, नियतकालिक (पाक्षिक, मासिक, द्वैमासिक)		
	2.4 उपयोजन —वर नमूद केलेल्यांपैकी कोणत्याही एका प्रकारातील संपादनाचा आराखडा तयार करा.		
3.	**प्रकाशन व्यवसाय: स्वरूप व प्रक्रिया**	01	15
	3.1 ग्रंथप्रकाशन: प्रयोजन व भूमिका		
	3.2 प्रकाशन व्यवसाय: नियोजन, पूर्वतयारी व त्यासाठी आवश्यक गुण		
	3.3 अ) ग्रंथप्रकाशनाची प्रक्रिया: मुद्रणप्रत, मुद्रितशोधन, मुखपृष्ठ, मांडणी, सजावट, मुद्रक, कागदनिवड, मुद्रणपध्दती, बांधणी, वितरक, स्वामित्व हक्क, लेखककरार, ग्रंथनोंदी, आवृत्ती, पुनर्मुद्रण		
	आ) ग्रंथवितरण व विक्री: वितरणव्यवस्था, विक्रेताप्रकार, ग्रंथालय, जाहिरात, प्रोमो, समीक्षा, ई-बुक, ऑनलाईन विक्री		
	3.4 उपयोजन — परिसरातील एखाद्या प्रकाशन संस्थेच्या कार्यालयास किंवा पुस्तक वितरण व विक्री करणाऱ्या व्यावसायिकाच्या कार्यालयास भेट द्या व तेथील कामकाजासंबंधी जाणून घ्या.		
	एकूण श्रेयांक व घड्याळी तासिका	03	45

टीप — अंतर्गत परीक्षेसाठी प्रत्येक घटकातील उपयोजनात्मक भागावर भर दिला जाईल. तसेच विद्यापीठ परीक्षेच्या प्रश्नपत्रिकेत प्रत्येक घटकावरील उपयोजनात्मक भागावरीलही प्रश्न समाविष्ट असतील.

सत्र सहावे
DSC Marathi F : व्यवसायाभिमुख लेखनासाठी मराठी
(श्रेयांक — तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. व्यावसायिक लेखनासाठी मराठी भाषेचे उपयोजन करण्यास शिकणे.
  2. नाटक व चित्रपट यांच्या परीक्षण लेखनाचे स्वरूप जाणून घेऊन त्याचे उपयोजन करण्यास शिकणे.
  3. मुलाखत घेण्यासाठी आवश्यक बाबींची माहिती घेऊन मुलाखत लेखनाची प्रक्रिया आत्मसात करणे.
  4. भाषांतराची प्रक्रिया जाणून घेऊन भाषांतराचा सराव करणे.

- **घटक विश्लेषण** –

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**परीक्षण लेखन**	01	15
	1.1 परीक्षण लेखन: स्वरूप, घटक व वैशिष्ट्ये		
	1.2 परीक्षण लेखन: पूर्वतयारी व आवश्यक गुण		
	1.3 परीक्षण लेखनाचे स्वरूप: नाट्य परीक्षण लेखन व चित्रपट परीक्षण लेखन		
	1.4 उपयोजन – एखादा चित्रपट वा एखादे नाटक पाहून त्याचे परीक्षण लिहा.		
2.	**मुलाखत लेखन**	01	15
	2.1 मुलाखत: प्रयोजन व स्वरूप		
	2.2 मुलाखत: पूर्वतयारी, प्रश्नसूची व मुलाखतकाराच्या अंगी आवश्यक कौशल्ये		
	2.3 मुलाखतीचे स्वरूप: माध्यमनिहाय मुलाखती (मुद्रित, श्राव्य, दृक-श्राव्य माध्यमांसाठी मुलाखत)		
	2.4 उपयोजन– कोणत्याही एका माध्यमासाठी प्रशासन, क्रीडा वा साहित्य या क्षेत्रांमध्ये विशेष कामगिरी बजावणाऱ्या एका व्यक्तीची मुलाखत घेऊन ती लिहून काढा.		
3.	**भाषांतर लेखन**	01	15
	3.1 भाषांतर: स्वरूप व प्रक्रिया		
	3.2 भाषांतर, अनुवाद, भावानुवाद, रूपांतर यांतील साम्य-भेद		
	3.3 भाषांतर: आवश्यक कौशल्ये		
	3.4 उपयोजन –इंग्लिश वा हिंदी उताऱ्याचे मराठीत भाषांतर करणे किंवा अहिराणी व आदिवासी बोलीतील कथा / उतारा यांचे मराठीत भाषांतर करणे.		
	एकूण श्रेयांक व घड्याळी तासिका	03	45

टीप – अंतर्गत परीक्षेसाठी प्रत्येक घटकातील उपयोजनात्मक भागावर भर दिला जाईल. तसेच विद्यापीठ परीक्षेच्या प्रश्नपत्रिकेत प्रत्येक घटकावरील उपयोजनात्मक भागावरीलही प्रश्न समाविष्ट असतील.

- **संदर्भग्रंथ-**

1. व्यावहारिक मराठी – ल. रा. नशिराबादकर, फडके, कोल्हापूर.
2. व्यावहारिक मराठी – संपा. स्नेहल तावरे, स्नेहवर्धन, पुणे.
3. व्यावहारिक मराठी – प्रकाश परब, मिथुन, मुंबई.

4. मराठी भाषा: उपयोजन आणि सर्जन – संपा. अनिल गवळी
5. रसग्रहण: कला व स्वरूप – गो. म. कुलकर्णी, कॉन्टिनेन्टल, पुणे.
6. रसास्वाद: वाङ्मय आणि कला – माधव आचवल, मुंबई मराठी साहित्य् संघ, मुंबई.
7. संपादन: स्वरूप व कार्ये – य. च. म. मु. वि., नाशिक.
8. साहित्य संवाद - वि. शं. चौघुले, प्रतिमा, पुणे.
9. मराठी प्रकाशनव्यवसाय परिचय – शरद गोगटे
10. पॉप्युलर रीतिपुस्तक – रामदास भटकळ, मृदुला जोशी, पॉप्युलर, मुंबई.
11. मराठी ग्रंथप्रकाशनाची 200 वर्षे – शरद गोगटे, राजहंस, पुणे.
12. बखर एका प्रकाशकाची – पं. अ. कुलकर्णी, मेनका, पुणे.
13. मराठी ग्रंथनिर्मितीची वाटचाल – शं. गो. तुळपुळे, महाराष्ट्र ग्रंथोत्तेजक सभा, पुणे.
14. साहित्याची भूमी – श्री. पु. भागवत, ग्रंथाली, मुंबई.
15. मराठी प्रकाशनांचे स्वरूप, प्रेरणा आणि परंपरा – अ. ह. लिमये, प्रसाद, पुणे.
16. मराठी लेखनकोश – यास्मिन शेख
17. भाषांतरमीमांसा – संपा. कल्याण काळे, अंजली सोमण, प्रतिमा, पुणे.
18. भाषांतर – सदा कऱ्हाडे, लोकवाङ्मय गृह, मुंबई.
19. भाषांतर – शास्त्र की कला ? – म. वि. फाटक, रजनी ठकार, वरदा, पुणे.
20. भाषांतर आणि भाषा – विलास सारंग, मौज, मुंबई.
21. अनुवादमीमांसा – संपा. केशव तुपे, साक्षात, औरंगाबाद.
22. भाषांतरविद्या: स्वरूप आणि समस्या - संपा. रमेश वरखेडे, य. च. म. मु. वि., नाशिक.
23. अनुवादविज्ञान – निलेश लोंढे, स्वरूप, पोखणी, परभणी.
24. भाषा आणि भाषांतर - य. च. म. मु. वि., नाशिक.

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
मानव्यविज्ञान विद्याशाखा
Choice Based Credit System
तृतीय वर्ष कला – मराठी
सत्र पाचवे व सहावे
(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

DSE 3 Marathi
मध्ययुगीन मराठी वाङ्मयाचा इतिहास

सत्र पाचवे
DSE Marathi 3 A: मध्ययुगीन मराठी वाङ्मयाचा इतिहास
(श्रेयांक –तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. मध्ययुगीन मराठी वाङ्मयाच्या इतिहासाचा परिचय करून घेणे.
  2. मध्ययुगीन मराठी वाङ्मयाच्या निर्मितीमागील प्रेरणा जाणून घेणे.
  3. महानुभाव संप्रदायाच्या वाङ्मयनिर्मितीचे स्वरूप लक्षात घेऊन त्याची वैशिष्ट्ये जाणून घेणे.
  4. शाहिरी काव्याचे स्वरूप लक्षात घेऊन त्याची ठळक वैशिष्ट्ये जाणून घेणे.
  5. निवडक ग्रंथकारांच्या वाङ्मयनिर्मितीचा वा साहित्यकृतींचा परिचय करून घेणे.

- **घटक विश्लेषण -**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**महानुभाव संप्रदायाची वाङ्मयनिर्मिती** 1.1 महानुभाव संप्रदाय: तत्त्वज्ञान व आचारधर्म 1.2 महानुभाव संप्रदायाच्या पद्य व गद्य वाङ्मयाचा परिचय 1.3 महानुभाव संप्रदायाच्या वाङ्मयाची ठळक वैशिष्ट्ये	01	15
2.	**शाहिरांची वाङ्मयनिर्मिती** 2.1 शाहिरी काव्य: प्रेरणा व भूमिका 2.2 शाहिरांच्या पोवाडा व लावणी वाङ्मयाचा परिचय 2.3 शाहिरी काव्याची ठळक वैशिष्ट्ये	01	15
3.	**निवडक ग्रंथकारांच्या वाङ्मयनिर्मितीचा वा साहित्यकृतींचा परिचय** 3.1 म्हाईंभट 3.2 'दृष्टांतपाठ' 3.3 अनंत फंदी 3.4 'सुंदरा मनामध्ये भरली...'	01	15
	एकूण श्रेयांक व घड्याळी तासिका	03	45

सत्र सहावे
DSE Marathi 3 B: मध्ययुगीन मराठी वाङ्मयाचा अभ्यास
(श्रेयांक –तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. मध्युयुगीन मराठी वाङ्मयाच्या इतिहासाचा परिचय करून घेणे.
  2. मध्ययुगीन मराठी वाङ्मयाच्या निर्मितीमागील प्रेरणा जाणून घेणे.
  3. वारकरी संप्रदायातील प्रमुख संतकवींच्या काव्यनिर्मितीचे स्वरूप जाणून घेऊन त्याची वैशिष्ट्ये लक्षात घेणे.
  4. बखर वाङ्मयनिर्मितीचा परिचय करून घेऊन त्याची ठळक वैशिष्ट्ये जाणून घेणे.
  5. निवडक ग्रंथकारांच्या वाङ्मयनिर्मितीचा वा साहित्यकृतींचा परिचय करून घेणे.

- **घटक विश्लेषण -**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**वारकरी संप्रदायाची वाङ्मयनिर्मिती** 1.1 वारकरी संप्रदाय: तत्त्वज्ञान व आचारधर्म 1.2 वारकरी संप्रदायातील प्रमुख संतकवींच्या स्फुट व ग्रंथरूप काव्यनिर्मितीचा परिचय 1.3 वारकरी संप्रदायाच्या वाङ्मयनिर्मितीची ठळक वैशिष्ट्ये	01	15
2.	**बखर वाङ्मयनिर्मिती** 2.1 बखरलेखन: प्रेरणा व भूमिका 2.2 बखरलेखनाचा परिचय (शिवपूर्वकालीन, शिवकालीन व पेशवेकालीन बखरी) 2.3 बखरलेखनाची ठळक वैशिष्ट्ये	01	15
3.	**निवडक ग्रंथकारांच्या वाङ्मयनिर्मितीचा वा साहित्यकृतींचा परिचय** 3.1 ज्ञानेश्वर 3.2 'तुकारामगाथा' 3.3 मल्हार रामराव चिटणीस 3.4 'भाऊसाहेबांची बखर'	01	15
	एकूण श्रेयांक व घड्याळी तासिका	03	45

- **संदर्भग्रंथ-**

  1. मराठी वाङ्मयाचा इतिहास खंड 1, 2, 3 – संपा. रा. श्री. जोग, महाराष्ट्र साहित्य परिषद, पुणे.
  2. प्राचीन मराठी वाङ्मयाचे स्वरूप – ह. श्री. शेणोलीकर, मोघे प्रकाशन, कोल्हापूर.
  3. प्राचीन मराठी वाङ्मयाचा इतिहास खंड 1 ते 4 – अ. ना. देशपांडे, कॉन्टिनेन्टल, पुणे.
  4. महाराष्ट्र सारस्वत खंड 1, 2 – वि. ल. भावे, पॉप्युलर, मुंबई.
  5. मराठी साहित्य, इतिहास आणि संस्कृती – वसंत आबाजी डहाके, भटकळ फौंडेशन, मुंबई.

6. प्राचीन मराठी वाङ्मयाचा इतिहास — ल. रा. नशिराबादकर, फडके, कोल्हापूर.
7. मराठी साहित्याचे आदिबंध — उषा देशमुख
8. पाच भक्तिसंप्रदाय — र. रा. गोसावी
9. पाच संतकवी — शं. गो. तुळपुळे
10. वारकरी संप्रदाय: उदय आणि विकास — भा. पं. बहिरट व अन्य
11. धर्मसंप्रदाय आणि मध्ययुगीन मराठी वाङ्मय — र. बा. मंचरकर
12. संत वाङ्मयाची सामाजिक फलश्रुती — गं. बा. सरदार, लोकवाङ्मय गृह, मुंबई.
13. महाराष्ट्रीय संतमंडळाचे ऐतिहासिक कार्य — बा. रं. सुंठणकर, लोकवाङ्मय गृह, मुंबई.
14. संत, पंत आणि तंत — श्री. म. माटे
15. मध्ययुगीन साहित्याचा पुनर्विचार — श्री. रं. कुलकर्णी, राजहंस, पुणे.
16. मध्ययुगीन साहित्याविषयी — सतीश बडवे, मीरा बुक्स् अॅण्ड पब्लिकेशन्स, औरंगाबाद.
17. महानुभाव पंथ आणि त्याचे वाङ्मय — शं. गो. तुळपुळे, व्हीनस, पुणे.
18. प्राचीन मराठी संतकवयित्रींचे वाङ्मयीन कार्य — सुहासिनी इर्लेकर, परिमल, औरंगाबाद.
19. संत कवयित्री — इंदुमती शेवडे
20. रोकडे पाझर — राजन गवस, दर्या प्रकाशन, पुणे.
21. संतसाहित्यमीमांसा — संपा. ताहेर पठाण, न. ब. कदम, शब्दालय, श्रीरामपूर.
22. प्राचीन मराठीच्या नवधारा — रा. चिं. ढेरे, मोघे, कोल्हापूर.
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24. बखर वाङ्मय: उद्गम आणि विकास — बापूजी संकपाळ
25. बखरवाङ्मय — र. वि. हेरवाडकर, व्हीनस, मुंबई.
26. मराठी बखरवाङ्मयाचा पुनर्विचार — गं. ब. ग्रामोपाध्ये, मेहता, पुणे.
27. मराठी कवितेचा उष:काल — श्री. म. वर्दे, मौज, मुंबई.
28. शाहिरी कविता: एक चिकित्सा - प्रकाश देशपांडे केजकर, स्वरूप, औरंगाबाद.
29. मऱ्हाटी लावणी — संपा. म. वा. धोंड
30. मराठी शाहिरी वाङ्मय — म. ना. सहस्त्रबुध्दे

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
मानव्यविज्ञान विद्याशाखा
Choice Based Credit System
तृतीय वर्ष कला – मराठी
सत्र पाचवे व सहावे
(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

DSE 4 Marathi
मराठीचा भाषिक अभ्यास

सत्र पाचवे
DSE Marathi 4 A: मराठीचा भाषिक अभ्यास
(श्रेयांक –तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. भाषेचे स्वरूप आणि तिचे कार्य जाणून घेणे.
  2. भाषाभ्यासाच्या विविध अंगांचा परिचय करून घेणे.
  3. भाषा उत्पत्तीचे सिध्दांत जाणून घेणे.
  4. भाषाकुल संकल्पना समजून घेऊन मराठीच्या भाषाकुलाची माहिती घेणे.
  5. मराठी भाषेच्या उत्पत्तीसंबंधीची मते जाणून घेऊन मराठीची पूर्वपीठिका लक्षात घेणे.

- **घटक विश्लेषण -**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**भाषा: स्वरूप आणि कार्य**	01	15
	1.1 भाषा: स्वरूप व लक्षणे / वैशिष्ट्ये 1.2 भाषेचे कार्य: संदेशन / संज्ञापन (भाषिक संदेशनाचे निराळेपण) 1.3 भाषाभ्यासाची विविध अंगे (ऐतिहासिक, वर्णनात्मक व सामाजिक भाषाविज्ञान यांचा परिचय)		
2.	**भाषा उत्पत्ती आणि भाषांचे वर्गीकरण**		
	2.1 भाषा उत्पत्तीचे सिध्दांत (प्रमुख सिध्दांतांचा परिचय) 2.2 भाषाकुल संकल्पना व मराठी भाषा – 2.2.1 भाषाकुल संकल्पना (जगातील प्रमुख भाषाकुले, होर्न्ले यांचा अंतर्वर्तुळ-बहिर्वर्तुळ सिध्दांत) 2.2.2 मराठीचे भाषाकुल		
3.	**मराठी भाषेची उत्पत्ती आणि पूर्वपीठिका**	01	15
	3.1 मराठी भाषेच्या उत्पत्तीनिश्चितीसंबंधी साधने - 3.1.1 शिलालेख (उनकेश्वर, पंढरपूर, नेवासे, अंबाजोगाई, परळ,		

	श्रवणबेळगोळ, दिवे आगर येथील शिलालेख) 3.1.2 ग्रंथ (ज्योतिषरत्नमाला, मानसोल्लास, कुवलयमाला, राजमतीप्रबोध, विवेकसिंधू, लीळाचरित्र, ज्ञानेश्वरी) 3.2 मराठी भाषेच्या उत्पत्तीसंबंधीचा वैद्य - गुणे वाद 3.3 मराठीची जनकभाषा (वि. का. राजवाडे, कृ. पां. कुलकर्णी, शं. गो. तुळपुळे, प्र. रा. देशमुख यांची मते)		
	एकूण श्रेयांक व घड्याळी तासिका	03	45

सत्र सहावे
DSE Marathi 4 B : मराठीचा भाषिक अभ्यास
(श्रेयांक –तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. मराठीच्या कालिक भेदांचे स्वरूप जाणून घेऊन त्यांची वैशिष्ट्ये नोंदविणे.
  2. मराठीच्या प्रांतिक भेदांची माहिती करून घेणे.
  3. मराठीच्या निवडक प्रमुख बोलींच्या वैशिष्ट्यांचा परिचय करून घेणे.
  4. भाषाविषयक समज-गैरसमज यांचे निराकरण करून घेणे.
  5. मराठीवरील अन्य भाषांच्या प्रभावाचे स्वरूप लक्षात घेणे.

- **घटक विश्लेषण -**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**मराठीचे कालिक भेद** 1.1 यादवकालीन मराठी: स्वरूप व वैशिष्ट्ये 1.2 बहामनीकालीन मराठी: स्वरूप व वैशिष्ट्ये 1.3 शिवकालीन व पेशवेकालीन मराठी: स्वरूप व वैशिष्ट्ये	01	15
3.	**मराठीचे प्रांतिक भेद (प्रमाण मराठी व बोली)** 2.1 मराठीचा भाषिक नकाशा (प्रांतिक भेद) 2.2 प्रमाणभाषा व बोली: सहसंबंध 2.3 वऱ्हाडी, चंदगडी व अहिराणी या बोलींच्या ठळक वैशिष्ट्यांचा परिचय	01	15
4.	**भाषाविषयक समज-गैरसमज व मराठीवरील अन्य भाषांचा प्रभाव** 3.1 भाषाविषयक समज-गैरसमज (भाषा: शुध्द-अशुध्द, भाषा: प्रमाण-अप्रमाण, भाषा: श्रेष्ठ-कनिष्ठ, भाषा: मौखिक-लिखित) 3.2 संस्कृत, फारसी, द्राविडी, हिन्दी या भाषांचा मराठीवरील प्रभाव 3.3 इंग्लिश व अन्य युरोपियन भाषांचा मराठीवरील प्रभाव	01	15
	एकूण श्रेयांक व घड्याळी तासिका	03	45

- **संदर्भग्रंथ-**

1. भाषाविज्ञान: वर्णनात्मक व ऐतिहासिक – संपा. मालशे, इनामदार, सोमण
2. भाषा आणि संस्कृती - ना. गो. कालेलकर
3. भाषा: इतिहास आणि भूगोल – ना. गो. कालेलकर
4. ऐतिहासिक भाषाविज्ञान – र. रा. गोसावी
5. भाषा: अंत:सूत्र आणि व्यवहार – संपा. मु. ग. पानसे
6. मराठीचा भाषिक अभ्यास (ऐतिहासिक व वर्णनात्मक) – संपा. मु. श्री. कानडे
7. मराठी भाषेचा इतिहास – गं. ना. जोगळेकर
8. सुलभ भाषाविज्ञान – द. दि. पुंडे
9. भाषाविज्ञान आणि मराठी भाषा – अनिल गवळी
10. सुबोध भाषाशास्त्र – प्र. न. जोशी
11. मराठीचे ऐतिहासिक भाषाशास्त्र – गोसावी-वैद्य
12. भाषा आणि भाषाशास्त्र – श्री. न. गजेंद्रगडकर
13. मराठी भाषा: वाढ आणि बिघाड – श्री. के. क्षीरसागर
14. अर्वाचीन मराठी – रमेश धोंगडे
15. वैखरी – अशोक केळकर
16. भाषाविचार आणि मराठी भाषा – गं. ब. ग्रामोपाध्ये
17. मराठी भाषा: उद्गम आणि विकास – कृ. पां. कुलकर्णी
18. मराठी भाषेचे मूळ – विश्वनाथ खैरे
19. यादवकालीन मराठी भाषा – शं. गो. तुळपुळे
20. भाषा, समाज आणि संस्कृती – सोनाली देशपांडे-गुजर
21. महाराष्ट्राचा भाषिक नकाशा (पूर्वतयारी) – रमेश धोंगडे
22. बोलीभाषा संशोधनाच्या नव्या दिशा – संपा. म. सु. पगारे, आशुतोष पाटील
23. अहिराणी बोली: भाषावैज्ञानिक अभ्यास – रमेश सूर्यवंशी
24. समाजभाषाविज्ञान: बोलींचा अभ्यास – सुधाकर चौधरी
25. मायबोलीचा जागर, स्मरणिका, राज्यस्तरीय मराठी बोली साहित्य संमेलन 2019, महाराष्ट्र साहित्य परिषद, पाचोरा, जि. जळगाव.
26. लेख - चंदगडी बोली, नंदकुमार मोरे, भारतीय भाषांचे लोकसर्वेक्षण - महाराष्ट्र खंड, मुख्य संपादक - गणेश देवी, पृ. 114-129.
27. लेख - चंदगडी बोली, नंदकुमार मोरे, भाषा आणि जीवन, दिवाळी 2012, बोली विशेषांक, पृ. 47-56.

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
मानव्यविज्ञान विद्याशाखा
Choice Based Credit System
तृतीय वर्ष कला – मराठी
सत्र पाचवे व सहावे
(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

GE Marathi
मराठी लोकरंगभूमी

सत्र पाचवे
GE Marathi A : मराठी लोकरंगभूमी
(श्रेयांक –तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. लोकरंगभूमीची संकल्पना जाणून घेणे.
  2. लोकरंगभूमीचे स्वरूप जाणून घेऊन वैशिष्ट्यांचा परिचय करून घेणे.
  3. लोकसाहित्य आणि लोकरंगभूमी यांचे परस्परसंबंध समजून घेणे.
  4. कीर्तन आणि भारूड या लोकरंगभूमीच्या पारंपरिक रूपांची स्वरूपवैशिष्ट्ये जाणून घेणे.
  5. खान्देशी वही आणि कोकणी दशावतार या लोकरंगभूमीच्या प्रादेशिक प्रकारांची स्वरूपवैशिष्ट्ये जाणून घेणे.

- **घटक विश्लेषण -**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**लोकरंगभूमी: संकल्पना व स्वरूप** 1.1 लोकरंगभूमी: संकल्पना 1.2 लोकरंगभूमी: स्वरूप व वैशिष्ट्ये 1.3 लोकसाहित्य व लोकरंगभूमी: परपस्परसंबंध	01	15
2.	**लोकरंगभूमी: पारंपरिक रूपे** 2.2 कीर्तन: भमिका, स्वरूप, प्रकार व वैशिष्ट्ये 2.2 भारुड: भूमिका, स्वरूप, प्रकार व वैशिष्ट्ये	01	15
3.	**लोकरंगभूमी: प्रादेशिक रूपे** 3.1 वही (खान्देशी): स्वरूप व वैशिष्ट्ये 3.2 दशावतार (कोकणी): स्वरूप व वैशिष्ट्ये	01	15
	एकूण श्रेयांक व घड्याळी तासिका	03	

सत्र सहावे
GE Marathi B : मराठी लोकरंगभूमी
(श्रेयांक –तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. तमाशा या लोकरंगभूमीच्या पारंपरिक रूपाची स्वरूपवैशिष्ट्ये जाणून घेणे.
  2. लोकनाट्य या लोकरंगभूमीच्या आधुनिक रूपाची स्वरूपवैशिष्ट्ये जाणून घेणे.
  3. सत्यशोधकी जलसे आणि आंबेडकरी जलसे या लोकरंगभूमीच्या आधुनिक रूपांची स्वरूपवैशिष्ट्ये जाणून घेणे.
  4. पथनाट्य आणि रिंगणनाट्य या लोकरंगभूमीच्या आधुनिक रूपांची स्वरूपवैशिष्ट्ये जाणून घेणे.

- **घटक विश्लेषण -**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1	**लोकरंगभूमी: पारंपरिक व आधुनिक रूपे** 1.1 तमाशा: भूमिका, स्वरूप व वैशिष्ट्ये 1.2 लोकनाट्य: भूमिका, स्वरूप व वैशिष्ट्ये	01	15
2.	**लोकरंगभूमी: आधुनिक रूपे** 2.1 सत्यशोधकी जलसे: भूमिका, स्वरूप व वैशिष्ट्ये 2.2 आंबेडकरी जलसे: भूमिका, स्वरूप व वैशिष्ट्ये	01	15
3.	**लोकरंगभूमी: आधुनिक रूपे** 3.1 पथनाट्य: भूमिका, स्वरूप व वैशिष्ट्ये 3.2 रिंगणनाट्य: भूमिका, स्वरूप व वैशिष्ट्ये	01	15
	एकूण श्रेयांक व घड्याळी तासिका	03	45

- **संदर्भग्रंथ-**

1. लोकरंगभूमी (परंपरा, स्वरूप आणि भवितव्य) – प्रभाकर मांडे, मधुराज पब्लिकेशन्स, पुणे.
2. लोकरंगभूमी – प्रभाकर मांडे, दिलीपराज, पुणे.
3. लोकनागर रंगभूमी – तारा भवाळकर
4. लोकसंचित – तारा भवाळकर
5. महाराष्ट्राची सांस्कृतिक लोककला – रामचंद्र देखणे
6. मराठी रंगभूमीचा पूर्वरंग – कृ. बा. मराठे
7. लोकधर्मी नाट्याची जडणघडण – शरद व्यवहारे
8. कीर्तन प्रयोग – यशवंत पाठक, गोदावरी, अहमदनगर.
9. नाचू कीर्तनाचे रंगी – यशवंत पाठक, कॉन्टिनेन्टल, पुणे.
10. श्री एकनाथाची भारुडे – ना. वि. बडवे

11. श्री एकनाथ महाराजांची निवडक भारुडे – संपा. एल. जी. सोनवणे
12. वही वाङ्मयातील लोकजीवन – म. सु. पगारे
13. खान्देश: साहित्य आणि संस्कृती – संपा. वासुदेव वले
14. दशावतार – महेश केळुसकर
15. मराठी लोककला तमाशा – नामदेव व्हटकर
16. तमाशा लोकरंगभूमी – रुस्तुम अचलखांब
17. पारंपरिक मराठी तमाशा आणि आधुनिक वगनाट्य – विश्वनाथ शिंदे
18. मराठी लोकनाट्याची परंपरा – वि. कृ. जोशी
19. आंबेडकरी जलसे: एक चिकित्सक अभ्यास – भगवान ठाकूर
20. आंबेडकरी शाहिरी – कृष्णा किरवले
21. लोकमाध्यमे आणि समाजपरिवर्तन – रा. चिं. ढेरे
22. रिंगणनाट्य – अतुल पेठे, राजू इनामदार
23. लेख- 'रिंगणनाट्य: विचारप्रबोधनाचे एक सशक्त माध्यम', प्रतिभा पंकज वाणी, अक्षरगाथा, ऑक्टोबर ते डिसेंबर 2019, पृ. 5-11.

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
मानव्यविज्ञान विद्याशाखा
Choice Based Credit System
तृतीय वर्ष कला – मराठी
सत्र पाचवे व सहावे
(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

MIL Marathi
माध्यमांसाठी लेखन व संवाद

सत्र पाचवे
MIL Marathi 3: दृक्-श्राव्य माध्यमांसाठी लेखन व संवाद
(श्रेयांक –तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. दूरचित्रवाणी या दृक्-श्राव्य माध्यमाचा विशेष परिचय करून घेणे.
  2. दूरचित्रवाणी या दृक्-श्राव्य माध्यमाचे कार्य आणि त्याची उपयुक्तता यांबाबत जाणून घेणे.
  3. दूरचित्रवाणीसाठी करावयाच्या मनोरंजनपर व माहितीपर कार्यक्रमांच्या लेखनाचे स्वरूप व तंत्र अवगत करणे.
  4. दूरचित्रवाणीसाठी करावयाच्या जाहिरात लेखनाचे स्वरूप व तंत्र अवगत करणे.
  5. दूरचित्रवाणीसाठी आवश्यक निवेदन कौशल्याचे स्वरूप जाणून घेणे.

- **घटक विश्लेषण -**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**दृक्-श्राव्य माध्यमे: स्वरूप व परिचय** 1.1 दूरचित्रवाणी या दृक्-श्राव्य माध्यमाचा विशेष परिचय (भारतातील दूरदर्शनचा प्रारंभ व विकास यांचा संक्षिप्त आढावा) 1.2 दूरचित्रवाणीच्या सर्वसाधारण स्वरूपाची माहिती (दूरदर्शनचे दैनंदिन कार्य व खाजगी दूरचित्रवाणी वाहिन्यांचा परिचय) 1.3 दूरचित्रवाणीचे कार्य, त्याची उपयुक्तता आणि ठळक वैशिष्ट्ये	01	15
2.	**दूरचित्रवाणीसाठी लेखन** 2.1 मनोरंजनपर कार्यक्रमांसाठी लेखन (मालिकांसाठी पटकथा व संवाद लेखन, स्कीट (लघुनाट्य) लेखन - स्वरूप, रचना, भाषा व लेखनाचे तंत्र)	01	15

	2.2 माहितीपर कार्यक्रमांसाठी लेखन (बातमी, फीचर / विशिष्ट विषयावरील वृत्तपट, चर्चात्मक कार्यक्रम यांसाठी लेखन- स्वरूप, रचना, भाषा व लेखनाचे तंत्र)		
3.	**दूरचित्रवाणीसाठी लेखन व संवाद** 3.1 जाहिरात लेखन (जाहिरातीचे स्वरूप, जाहिरातीची प्रभावक्षमता, दृश्य व ध्वनी यांचे भान, भाषा व लेखनाचे तंत्र) 3.2 दूरचित्रवाणासाठी निवेदन कौशल्य (मनोरंजनपर कार्यक्रमासाठी निवेदन, बातमी व वृत्तपट निवेदन — स्वरूप, आवश्यक भाषिक कौशल्ये, व्यक्तिमत्त्व व देहबोली)	01	15
	एकूण श्रेयांक व घड्याळी तासिका	03	45

सत्र सहावे
MIL Marathi 4: आधुनिक समाजमाध्यमांसाठी लेखन व संवाद
(श्रेयांक —तीन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. आधुनिक समाजमाध्यमांचा विशेष परिचय करून घेणे.
  2. आधुनिक समाजमाध्यमांचे कार्य आणि त्यांची उपयुक्तता यांबाबत जाणून घेणे.
  3. ईमेल लेखनाचे स्वरूप लक्षात घेऊन ते लेखनतंत्र अवगत करणे.
  4. ब्लॉग लेखनाचे स्वरूप लक्षात घेऊन ते लेखनतंत्र अवगत करणे.
  5. फेसबुक, ट्विटर, व्हॉटसऍप, यूट्यूब यांवरील लेखनाचे स्वरूप जाणून घेणे.
  6. फेसबुक व यूट्यूब यांवरील निवेदन कौशल्य जाणून घेऊन आत्मसात करणे.

- **घटक विश्लेषण** —

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**आधुनिक समाजमाध्यमे: स्वरूप आणि परिचय** 1.1 संकेतस्थळ, ईमेल, ब्लॉग, फेसबुक, ट्विटर, व्हॉटसऍप, यूट्यूब या आधुनिक समाजमाध्यमांचा परिचय (त्यांचा प्रारंभ व विकास यांचा संक्षिप्त परामर्श) 1.2 आधुनिक समाजमाध्यमांचे कार्य, त्यांची उपयुक्तता आणि ठळक वैशिष्ट्ये	01	15
2.	**आधुनिक समाजमाध्यमांसाठी लेखन** 2.1 ईमेल लेखन (ईमेल खाते म्हणजे काय ?, ते कसे तयार करावे ?, त्याचा वापर कसा करावा ? व ईमेल कसा लिहावा- लेखनाचे स्वरूप, रचना व तंत्र)	01	15

	2.2 ब्लॉग लेखन (ब्लॉग कसा तयार करावा ?, त्याचा वापर कसा करावा ?, ब्लॉगचे स्वरूप व त्यानुसार त्यावरील लेखन - रचना व तंत्र)		
3.	**आधुनिक समाजमाध्यमांसाठी लेखन व संवाद** 3.1 फेसबुक, ट्विटर, व्हॉटसऍप यावरील लेखन (या माध्यमांनुसार लेखनाचे स्वरूप —रचना व तंत्र) 3.2 फेसबुक व यूट्यूब या समाजमाध्यमांसाठी निवेदन (या माध्यमांनुसार व त्यावरील कार्यक्रमांच्या स्वरूपानुसार आवश्यक निवेदन कौशल्य)	01	15
	एकूण श्रेयांक व घड्याळी तासिका	03	45

- **संदर्भग्रंथ-**

1. आजच्या ठळक बातम्या — समीरण वाळवेकर
2. भाषासंवाद — अनिल गवळी, नंदकुमार मोरे
3. दूरदर्शनसाठी लेखन — केशव केळकर
4. सृजनशील लेखन — आनंद पाटील
5. टेलि-वर्तन — निळू दामले
6. मराठी चित्रपटाची पटकथा — अनिल सपकाळ
7. लेख — 'पटकथा लेखनाचे तंत्र आणि मंत्र', रवींद्र गुर्जर, बाइट्स ऑफ इंडियावर 'किमया' या सदरातील लेख, https://goo.gl/TiSWnh
8. फीचर रायटिंग — प्रसन्नकुमार अकलूजकर
9. शॉर्टफिल्म — प्रसाद नामजोशी
10. व्यावहारिक मराठी भाषा, यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक.
11. सायबर संस्कृती — रमेश नारायण वरखेडे
12. डॉट कॉम — गिरीश कुबेर
13. संगणकयुग — अच्युत गोडबोले
14. आधुनिक माहिती तंत्रज्ञानाच्या विश्वात — दीपक शिकारपूर, उज्ज्वल मराठे
15. मराठी भाषिक कौशल्ये विकास — संपा. पृथ्वीराज तौर
16. सोशल मीडिया — योगेश बोराटे
17. सोशल मीडिया डिजीटल दुनिया — प्रफुल्ल सुतार
18. सोशल नेटवर्किंग कल और आज — राकेश कुमार
19. ऑनलाइन मीडिया — सुरेश कुमार
20. सोशल मीडिया मार्केटिंग तंत्र — प्रथमेश कोरगांवकर
21. सोशल मीडिया शाप की वरदान ? — दीपक शिकारपूर
22. माझा आवाज — महेश केळुसकर

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
मानव्यविज्ञान विद्याशाखा
Choice Based Credit System
तृतीय वर्ष कला – मराठी
सत्र पाचवे व सहावे
(शैक्षणिक वर्ष 2020 - 2021 पासून लागू)

SEC Marathi
लेखनकौशल्ये

सत्र पाचवे
SEC Marathi 3 : लेखनकौशल्य - निबंधलेखन
(श्रेयांक –दोन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. निबंधलेखनाचे कौशल्य आत्मसात करणे.
  2. निबंधलेखनाचे स्वरूप व त्याचे घटक जाणून घेणे.
  3. निबंधाचे प्रकार लक्षात घेऊन त्यांच्या लेखनाचा सराव करणे.

- **घटक विश्लेषण –**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**निबंध: संकल्पना व स्वरूप** 1.1 निबंध म्हणजे काय ? 1.2 निबंधाचे रचनाघटक 1.3 निबंधाचे प्रकार (वर्णनात्मक निबंध, आत्मनिवेदनात्मक निबंध, चिंतनात्मक निबंध, ललित निबंध)	01	15
2.	**निबंधलेखन: उपयोजन** 2.1 एखाद्या विषयावर वर्णनात्मक निबंध लिहा. 2.2 एखाद्या विषयावर आत्मनिवेदनात्मक निबंध लिहा. 2.3 एखाद्या विषयावर चिंतनात्मक निबंध लिहा. 2.4 एखाद्या विषयावर ललित निबंध लिहा.	01	15
	एकूण श्रेयांक व घड्याळी तासिका	02	30

सत्र सहावे
SEC Marathi 4 : लेखनकौशल्य – ग्रंथपरीक्षण लेखन
(श्रेयांक –दोन)

- **अभ्यासक्रमाची उद्दिष्टे-**
  1. ग्रंथपरीक्षण लेखनाचे कौशल्य आत्मसात करणे.
  2. ग्रंथपरीक्षण लेखनाचे स्वरूप व अशा लेखनाची प्रक्रिया जाणून घेणे.
  3. विविध प्रकारांतील ग्रंथांचे परीक्षण लिहिण्याचा सराव करणे.

- **घटक विश्लेषण –**

घटक क्र.	घटक	श्रेयांक	घड्याळी तासिका
1.	**ग्रंथपरीक्षण लेखन: स्वरूप व प्रक्रिया** 1.1 ग्रंथपरीक्षण लेखनाची आवश्यकता व त्यासाठी उपलब्ध क्षेत्रे 1.2 ग्रंथपरीक्षण लेखनाची पूर्वतयारी (वाचन, आकलन, टिपणे) 1.3 ग्रंथपरीक्षणाचे स्वरूप – प्रास्ताविक (ग्रंथाचे शीर्षक व प्रकाशनकाल व अन्य माहिती, ग्रंथाचा प्रधान विषय), ग्रंथाचे एकंदर स्वरूप व मांडणी, ग्रंथाचे निराळेपण, गुणदोषात्मक विवेचन, मूल्यमापनात्मक अभिप्राय, शीर्षक	01	15
2.	**ग्रंथपरीक्षण लेखन: उपयोजन** 2.1 एखाद्या कादंबरीचे परीक्षण लिहा. 2.2 एखाद्या कवितासंग्रहाचे परीक्षण लिहा. 2.3 एखाद्या कथासंग्रहाचे परीक्षण लिहा.	01	15
	एकूण श्रेयांक व घड्याळी तासिका	02	30

- **संदर्भग्रंथ-**

1. निबंध: शास्त्र व कला – प्र. न. जोशी
2. वाङ्मयीन निबंध – रा. ग. जाधव, कॉन्टिनेन्टल, पुणे.
3. डायमंड निबंधलेखमाला - विभावरी दामले, प्राची साठे
4. मराठी निबंध पुष्पांजली – शोभना आळवणी
5. व्यावहारिक मराठी – ल. रा. नशिराबादकर, फडके प्रकाशन, कोल्हापूर.
6. व्यावहारिक मराठी भाषा, यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक.
7. मराठी भाषा: उपयोजन आणि सर्जन – संपा. अनिल गवळी
8. सुलभ मराठी व्याकरण व लेखन – पद्मिनी बिनीवाले, नवनीत, मुंबई.
9. सुलभ मराठी व्याकरण व लेखन – मो. रा. वाळंबे, नितीन, पुणे.
10. ग्रंथ-संवाद – वि. शं. चौघुले, प्रतिमा, पुणे.

11. रसास्वाद: वाङ्मय आणि कला – माधव आचवल, मुंबई मराठी साहित्य संघ, मुंबई.
12. रसग्रहण: कला व स्वरूप – गो. म. कुलकर्णी, कॉन्टिनेन्टल, पुणे.
13. साहित्याची निर्मितीप्रक्रिया – आनंद यादव, मेहता, पुणे.
14. साहित्याची आस्वादरूपे – वि. शं. चौघुले
15. मराठी लेखनकोश – अरुण फडके, ढवळे, मुंबई.
16. मराठी लेखनकोश – यास्मिन शेख, मनोविकास, पुणे.
17. लेखनमित्र – र. य. साने, विद्या विकास पब्लिशर्स, नागपूर.

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
मानवविज्ञान विद्याशाखा
तृतीय वर्ष कला - मराठी
अभ्यासक्रम

2015 – 2016	2020 - 2021 (CBCS)
सामान्य स्तर (जी - 3) : वाङ्मयीन मराठी वाङ्मयप्रकारांचा अभ्यास सत्र पाचवे MAR 351 नाटक : अधांतर — जयंत पवार सत्र सहावे MAR 361 निवडक ललित गद्य : संपादक, मराठी अभ्यास मंडळ, उमवि, जळगाव.	DSC मराठी : वाङ्मयीन मराठी विशिष्ट वाङ्मयप्रकारांचा अभ्यास सत्र पाचवे MAR 351 DSC मराठी A : एकांकिका लेखनाचा अभ्यास 'निवडक दलित एकांकिका' — संपा. दत्ता भगत, साहित्य अकादेमी, नवी दिल्ली. सत्र सहावे MAR 361 DSC मराठी B : ललित गद्य लेखनाचा अभ्यास 'ललितरंग' — संपा. मराठी अभ्यासमंडळ, कबचौ उमवि, जळगाव.
पर्यायी अभ्यासपत्रिका	पर्यायी अभ्यासपत्रिका
सामान्य स्तर (जी - 3) : उपयोजित मराठी सत्र पाचवे MAR 352 उपयोजित मराठी सत्र सहावे MAR 362 उपयोजित मराठी	DSC मराठी: उपयोजित मराठी व्यवसायाभिमुख लेखनासाठी मराठी सत्र पाचवे MAR 352 DSC मराठी A : व्यवसायिभिमुख लेखनासाठी मराठी सत्र सहावे MAR 362 DSC मराठी B : व्यवसायाभिमुख लेखनासाठी मराठी
मराठी विशेष स्तर (एस - 3) सत्र पाचवे MAR 353 आधुनिक मराठी वाङ्मयाचा इतिहास : 1920 ते 1960 (कथा व कादंबरी वाङ्मय) सत्र सहावे MAR 363 आधुनिक मराठी वाङ्मयाचा इतिहास : 1920 ते 1960 (कविता व नाट्य वाङ्मय)	DSE 3: मराठी मध्ययुगीन मराठी वाङ्मयाचा इतिहास सत्र पाचवे MAR 353 DSE 3 मराठी A : मध्ययुगीन मराठी वाङ्मयाचा इतिहास सत्र सहावे MAR 363 DSE 3 मराठी B : मध्ययुगीन मराठी वाङ्मयाचा इतिहास

मराठी विशेष स्तर (एस - 4) **सत्र पाचवे** **MAR 354** **भाषाविज्ञान** **सत्र सहावे** **MAR 364** **मराठी व्याकरण**	**DSE 4: मराठी** **मराठीचा भाषिक अभ्यास** **सत्र पाचवे** **MAR 354** **DSE 4 मराठी A : मराठीचा भाषिक अभ्यास** **सत्र सहावे** **MAR 364** **DSE 4 मराठी B : मराठीचा भाषिक अभ्यास**
	GE : मराठी **मराठी लोकरंगभूमी** **सत्र पाचवे** **GE मराठी A : मराठी लोकरंगभूमी** **सत्र सहावे** **GE मराठी B : मराठी लोकरंगभूमी**
	MIL : मराठी **माध्यमांसाठी लेखन व संवाद** **सत्र पाचवे** **MIL मराठी 3 : दृक्-श्राव्य माध्यमांसाठी लेखन व संवाद** **सत्र सहावे** **MIL मराठी 4 : आधुनिक माध्यमांसाठी लेखन व संवाद**
	SEC : मराठी **लेखनकौशल्ये** **सत्र पाचवे** **SEC मराठी 3 : लेखनकौशल्य — निबंधलेखन** **सत्र सहावे** **SEC मराठी 4 : लेखनकौशल्य — ग्रंथपरीक्षण लेखन**

|| अंतरी पेटवू ज्ञानज्योत||

" A" Grade NAAC Re- Accredited

(3rd Cycle)

T.Y.B.A.

Political Science

CBCS Pattern (UGC)

Kavayitri Bahinabai Chaudhari

North Maharashtra University, Jalgaon

With effect from

2020-2021

|| अंतरी पेटवू ज्ञानज्योत||

" A" Grade NAAC Re- Accredited

(3rd Cycle)

Kavayitri Bahinabai Chaudhari

North Maharashtra University, Jalgaon

Revised Syllabus

For

Political Science

(T.Y.B.A.)

CBCS – Semester Pattern

(Choice Based Credit System)

Semester V & VI

Academic Year 2020-2021

Under the Faculty of Humanities.

K.B.C. North Maharashtra University , Jalgaon.

|| अंतरी पेटवू ज्ञानज्योत||

" A" Grade NAAC Re- Accredited

(3rd Cycle)

K.B.C. North Maharashtra University, Jalgoan (M.S)

Faculty of Humanities Syllabus under Choice-Based Credit System

Third Year Arts : Political Science

Semester : Fifth and Six (5 & 6)

[Since June 2020-2021 Academic Year]

- DSC Political Science, Discipline Specific Care Course

  Semester : 5

  DSC 1 E Indian Political Thinker Part - I

  Semester : 6

  DSC 1 F Indian Political Thinker Part - II

- DSE Pol. Sci, Discipline Specific Elective Course

  Semester : 5

  DSE 3A Western Political Thinker Part – I

  Semester : 6

  DSE 3B Western Political Thinker Part – II

  Semester : 5

  DSE 4A Political Sociology Part – I

  Semester : 6

  DSE 4B Political Sociology Part – II

- G.E. Pol. Sci. Generic Elective (Interdisciplinary)

  Semester : 5

  G.E.1 A Indian Civil Services

  Semester : 6

  G.E.1 B Civil Services and Good Governance

- SEC Pol. Sci Skill Enhancement Course

  Semester : 5

  SEC 3 Journalism and Mass Communication

  Semester : 6

  SEC 4 Political Journalism

K.B.C.N.M.University, Jalgoan (M.S)

Structure of T.Y.B.A (Faculty of Humanities)

Under C.B.C.S. Pattern (2020 – 2021)

Sr. No	Semester	Discipline Specific Core Course DSC	Ability Enhancement Compulsory Courses AEC	Skill Enhancement Course SEC	Discipline Specific Elective Courses DSE	Generic Elective GE
1.	V Credits : 28 10 Papers [5th Sem]	MIL 3 (03) DSC 1 E (03) (Pol.Sci G3) DSC 2 E (03) DSC 3 E (03)	English Communication (02)	SEC3 (02) Political Sci	DSE 3 A (03) Pol. Sci S-3 DSE 4 A (03) Pol. Sci S-4	GE 1 A (03) -Pol Sci GE 2 A (03)
2.	VI Credits : 28 10 Papers [6th Sem]	MIL 4 (03) DSC 1 F (03) (Pol.Sci G3) DSC 2 F (03) DSC 3 F (03)	English Communication (02)	SEC4 (02) Political Sci	DSE 3 B (03) Pol. Sci S-3 DSE 4 B (03) Pol. Sci S-4	GE 1 B (03) -Pol Sci GE 2 B (03)

- AEC – English Communication ही अनिवार्य अभ्यास पत्रिका आहे. तृतीय वर्षास प्रवेशित प्रत्येक विध्यार्थाने ही अभ्यासपत्रिका अभ्यासणे अनिवार्य आहे.
- MIL ही अनिवार्य अभ्यास पत्रिका आहे. तृतीय वर्षास प्रवेशित प्रत्येक विध्यार्थाने मराठी, हिंदी, संस्कृत, पाली, अर्धमागधी, उर्दू या पैकी महाविद्यालयात शिकवल्या जाणाऱ्या कोणत्याही एका भाषा विषयाच्या MIL मधील अभ्यास पत्रिकेची निवड करणे अनिवार्य आहे.
- DSE 3, 4 मध्ये राज्यशास्त्र विषयाची अभ्यासपत्रिकाची निवड केल्यास DSC मधील तीन अभयपत्रिका पैकी एक अभयपत्रिका राज्यशात्र विषयाची निवडणे अनिवार्य आहे.
- DSC मधील अन्य दोन अभ्यासपत्रिका अन्य कोणत्याही दोन विषयांच्या निवडता येतील.
- SEC मध्ये महाविद्यालयात उपलबध असलेल्या कोणत्याही विषयाच्या कौशल्याधारित अभ्यासपत्रिकांची निवड करणे अनिवार्य आहे.
- GE मध्ये महाविद्यालयात विशेष स्तरावर उपलब्ध कोणत्याही दोन विषयांच्या प्रत्येकी एक अशा एकूण दोन आंतरविद्याशाखीय अभ्यास पत्रिकांची निवड करणे अनिवार्य आहे. (उदा. GE राज्यशास्त्र आणि GE मराठी).

EQUIVALENCE

Sr. No.	T.Y.B.A	Existing Pattern	CBCS Pattern (Since 2020-2021)
1.	Sem V	Compulsory English	AEC- English Communication
		- - - - - - - - - - - - - - - - - -	MIL -3 (Compulsory Course) (Marathi/ Hindi/ Sanskrit/ Urdu/ Pali/ Aradha Magadhi)
		Special Paper S-3	DSE 3A
		Special Paper S-4	DSE 4A
		General Paper G3	DSC 1E
		Optional	DSC 2E (General Paper of any subject)
			DSC 3E (General Paper of any subject)
		- - - - - - - - - - - - - - - - - -	SEC-3 Skill based Paper of any subject
		- - - - - - - - - - - - - - - - - -	GE 1 A (Interdisciplinary Paper of any subject)
		- - - - - - - - - - - - - - - - - -	GE 2 A (Interdisciplinary Paper of any subject)
2.	Sem VI	Compulsory English	AEC- English Communication
		- - - - - - - - - - - - - - - - - -	MIL -4 (Compulsory Course) (Marathi/ Hindi/ Sanskrit/ Urdu/ Pali/ Aradha Magadhi)
		Special Paper S-3	DSE 3 B
		Special Paper S-4	DSE 4 B
		General Paper G3	DSC 1 F
		Optional	DSC 2 F (General Paper of any subject)
			DSC 3 F (General Paper of any subject)
		- - - - - - - - - - - - - - - - - -	SEC- 4 Skill based Paper of any subject
		- - - - - - - - - - - - - - - - - -	GE- 1B (Interdisciplinary Paper of any subject)
		- - - - - - - - - - - - - - - - - -	GE- 2B (Interdisciplinary Paper of any subject)

T.Y.B.A. – 5 & 6 Sem

Political Science CBCS Pattern

Old & New Course Name w.e.f. 2020-21

SEMESTER V T.Y.B.A

Code	Old Course	Code New	New Course CBCS
Spl - 3	Western Political Thought	DSE 3A	Western Political Thinker Part - I
Spl - 4	Modern Political Analysis	DSE 4A	Political Sociology Part - I
Gen G3	Personal Administration and Management	DSC 1E	Indian Political Thinker Part - I
		SEC -3	Journalism and Mass Communication
		GE 1 A	Indian Civil Services

SEMESTER VI T.Y.B.A

Code	Old Course	Code New	New Course CBCS
Spl – 5	Western Political Thought	DSE 3B	Western Political Thinker Part - II
Spl – 6	Modern Political Analysis	DSE 4B	Political Sociology Part - II
Gen G-3	Personal Administration and Management	DSC 1F	Indian Political Thinker Part - II
		SEC -4	Political Journalism
		GE 1 B	Management and Good Governance

K.B.C.N.M. University, Jalgaon

Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester V

Paper Code : DSE-3A Western Political Thinker Part – I [w.e.f. June 2020]

Credit: 03
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective:

This paper focus on the classical ideas generated in the western world representation the ancient to the modern. The three thinkers have been selected who represent ideal, realistic, and liberal tradition. The test is interpreted both in historical and philosophical perspective. The course will narrate students the legacy of the thinkers and orient them about continuity and change within the western political tradition. It helps them to study the historical aspects western state and society. The main purpose of this paper is to acknowledge students with how the great masters explained and analysed political events and problems of their time and prescribes solutions.

CHAPTER 1: Aristotle

a) Theory of State.
b) Classification of State, Ideal state
c) Concept of Citizenship.
d) Views on Slavery.
e) Conception of Revolution , Evaluation.

CHAPTER 2: Machiavelli

a) Thought of Human Nature.
b) Views on Diplomacy.
c) Views on Religion and Morality.
d) Advice to King and views on Means and End.
e) Creator of Modern Political Thought, Evaluation

CHAPTER 3: Rousseau

a) Social Contract theory and its Importance.
b) Concept of General Will.
c) Views on Human Being Nature and Nature of State.
d) Views on Responsible Government, People's Sovereignty.
e) View on Liberty, Evaluation.

Reference Book

1. Bhandari & Sethi – Studies in Plato & Aristotle.
2. Jones W. T. – Master of Political Thought.
3. Sabine G. H. – History of Political Theory.
4. Ebensstein William Great Political Thinkers.
5. Sharma R.N. : Great Thinkers of the World.
6. Gupta R.C. : Great Political Thinkers.
7. गोविंद प्रसाद नेमा : हॅराल्ड लास्की के राजनीतिक विचारोका अध्ययन,बी.आर.पब्लीक,दिल्ली.
8. हरिदात्त वेदालंकार : आधुनिक राजनीती चिंतन, सरसावती सदन,मरतुरी
9. पी.बी.गौतम:प्रमुख राजनीतिक विचारक ,नाटीनाला पब्लिक हौस, दिल्ली.
10. आघाव विलास, ढाले व शेवाळे,पाश्चिमात्य राजकीय विचारवंत,चिन्मय प्रकाशन औरंगाबाद २००४
11. अमृतकार प्रशांत, पाश्चिमात्य राजकीय विचारवंत, चिन्मय प्रकाशन औरंगाबाद २००५
12. गव्हाणे महादेव, पाश्चिमात्य राजकीय विचारवंत ,निकिता प्रकाशन , लातूर-२०१३
13. देवरे,निकुंभ पाश्चिमात्य राजकीय विचारवंत , प्रशांत पब्लिकेशन ,जळगाव २००९
14. शृंगारपुरे अरविंद ,भारतीय तथा पाश्चिमात्य राजकीय विचारवंत श्रीमंगेश प्रकाशन,नागपूर
15. जोशी सुधाकर, पाश्चिमात्य राजकीय विचारवंत , विद्‌याकुल पाटील ,औरंगाबाद .
16. डोळे ना.य. प्रमुख पाश्चिमात्य राजकीय विचारवंत ,विद्‌याकुल पाटील ,औरंगाबाद .
17. भोळे भा.ल. पाशात्य राजकीय विचारवंत ,पिंपळपाटील नागपूर.
18. निकुंभ दिलीपसिंग : पाश्चिमात्य राजकीय विचारवंत प्रशांत पब्लिकेशन ,जळगाव २०१४.
19. नवलगुडेकर श.ना. : पाश्चिमात्य राजकीय विचारवंत
20. कुलकर्णी सुधाकर : पाश्चिमात्य राजकीय विचारवंत, अरुण प्रकाशन ,लातूर.
21. साबळे आर.डी. : पाश्चिमात्य राजकीय विचारवंत,अभय प्रकाशन ,नांदेड.

K.B.C.N.M. University, Jalgaon

Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester V

Paper Code : DSE-4 A Political Sociology Part – I [w.e.f. June 2020]

Credit: 03
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective

This paper deals with concepts and dimensions in Political Sociology. It highlights various aspects of political culture, process of political socialization and political modernization, comparatively. This course will help learners to understand dynamics within political action, power, and process in India and across the country. The main purpose of this course is to acquaint the students with interdisciplinary approach by connecting two separate disciplines.

CHAPTER 1: Political Sociology & Political System.

A) Political Sociology

i) Meaning, Definition, Nature ,Scope, Characteristics, and Importance

B) Political System

i) Meaning, Definition, Scope & Significance.

ii) Function of Political System.

CHAPTER 2: Political Culture & Political Socialization.

A) Political Culture

i) Meaning, Definition, Nature, basic elements of Political Culture.

ii) Means of change in Political Culture.

B) Political Socialization

i) Meaning, Definition, Process and Agencies of Political Socialization.

CHAPTER 3: Political Participation and Political Leadership.

A) Political Participation.

i) Meaning, Definition, and Factor affected on Political Participation.

ii) Levels of Political Participation.

iii) Political Apathy, Political cynicism and Political alienation.

B) Political Leadership

i) Meaning, Definition, Nature, and Characteristics of Political Leadership.

Reference Book

1. Bhargaval, Acharya : Political Theory : An Introduction.
2. Subhash C. Kashyap : Our Political System.
3. Ram Bakhan Mandal : Political Culture and Political Socialization.
4. Rush Michael and Althoff : An Introduction to Political Sociology.
5. Almond, Gabriel & Verba : The Civic Culture Princeton.
6. T.B. Bottomre : Political Sociology.
7. V. D. Mahajan : Modern Political Theory.
8. राजेंद्र कुमार शर्मा : राजकीय समाजशास्त्र, एटलांटिक पब्लिकेशन, दिल्ली २०१२.
9. शशिभूषण सिह : राजकीय समाजशास्त्रकडे विविध आयाम, अर्जुन पब्लिकेशन, नई दिल्ली २०१२.
10. फाडिया बी.एल. : राजकीय समाजशास्त्र, साहित्य भवन पब्लिकेशन २००८.
11. जोहरी जे.सी.समकालीन राजनीतिक सिद्धांत , स्टर्लिंग पब्लिकेशन, दिल्ली २००९.
12. डॉ. भा.ल. भोळे : आधुनिक राजकोय विश्लेषण
13. डॉ.ना.र.इनामदार.व डॉ.सु.ना.पुराणिक : आधुनिक राजकोय विश्लेषण
14. डॉ.शुभांगी राठी : आधुनिक राजकोय विश्लेषण, अथर्व प्रकाशन , जळगाव.
15. तिजारे घोगरेकर : राज्यशास्त्राचे सिद्धांत आणि राजकीय विश्लेषण मंगेश प्रकाशन,नागपूर.
16. पाटील महेंद्र : राजकीय समाजशास्त्र, प्रशांत पब्लिकेशन ,जळगाव २०१७.
17. पवार प्रमोद, पाटील महेंद्र : आधुनिक राजकोय विश्लेषण, प्रशांत पब्लिकेशन ,जळगाव २०१५.
18. देवगावकर श.गो. : राजकीय समाजशास्त्र मंगेश प्रकाशन,नागपूर २००१.
19. आवारी विलास, देवरे सुरेश : आधुनिक राजकोय विश्लेषण डायमंड पब्लिकेशन , पुणे २००१.
20. फड एस.बी. : उच्चतर आधुनिक राजकीय सिद्धांत विद्याबुक, पब्लिकेशन औरंगाबाद २०१४.
21. बेनके -गुढके सुवर्णा : राजकीय सिद्धांत प्रशांत पब्लिकेशन ,जळगाव २०१४.
22. भोळे, भा. ल,. राजकीय सिद्धांत आणि विश्लेषण, पिंपळापुरे बुक डिस्ट्रिब्युटर्स : नागपूर २००२.
23. श्रुती मेहता: राजकीय समाजशास्त्र .
24. इमानदार ना. र. व पुराणिक स. ना. राजकीय समाजशास्त्र , कॉन्टिनेन्टल प्रकाशन पुणे १९८४.
25. अलिम वकिल, ज्यौत्स्ना सोनखासकर. राजकीय समाजशास्त्र. प्रतिमा प्रकाशन : पुणे २०१५.
26. राठी शुभांगी, राजकीय विचारप्रणाली, कैलाश पब्लिकेशन्स : औरंगाबाद २०१३.
27. रावळ- ठाकरे शुभदा, तौलनिक राज्यशास्त्र, श्रीविद्या प्रकाशन, पुणे २००४.
28. पाटील, महेंद्र व पवार, प्रमोद, आधुनिक राजकीय विश्लेषण, प्रशांत प्रकाशन , जळगांव २०१५.

K.B.C.N.M. University, Jalgaon

Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester V

Paper Code : DSC-1 E Indian Political Thinker Part - I [w.e.f. June 2020]

Credit: 03
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective:

This is an introductory paper to the concept ideas and theories developed in India. It deals with the main sources of the political traditions in modern India and focusses the development of social Institution and as various patterns of politics that emerged in modern India. This course will encourage students to understand and decipher the diverse and often contesting ways in which the ideas of nationalism, democracy and social transformation were discussed in Pre- and Post-independence India. The main objective to study this paper is to understand key thinker's seminal contribution to the evolution of political theorizing in India.

CHAPTER 1: Dadabhai Naoroji

i) Political Thought – Liberalism.
ii) British Government Criticism and Loyalty or faith.
iii) Thought of Economic, Eco- drain and Moral Exploitation Theory.
iv) Views on Indian Swarajya.
v) Architect of Indian Nationalism Evaluation.

CHAPTER 2: Lokmanya Tilak

i) Political Thought.
ii) Chatusutri.
iii) Views on Social Reform.
iv) Thought on Congress Party, Homerule, Contestant Co- Operation and Revolutionary.
v) Role of Indian Freedom Movement, Evaluation.

CHAPTER 3: Mahatma Gandhi

i) Views on Truth and Non-Violence.
ii) Satyagraha, Means and End.
iii) Views on Religion and Spiritualisation of Politics.
iv) Untouchability, Communal Unity.
v) Views on State, Trusteeship theory, Evaluation.

Reference Book

1. Mahajan V.D. : Indian Political Thought.
2. Sudha J.P. : Indian Political Thought.
3. Karinakaram K.P. : Indian Politics Form Dadabhai Naoraji to Gandhi Gitanjali Prakashan, New Delhi.
4. Varma V.P., Laxminarayan Agarwal : Modern Indian Political Thought, Agra.
5. N.R.Inmdar : Political Thought and Leadership of Lokmanya Tilak , Concept pub. Delhi.
6. N. Jayapalan : Indian Political Thinkers , Atlantic Pub. New Delhi.
7. उर्मिला शर्मा, एस.के. शर्मा : भारतीय राजनैतिक चिंतन, अटलांटिक प्रकाशन , दिल्ली.
8. फाडिया. बी. एल. : आधुनिक राजनितीक चिंतन का इतिहास, साहित्य भवन पब्लि. आग्रा , दिल्ली.
9. आर. एम. गोखले : आधुनिक भारतीय राजकीय विचारवंत, कॉन्टीनेटल प्रकाशन, पुणे.
10. डॉ. ना.य. डोळे: भारतीय राजकीय विचारांचा इतिहास, कॉन्टीनेटल प्रकाशन, पुणे.
11. डॉ. ना.य. डोळे : भारतीय राजकीय विचारवंत, विद्या बुक्स पब्लिशर्स, औरंगाबाद.
12. भाल. भोळे : आधुनिक भारतातील राजकीय विचार, पिंपळापुरे अँण्ड कं. नागपुर.
13. बी. वाय. कुलकर्णी : भारतीय राजकीय विचारवंत , विद्याभारती प्रकाशन, लातुर.
14. डॉ. शुभांगी राठी : भारतीय राजकीय विचार, अथर्व प्रकाशन जळगाव, आवृत्ती २०१४.
15. डॉ. देवरे, डॉ. दिलीपसिंग निकुंभ : भारतीय राजकीय विचार, प्रशांत पब्लि. जळगाव २०१२.
16. डॉ वा. भा. पाटील :प्राचीन व आधुनिक भारतीय राजकीय विचारवंत, प्रशांत पब्लिकेशन्स जळगाव पुर्न. २०१३.
17. तळवलकर गोविंद : नवरोजी ते नेहरू.
18. आघाव विलास, ढाले व शेवाले : भारतीय राजकीय विचारवंत ,चिन्नाय प्रकाशन औरंगाबाद २०१४.
19. पाटील बी. बी. : भारतीय राजकीय विचारवंत, फडके प्रकाशन कोल्हापूर १९९७.
20. शिंदे ज. रा. : भारतीय राजकीय विचारवंत, कैलास पब्लि. औरंगाबाद १९८८.
21. देवगावकर श. गो : राजकीय विचारवंत, श्री साईनाथ प्रकाशन , नागपुर २००७.
22. शृंगारपुरे अरविंद : निवडक भारतीय राजकीय विचारवंत, श्री विद्या प्रकाशन, नागपुर २००३.
23. डॉ. देवरे विसपूते, निकुंभ , ठाकरे : आधुनिक भारतीय राजकीय विचारवंत, प्रशांत पब्लि. पुणे २००४.
24. निकम श्रीराम : गांधी - आंबेडकर, अस्पृश्यमुक्ती संघर्ष,लोकवाङ्मय गृह, मुंबई २००८.

K.B.C.N.M. University, Jalgaon

Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester V

Paper Code : SEC- 3 Journalism and Mass Communication [w.e.f. June 2020]

Credit: 02
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective:

This paper deals with concepts and dimensions in journalism, mass communication and political journalism. It highlights various aspects of press, media and its type and methods. This course will help learners to understand dynamics within Journalism, Political journalism and communication means and ends and his process in society and nation. This course will give introduction to the students of journalism aims to provide voters with the information to formulate their own opinion and participate in community, Local to global matter that will effect then political journalism is provided through different mediums in print, broadcast, online reporting, instant coverage of campaign politics, event news, government status, elections updates etc.

CHAPTER 1: Introduction to Journalism

i) Nature, Scope, and significance of Journalism.
ii) Press and Society.
iii) Press and Government.
iv) Freedom of Press and Constitutions.
v) Awareness and Socialization of Press.

CHAPTER 2: Introduction to Mass Communication

i) Nature and Process of Mass Communication.
ii) Media of Mass Communication.
iii) Types and typology of Audiences.
iv) Characteristics of Audiences.
v) Awareness and Socialization of Communication.

CHAPTER 3: Criticism of Journalism and Mass Communication.

i) Roles and Responsibilities of Journalism and Mass Communication.
ii) Changing Role of Press and Press Group.
iii) Model Code of ethics in Press.
iv) Use of New media.
v) Challenges before Journalism and Mass Communication.

Reference Book

1. Carey Jams W. & Cates A. (2004), Journalism, Libraries Unlimited, West Port, London.
2. Vir Bala & Agarwal, Essentials of Practical Journalism, Concept Publication Camp, New Delhi.
3. Roy Barun, (2001), Beginner's Guide to Journalism, Pustak Mahal, Mumbai.
4. R. Ramkrishnan, (1994), Press & Politics in an Indian State, Delta Publishing House, Hyderabad.
5. Kamath M.V., (2002), Professional Journalism, Vikas Publishing House Pvt. Ltd., New Delhi.
6. Menon K.S.R. Stylebook for Journalists & Writers, Konark Publishers.
7. Rangaswami ; Basic Journalism, Macmillan India.
8. चतुर्वेदी एन. पी., (२००५), जनसंचार एवं पत्रकारिता, पोईंटर पब्लिशर्स, जयपूर
9. लेले रा. के., (२००४), मराठी वृत्तपत्रांचा इतिहास, कॉन्टीनेटल प्रकाशन, पुणे.
10. कुलकर्णी प्रकाश , (१२ सप्टेंबर १९८९), माध्यम श्रीविद्या प्रकाशन, पुणे - ३०
11. खांबेटे सतिश व योगेंद्र ठाकुर, (१३ ऑगस्ट २००६), पत्रकारिता एक आव्हान, आमोद प्रकाशन, मुंबई.
12. कोळमकर अनंत. (२००६), बातमीदाराचा जाहीरनामा, हिमालया पब्लिशिंग हाऊस, मुंबई.
13. सोनकांबळे कविता, (२०१६), मीडिया आणि राजकारण, निर्मल प्रकाशन, नांदेड.
14. अकलूजकर, प्रसन्नकुमार, वृत्तपत्रविद्या , श्रीविद्या प्रकाशन, पुणे
15. कुलकर्णी. एस . के. पत्रकारिता मार्गदर्शक, पुणे विद्यार्थी गृह प्रकाशन, पुणे
16. तळवलकर गोविंद, अग्रलेख, प्रेस्टिज पब्लि. मुंबई
17. पाध्ये प्रभाकर , पत्रकारितेची मूलतत्वे.
18. गरुड विश्वनाथ, डिजिटल पत्रकारिता, गमभन प्रकाशन
19. बोराटे योगेश , सोशल मिडिया, अथर्व प्रकाशन , जळगाव
20. सामंत, सत्वशीला, २०१४, मराठी भाषा आणि शुद्धलेखन डायमंड पब्लि. पुणे.

K.B.C.N.M. University, Jalgaon

Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester V

Paper Code : GE 1A: Indian Civil Services [w.e.f. June 2020]

Credit: 03
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective:

This paper provides the conceptual framework of the civil services and good governance. It delves deep in meaning, origin, forms of civil services and good governance in general. This course will be helpful and encourage students to acknowledge civil services and good governance process in India. An intention of this paper is to understand origin, development, and challenges before good governance in India.

CHAPTER 1: Civil Services.

i) Meaning, Definition and Significance.
ii) Historical Background and Development of Civil services.
iii) Characteristics of Civil Services.
iv) Function and Role of civil Services.
v) Demerits and Committed of Civil Services.

CHAPTER 2: Recruitment, Training and Promotion.

A) Recruitment
   i) Meaning, Definition and Significance.
   ii) Methods, Types and Problem of Recruitment.
B) Training
   i) Meaning, Objects, and Importance of Training.
   ii) Methods and Types of Training.
C) Promotion.
   i) Meaning and Importance of Promotion.
   ii) Principles of Promotion.

CHAPTER 3: Union and State Public Services.

i) System of Recruitment in India.
ii) Methods of Determining Qualification (Written test, Syllabus, Interview, Performance Test, Psychological and Physical Test)
iii) Training and Appointment.
iv) Reservation Policy.
v) Retirement, Purpose, Kinds, Benefits.

Reference Book

1. Awasthi S Maheshwari : Public Administration.
2. White. L. D. : Introduction to the study of Public Administration.
3. Sinha. V. M. : Civil Services and Administrative Development.
4. Punjabi. K. L. : Civil Servants in India.
5. Bharadwaj : Civil Service Administration.
6. Goel. S. L. : Personnel Administration and Management.
7. Maheshwari. S. R. : Indian Administration.
8. फाडिया बी एल : भारत में लोकप्रशासन
9. कटारिया सुरेंद्र : कार्मिक प्रशासन
10. शर्मा व नंदलाल : लोकप्रशासन
11. तिवारी, भाटिया : लोकसेवी वर्गीय प्रशासन
12. वशिष्ठ निशा : भारत में नौकारशाही प्रणाली
13. बंग के आर : कर्मचारी वर्ग प्रशासन आणि वित्तीय प्रशासन
14. ठोंबरे हनिफ : कर्मचारी आणि वित्तीय प्रशासन
15. देशपांडे श्रीकांत : लोकप्रशासन
16. बिंगे सुभाष : कर्मचारी प्रशासन
17. बोरा बार्स : लोकप्रशासन शास्त्र
18. बोगले शांताराम : लोकप्रशासन सिद्धांत व कार्यपद्धती
19. देशमुख प्रभाकर : व्यवसाय व्यवस्थापनाची मु ल तत्वे
20. देशपांडे श्रीकांत : भारतीय प्रशासखिया प्रणाली
21. पाटील यशोदा : लोकप्रशासन
22. काळे अशोक : लोकप्रशासन
23. पाटील बी बी : लोकप्रशासन

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(3rd Cycle)

T.Y.B.A.

Political Science

CBCS Pattern (UGC)

Kavayitri Bahinabai Chaudhari

North Maharashtra University, Jalgaon

SEMESTER - VI

With effect from

2020-2021

K.B.C.N.M. University, Jalgaon

Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester VI

Paper Code : DSE-3 B Western Political Thinker Part – II [w.e.f. June 2020]

Credit: 03
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective:

This paper focus on the classical ideas generated in the western world representation the ancient to the modern. The three thinkers have been selected who represent ideal, realistic, and liberal tradition. The test is interpreted both in historical and philosophical perspective. The course will narrate students the legacy of the thinkers and orient them about continuity and change within the western political tradition. It helps them to study the historical aspects western state and society. The main purpose of this paper is to acknowledge students with how the great masters explained and analysed political events and problems of their time and prescribes solutions.

CHAPTER 1: John Stuart Mill

i) Views on Liberty.
ii) Views on Women Liberty,
iii) Mill on State.
iv) Representative Government.
v) Views on Utilitarianism, Evaluation.

CHAPTER 2: Karl Marks

i) Scientific & Dialectical Materialism.
ii) Materialistic Interpretation of History.
iii) Theory of Class Conflict and Surplus value.
iv) Views on state or Classless and Stateless Society.
v) Revolution Theory, Evaluation.

CHAPTER 3: Harold Laski

i) Pluralistic Theory of Sovereignty.
ii) Theory of Right.
iii) Views on Liberty.
iv) Views on Equality and Law.
v) Views on Capitalism, Evaluation.

Reference Book

1. Bhandari & Sethi – Studies in Plato & Aristotle.
2. Jones W. T. – Master of Political Thought.
3. Sabine G. H. – History of Political Theory.
4. Ebensstein William Great Political Thinkers.
5. Sharma R.N. : Great Thinkers of the World.
6. Gupta R.C. : Great Political Thinkers.
7. गोविंद प्रसाद नेमा : हॅराल्ड लास्की के राजनीतिक विचारोका अध्ययन,बी.आर.पब्लीक,दिल्ली.
8. हरिदात्त वेदालंकार : आधुनिक राजनीती चिंतन, सरसावती सदन,मरतुरी
9. पी.बी.गौतम:प्रमुख राजनीतिक विचारक ,नाटीनाला पब्लिक हौस, दिल्ली.
10. आघाव विलास, ढाले व शेवाळे,पाश्चिमात्य राजकीय विचारवंत,चिन्मय प्रकाशन औरंगाबाद २००४
11. अमृतकार प्रशांत, पाश्चिमात्य राजकीय विचारवंत, चिन्मय प्रकाशन औरंगाबाद २००५
12. गव्हाणे महादेव, पाश्चिमात्य राजकीय विचारवंत ,निकिता प्रकाशन , लातूर-२०१३
13. देवरे,निकुंभ पाश्चिमात्य राजकीय विचारवंत , प्रशांत पब्लिकेशन ,जळगाव २००९
14. शृंगारपुरे अरविंद ,भारतीय तथा पाश्चिमात्य राजकीय विचारवंत श्रीमंगेश प्रकाशन,नागपूर
15. जोशी सुधाकर, पाश्चिमात्य राजकीय विचारवंत , विद्‌याकुल पाटील ,औरंगाबाद .
16. डोळे ना.य. प्रमुख पाश्चिमात्य राजकीय विचारवंत ,विद्‌याकुल पाटील ,औरंगाबाद .
17. भोळे भा.ल. पाशात्य राजकीय विचारवंत ,पिंपळपाटील नागपूर.
18. निकुंभ दिलीपसिंग : पाश्चिमात्य राजकीय विचारवंत प्रशांत पब्लिकेशन ,जळगाव २०१४.
19. नवलगुडेकर श.ना. : पाश्चिमात्य राजकीय विचारवंत
20. कुलकर्णी सुधाकर : पाश्चिमात्य राजकीय विचारवंत, अरुण प्रकाशन ,लातूर.
21. साबळे आर.डी. : पाश्चिमात्य राजकीय विचारवंत,अभय प्रकाशन ,नांदेड.

K.B.C.N.M. University, Jalgaon

Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester VI

Paper Code : DSE-4 B Political Sociology Part – II [w.e.f. June 2020]

Credit: 03
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective

This paper deals with concepts and dimensions in Political Sociology. It highlights various aspects of political culture, process of political socialization and political modernization, comparatively. This course will help learners to understand dynamics within political action, power, and process in India and across the country. The main purpose of this course is to acquaint the students with interdisciplinary approach by connecting two separate disciplines.

CHAPTER 1: Political Development and Modernization.

A) Political Development
- i) Meaning, Definition, and Importance.
- ii) Various approaches of Political Development.

B) Political Modernization
- i) Meaning, Definition, and Importance.
- ii) Objectives and Dilemmas of Political Modernization.

CHAPTER 2: Political Communication and Public Opinion.

A) Political Communication
- i) Meaning, Definition, and Importance.
- ii) Means of Communication.

B) Public Opinion
- i) Meaning, Definition, and Importance.
- ii) Formation of Public Opinion.
- iii) Change in Public Opinion.

CHAPTER 3: Political Influence, Political Legitimacy.

A) Political Influence
- i) Meaning, Definition, and Importance.
- ii) Means of Power.

B) Political Legitimacy
- i) Meaning, Definition, and Importance.
- ii) Means of Legitimacy.

Reference Book

1. Bhargaval, Acharya : Political Theory : An Introduction.
2. Subhash C. Kashyap : Our Political System.
3. Ram Bakhan Mandal : Political Culture and Political Socialization.
4. Rush Michael and Althoff : An Introduction to Political Sociology.
5. Almond, Gabriel & Verba : The Civic Culture Princeton.
6. T.B. Bottomre : Political Sociology.
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Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester VI

Paper Code : DSC-1 F Indian Political Thinker Part - II [w.e.f. June 2020]

Credit: 03
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective:

This is an introductory paper to the concept ideas and theories developed in India. It deals with the main sources of the political traditions in modern India and focusses the development of social Institution and as various patterns of politics that emerged in modern India. This course will encourage students to understand and decipher the diverse and often contesting ways in which the ideas of nationalism, democracy and social transformation were discussed in Pre- and Post-independence India. The main objective to study this paper is to understand key thinker's seminal contribution to the evolution of political theorizing in India.

CHAPTER 1: Vinayak Damodar Savarkar.

i) Thought of Hindu Nationalism & Internationalism.
ii) Thought on Indian Freedom, Revolution, Ahinsa and Militarism.
iii) Thought of Social Reforms.
iv) Saftshrunkalas.
v) Views on Hindu Modernization.

CHAPTER 2 : Dr. Babasaheb Ambedkar.

i) Indian Constitution and Constitutionalism.
ii) Thought on Social and Political Democracy.
iii) Critique of Caste System.
iv) Views on Marxism.
v) Views on State Socialism, Evaluation.

CHAPTER 3 : Pandit Jawaharlal Nehru

i) Views on Democracy.
ii) Views on Democratic Socialism.
iii) Ideas on Planning and Development.
iv) Thought on Non-Alignment, Panchsheel, World Peace.
v) Architect of Modern India Evaluation.

Reference Book

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2. Sudha J.P. : Indian Political Thought.
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5. N.R.Inmdar : Political Thought and Leadership of Lokmanya Tilak , Concept pub. Delhi.
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9. आर. एम. गोखले : आधुनिक भारतीय राजकीय विचारवंत, कॉन्टीनेटल प्रकाशन, पुणे.
10. डॉ. ना.य. डोळे: भारतीय राजकीय विचारांचा इतिहास, कॉन्टीनेटल प्रकाशन, पुणे.
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23. डॉ. देवरे विसपूते, निकुंभ , ठाकरे : आधुनिक भारतीय राजकीय विचारवंत, प्रशांत पब्लि. पुणे २००४.
24. निकम श्रीराम : गांधी - आंबेडकर, अस्पृश्यमुक्ती संघर्ष,लोकवाङ्मय गृह, मुंबई २००८.

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Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester VI

Paper Code : SEC- 4 Political Journalism [w.e.f. June 2020]

Credit: 02
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective:

This paper deals with concepts and dimensions in journalism, mass communication and political journalism. It highlights various aspects of press, media and its type and methods. This course will help learners to understand dynamics within Journalism, Political journalism and communication means and ends and his process in society and nation. This course will give introduction to the students of journalism aims to provide voters with the information to formulate their own opinion and participate in community, Local to global matter that will effect then political journalism is provided through different mediums in print, broadcast, online reporting, instant coverage of campaign politics, event news, government status, elections updates etc.

CHAPTER 1: Political Journalism.

i) Meaning, Definition, Nature, Scope & Significance in Political Journalism.
ii) Sources of Political Journalism.
iii) Code of conduct for Political Journalism.
iv) Commercialization of Journalism.
v) Fear of Political Journalism.

CHAPTER 2: Methods of Political Journalism.

i) Commentary of Legislation.
ii) Political Interview.
iii) Press Conference.
iv) Political Analysis.
v) Reporting of Political Events.

CHAPTER 3: Politics and Media.

i) Influence of Media on Decision Making Process.
ii) Role of Media in Leadership Development.
iii) Role of Media in Awareness.
iv) Party Spirited Newspapers, Paid News.
v) Challenges before Political Journalism and Media.

Reference Book

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3. Roy Barun, (2001), Beginner's Guide to Journalism, Pustak Mahal, Mumbai.
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14. अकलूजकर, प्रसन्नकुमार, वृत्तपत्रविद्या , श्रीविद्या प्रकाशन, पुणे
15. कुलकर्णी. एस . के. पत्रकारिता मार्गदर्शक, पुणे विद्यार्थी गृह प्रकाशन, पुणे
16. तळवलकर गोविंद, अग्रलेख, प्रेस्टिज पब्लि. मुंबई
17. पाध्ये प्रभाकर , पत्रकारितेची मूलतत्वे.
18. गरुड विश्वनाथ, डिजिटल पत्रकारिता, गमभन प्रकाशन
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20. सामंत, सत्वशीला, २०१४, मराठी भाषा आणि शुद्धलेखन डायमंड पब्लि. पुणे.

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Syllabus for T.Y.B.A. (C.B.C.S. Pattern)

Political Science, Semester VI

Paper Code : GE 1B: Management and Good Governance [w.e.f. June 2020]

Credit: 03
Lectures: 52

Total Marks: 100
Internal: 40
External: 60

Course Objective:

This paper provides the conceptual framework of the civil services and good governance. It delves deep in meaning, origin, forms of civil services and good governance in general. This course will be helpful and encourage students to acknowledge civil services and good governance process in India. An intention of this paper is to understand origin, development, and challenges before good governance in India.

CHAPTER 1: Good Governance.

i) Meaning and Definition.
ii) Silent Features of Good Governance.
iii) Elements of Good Governance.
iv) Obstacles in the way of Good Governance.
v) Challenges before Good Governance.

CHAPTER 2: Management.

i) Meaning, Definition and Types of Management.
ii) Characteristic of Management.
iii) Approaches of Management.
iv) Functions of Management, POSDCORB.
v) Test of Good Management and Importance.

CHAPTER 3: Administrative Leadership.

i) Meaning and Approaches of Administrative Leadership.
ii) Development of Administrative Leadership.
iii) Essential Qualities of Administrative Leads.
iv) Functions of Administrative Leadership.
v) Relationship of Good Governance and Administration.

Reference Book

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3. Sinha. V. M. : Civil Services and Administrative Development.
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5. Bharadwaj : Civil Service Administration.
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7. Maheshwari. S. R. : Indian Administration.
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9. कटारिया सुरेंद्र : कार्मिक प्रशासन
10. शर्मा व नंदलाल : लोकप्रशासन
11. तिवारी, भाटिया : लोकसेवी वर्गीय प्रशासन
12. वशिष्ठ निशा : भारत में नौकारशाही प्रणाली
13. बंग के आर : कर्मचारी वर्ग प्रशासन आणि वित्तीय प्रशासन
14. ठोंबरे हनिफ : कर्मचारी आणि वित्तीय प्रशासन
15. देशपांडे श्रीकांत : लोकप्रशासन
16. बिंगे सुभाष : कर्मचारी प्रशासन
17. बोरा बार्स : लोकप्रशासन शास्त्र
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21. पाटील यशोदा : लोकप्रशासन
22. काळे अशोक : लोकप्रशासन
23. पाटील बी बी : लोकप्रशासन