HEMCHANDYADAV VISHWAVIDYALAYA, DURG (C.G.)

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SCHEME OF EXAMINATION
&
SYLLABUS
of
M.Sc. (Physics) Semester Exam

UNDER

FACULTY OF SCIENCE

Session 2023-24

(Approved by Board of Studies)
Effective from June 2023

11/5/2023

11/05/23

HEMCHAND YADAV VISHWAVIDYALAYA, DURG (C.G.)

Syllabus for M.Sc. Physics (Semester System)

Semester – I (2023-2024)

Paper – I	: Mathematical Physics
Paper – II	: Classical Mechanics
Paper – III	: Electrodynamics & Plasma Physics
Paper – IV	: Electronics
Laboratory Course I-A	: General & Optics
Laboratory Course I-B	: Electronics

Semester – II (2023-2024)

Paper – I	: Quantum Mechanics - I
Paper – II	: Statistical Mechanics
Paper – III	: Electronic & Photonic Devices and Optical Modulators
Paper – IV	: Computational Methods & Programming
Laboratory Course I-A	: Numerical Analysis & Computer Programming
Laboratory Course I-B	: Digital Electronics &Microprocessor

Semester – III (2024-2025)

Paper – I	: Quantum Mechanics - II
Paper – II	: Atomic & Molecular Physics
Paper – III	: Solid State Physics - I
Paper – IV	: (A) Astronomy & Astrophysics - I (B) Electronics (Communication) - I (C) Physics of Nano-material - I (D) Space Physics - I
Laboratory Course III-A	: Material Science & General
Laboratory Course III-B	: Astronomy & Astrophysics **OR** Electronics (Communication **OR** Physics of Nano-material **OR** Space Physics

Semester – IV (2024-2025)

Paper – I	: Nuclear & Particle Physics
Paper – II	: Laser Physics and Applications
Paper – III	: Solid State Physics - II
Paper – IV	: (A) Astronomy & Astrophysics - II (B) Electronics (Communication) - II (C) Physics of Nano-material - II (D) Space Physics - II

Project Work

The Syllabus for M.Sc. Physics (Semester System) is hereby approved by the members of the Board of Studies.

11/5/2023

M. Sc. - PHYSICS

M.Sc. in Physics is a full time 2-year (4-semesters course). There will be four theory papers, and two laboratory courses/project in each semester. In each semester, there will be two internal examinations/assessments. Semester-wise course structure along with distribution of marks is given below:

Semester I

Name of the Paper	Marks					Credits
	Theory		Internal		Total	
	Max	Min	Max	Min		
1. Mathematical Physics	80	16	20	04	100	4
2. Classical Mechanics	80	16	20	04	100	4
3. Electrodynamics & Plasma Physics	80	16	20	04	100	4
4. Electronics	80	16	20	04	100	4
A : General & Optics	-		-		100	2
Laboratory Course I-B : Electronics	-		-		100	2
Total Marks					**600**	**20**

Total Marks for Semester I = 600 & Credit = 20

Semester II

Name of the Paper	Marks					Credits
	Theory		Internal		Total	
	Max	Min	Max	Min		
1. Quantum Mechanics-I	80	16	20	04	100	4
2. Statistical Mechanics	80	16	20	04	100	4
3. Electronic & Photonic Devices and Optical Modulators	80	16	20	04	100	4
4. Computational Methods & Programming	80	16	20	04	100	4
Laboratory Course II-A : Numerical Analysis & Computer Programming	-		-		100	2
Laboratory Course II-B : Digital Electronics & Microprocessor	-		-		100	2
Total Marks					**600**	**20**

Total Marks for Semester II = 600 & Credit = 2

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Semester III

Name of the Paper	Marks					Credits
	Theory		Internal		Total	
	Max	Min	Max	Min		
1. Quantum Mechanics-II	80	16	20	04	100	4
2. Atomic & Molecular Physics	80	16	20	04	100	4
3. Solid State Physics-I	80	16	20	04	100	4
4. (A) Astronomy & Astrophysics-I (B) Electronics (Communication)-I (C) Physics of Nano-material-I (D) Space Physics-I	80	16	20	04	100	4
Laboratory Course III-A Materials Science & General	-		-		100	2
Laboratory Course III-B : Astronomy & Astrophysics **OR** : Electronics (Communication) **OR** : Physics of Nano-material **OR** : Space Physics	-		-		100	2
Total Marks					**600**	**20**

Total Marks for Semester III = 600 & Credit = 20

Semester IV

Name of the Paper	Marks					Credits
	Theory		Internal		Total	
	Max	Min	Max	Min		
1. Nuclear & Particle Physics	80	16	20	04	100	4
2. Laser Physics and Applications	80	16	20	04	100	4
3. Solid State Physics -II	80	16	20	04	100	4
4. (A) Astronomy &Astrophysics-II (B) Electronics(Communication)-II (C) Physics of Nano-material-II (D) Space Physics-II	80	16	20	04	100	4
Project Work	-		-		200	4
Total Marks					**600**	**20**

Total Marks for Semester IV = 600 & Credit = 20

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In Each Semester

MAXIMUM MARKS TOTAL	PASS PER TH.	PR.
600	36	36

In semester IV, Project work in Solid State Physics/ Astronomy & Astrophysics/ Electronics/ Physics of Nano-materials/ Space Physics will lead to specialization in the respective area. It will be primarily based on research oriented topics. On completion of the project, student will submit project report in the form of dissertation which will be examined by an external examiner. The examination of project work shall consist of (a) Presentation and (b) comprehensive viva-voce.

Marks-distribution for Laboratory Courses and Project Work:

(a) Laboratory courses (Semesters I-III):

Sessional	: 20Marks
Viva	: 20Marks
Experiment	: 60Marks

(b) Project Work (Semester IV):

Report–Dissertation	:	60 Marks
Presentation	:	100 Marks
Comprehensive viva-voce	:	20 Marks
Internal assessment	:	20 Marks

Note: Paper IV of both Semesters III and IV is a major elective course. Student has to opt for any one of the courses: (A) or (B) or (C) or (D). The commencement of any one of the major elective paper is subjected to the availability of basic infrastructural facilities viz. expert faculty, laboratory etc.

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Detailed Course Content

Semester – I

PAPER-I: MATHEMATICAL PHYSICS

Unit-I: Vector space and Matrices, Linear independence, Bases, dimensionality, Inner product, Linear transformation, matrices, Inverse, Orthogonal and Unitary matrices, Independent element of a matrix, Eigen values and Eigen Vectors, Diagonalization, Complete orthonormal sets of functions.

Unit-II: Complex Variables: Cauchy- Riemann condition, analytic functions, Cauchy's theorem, Cauchy integral formula, Laurent series, singularities, residue theorem, contour integration, evaluation of definite integrals, problems.

Unit-III: Differential equations, first order differential equation, second order differential equation with constant coefficients, second order linear ODEs with variable coefficients, Solution by series expansion, nonhomogeneous differential equations and solution by the method of Green's functions.

Unit-IV: Special functions, Legendre, Bessel, Hermite and Laguerre functions with their physical applications, generating functions, orthogonality conditions, recursion relations,

Unit-V: Integral transforms, Fourier integral and transforms, inversion theorem, Fourier transform of derivatives, convolution theorem, Laplace Transform(LT), LT of Derivatives, Inverse LT, Fourier series; properties and applications, discrete Fourier transform.

TEXT AND REFERENCE BOOKS

1. Mathematical Methods for Physics, by G. Arfken.
2. Matrices and Tensors for Physicist, by A. W. Joshi.
3. Advanced Engineering Mathematics, by E. Kroyazig.
4. Special Functions, by E. B.Rainville.
5. Special Functions, by W.W.Bell.
6. Mathematical Method for Physicist and Engineers, by K. F. Relly, M. P. Hobson and S. J.Bence
7. Mathematics for Physicists, By Marry L.Boas.

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Paper - II: CLASSICAL MECHANICS

Unit-I Preliminaries, Newtonian mechanics of one and many particle systems, Conservation laws, Constraints & their classification, Principle of virtual work, Generalized coordinates, D'Alembert's principle and Lagrange's equations, Velocity-dependent potentials and dissipation function, Simple applications of the Lagrangian formulation, Hamilton's principle, Lagrange's equations from Hamilton's principle, Conservation theorems and Symmetry properties, Energy function and the conservation of energy.

Unit-II The Hamiltonian formulation of mechanics, Legendre transformations and the Hamilton's equations of motion, Cyclic coordinates and Conservation Theorems, Hamilton's equations from Hamilton's principle, The principle of least action, Simple applications of the Hamiltonian formulation.

Unit-III Canonical transformations with examples, The harmonic oscillator, Poisson's brackets, Equations of motion and conservation theorems in the Poisson Bracket formulation. Hamilton-Jacobi (HJ) theory: The HJ equation for Hamilton's principal function, Harmonic oscillator as an example of the HJ method, The HJ equation for Hamilton's characteristic function, The action-angle variables

Unit –IV The Central force: Two-body central force problem and its reduction to the equivalent one-body problem, The equations of motion and first integrals, The equivalent one-dimensional problem and classification of orbits, The differential equation of the orbit, Closure and stability of orbits, The Kepler problem, Scattering in a central force field: Rutherford scattering.

Unit – V Rigid body dynamics, The Euler angles, Euler's theorem on the motion of a rigid body, Rate of change of a vector, The Coriolis force, Angular momentum and Kinetic energy of motion about a point, The Euler equations of motion of rigid bodies. Formulation of the problem of small oscillations, The Eigen-value equation and the principal axis transformation, Frequencies of free vibration and normal coordinates, Free vibration of linear triatomic molecule.

TEXT AND REFERENCE BOOKS

1. Classical Mechanics, By N.C. Rana and P.S. Joag (Tata McGraw-Hill,1991)
2. Classical Mechanics, by H.Goldstein (Addison Wesley,1980)
3. Classical Mechanics, by H.Goldstein, C Poole & J Fafko (PearsonEducation, Inc,2002)
4. Mechanics, by A.Sommerfeld, (Academic press,1952)
5. Introduction to Dynamics by Perceival and D.Richaeds(Cambridgeniversity, press ,1982).

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Paper-III: ELECTRODYNAMICS & PLASMA PHYSICS

Unit-I Maxwell's equations, vector and scalar potentials and the wave equation, Gauge transformations, Lorentz gauge, Coulomb gauge, Green function for the wave equation, four-vectors, mathematical properties of the space-time in special relativity, matrix representation of Lorentz transformation, covariance of electrodynamics, transformation of electromagnetic fields.

Unit-II Radiation by moving charges, Lienard-Wiechert potential and fields for a point charge, total power radiated by an accelerated charge- Larmor's formula and its relativistic generalization, angular distribution of radiation emitted by an accelerated charge, radiation emitted by a charge in arbitrary extremely relativistic motion, distribution in frequency and angle of energy radiated by accelerated charge.

Unit -III Bremsstralung: emission from single-speed electrons, thermal Bremsstralung emission and absorption, Synchrotron radiation: spectrum of synchrotron radiation, spectral index for power law electron distribution, transition from Cyclotron to Synchrotron emission, Cherenkov radiation

Unit-IV Plasma: definition, Debye shielding phenomenon and criteria for plasma, motion of charged particles in electromagnetic field; Uniform E & B fields, Electric field drift, Non-uniform magneto static field, Gradient B drift, Parallel acceleration and magnetic mirror effect, Curvature drift, adiabatic in variants.

Unit-V Elementary concepts of plasma kinetic theory, the Boltzmann equation, the basic plasma phenomena, plasma oscillations. Fundamental equations of magneto- hydrodynamics (MHD), Hydrodynamics Waves; Magneto sonic and Alfven waves, Magnetic viscosity and magnetic pressure, plasma confinement schemes.

REFERENCE BOOK:

1. J.D. Jackson-classical electrodynamics.
2 Rybicki & Lightman: Radiative Processess in Astrophysics
2 Panofsky and Phillips: Classical electricity and magnetism.
3 Bittencourt Plasma physics.
4 Chen: Plasma physics.

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Paper - IV: ELECTRONICS

Unit-I Operational Amplifier- Basic Op.Amp. Differential amplifier, the emitter coupled Difference Amp, Transfer characteristics of a Differential Amp, an example of an IC Op.-Amp., off set error voltage and currents, measurement of Op.-Amp. Parameters, frequency response of Op-Amp. Linear analog systems: Basic Op.-Amp. Applications, Analog integration and differentiation, Electronic analog computation, Non-linear analog systems: Comparators, Wave form generators.

Unit-II Combinational Logic Gate – Basic logic gates: OR, AND and NOT gates, NOR and NAND gates, Boolean algebra, DeMorgan's theorem, Exclusive OR gate, characteristics of logic families, saturated logic families: RTL, DCTL, non- saturated logic families: TTL and ECL, Unipolar logic families.

Unit -III Sequential Logic, Flip-flops: RS Flip-flop, level clocking, Edge triggered Flip Flops, D Flip flops. JK Flip-flops, J.K. master slave Flip-flops, Registers: buffer, shift and control shift registers, counters: ripple synchronous & ring counters, tri - state registers, Buffer: controlled buffer Register, Bus organized structure, Latch, multiplexer, De multiplexer, decoder, ALU Memories: RAM, ROM, PROM, EPROM, A/D and D/A converters.

Unit-IV Microprocessors – Building concept of microprocessors, developing inside of microprocessor , Instruction codes ,Instruction Register ,Introducing RESET Pin, Introducing on chip oscillator, Interfacing I/O devices, Introducing Interrupt lines :Stack, Push, Pop operation ,delay in servicing interrupts, multiply interrupts, location for interrupts .Introducing slow and fast data transfer, Status of microprocessor, interrupt pins, General purpose Register, flag Register, Increment/decrement register. Features of 8085 microprossor. Pin diagram of 8085, block diagram of 8085. CPU of a microprocessor, timing and control, system timings and interrupt timings of 8085, registers in 8085, interfacing memory and I/O devices- a preliminary ideas. Number system, Floating Point notation.

Unit - V Instructions set of 8085, types of instructions- Data transfer group, Arithmetic logic, branch group, stack I/O machine control group, addressing mode of Intel 8085, examples of Assembly language programs of 8085, summing of two 8-bit numbers to result a 16-bit number, summing two 16-bit number, multiplying two 8-bit number to result a 16-bit product, block transfer of data from one memory block to other, BCD to hexadecimal data, finding the largest number in a series.

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Text and reference books:

1. Integrated Electronics: J. Millman R.C.C. Halkias.
2. Electronics devices and circuit theory, by Robert Boylested and Louis Nashdaky PHI, New Delhi-110001,1991.
3. Operational amplifier linear integrated circuits, by Romakanth A. GayakwadPHI, second edition1991.
4. Digital computer electronics- An introduction tomicrocomputers-A.P.Malvino.
5. Digital finances and applications, by A.P. Malvino and Donald P.Leach,Tata McGraw Hill company, New Delhi 1993.
6. Microprocessor architecture, programming applications with 8085/8086 by Ramesh S.Gaonkar, Willey-Eastern limited1987.
7. Introduction to microprocessors – A.P.Mathur (TataMcGraw).
8. Microprocessors-Theory and applications- M.Hafiquizzaman (Prenticehall).
9. Microprocessors fundamentals- SchanmiOutling Service AuthorPocerL.Tokheim.
10. Integrated circuits : K KBotkar(Khannapublications)
11. Digital Electronics : R P Jain (Tata McGrawHill)
12. Microprocesss : BRam
13. 8-bit microprocessor : V.J.Vibhute& P.B. Borole(Tecn-Max Publication,Pune)

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Laboratory Course

Lab I-A: General & Optics (Any ten)

1. Determination of band gap of semiconductor by four probmethod.
2. Measurement of Hall Coefficient of given semiconductor: identification of type of semiconductor and estimation of charge carrierc on centration.
3. Determination of wavelength of mercury light by constant deviation spectrometer using Hartmann formula.
4. Ultrasonic velocity in a liquid as a function of temperature using ultrasonic interferometer.
5. Experiment on transmission line (A) Determination of characteristics impedance, (B) Study of voltage distribution.
6. Determination of the Curie temperature of ferromagnetic material.
7. Determination of forbidden gap of a diode by plotting reverse saturation current as a function of temperature.
8. Determination of operating voltage and study the characteristics of a G Mtube.
9. Determination of operating voltage of a GM tube and determine the linear absorption coefficient.
10. Determination of operating voltage of a GM tube and verify inverse-square law.
11. Determination of short half-life of a given source which can be obtained from a mini generator or produced with a neutron source by activation.
12. X-ray diffraction by Telexometer.
13. Determination of ionization potential of Lithium/Mercury.
14. Determination of e/m of electron by Normal Zeeman Effect using Febry-Perot Etalon.
15. Determination of Dissociation energy of iodine (I_2) Molecule by photography, the absorption bands of I_2 in the visible region.
16. Measurement of wavelength of He-Ne Laser light using a ruler and thickness of thin wire by the laser.
17. To study Faraday Effect using He-Ne Laser.

Lab I-B: Electronics (Any ten)

1. Design & Study of Regulated Power supply.
2. Study of Transistor Amplifiers in CE, CB, and CC modes.
3. Study of Transistor Bias Stability.
4. Study of Astable, Monostable and Bistable Multivibrator.
5. Study of Silicon Controlled Rectifier.
6. Experiment of Uni – Junction Transistor and its application.
7. Experiment of FET and MOSFET characterization and application as an amplifier.
8. Study of Differential. Amplifier.
9. Basic Logic gates and verification of their Truth-Tables.
10. Combinational logic gates and verification of De-Morgan's Theorem.
11. Study of Basic Operational Amplifier(741).
12. Study of Opto- Electronics Devices.

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Semester – II

PAPER - I: QUANTUM MECHANICS-I

Unit - I Inadequacy of classical mechanics, Planck's quantum hypothesis and radiation law, Photoelectric effect, De-Broglie's theory. Schrödinger equation, continuity equation, Ehrenfest theorem, admissible wave functions, stationary states, one-dimensional problems; potential well and barriers, Schrödinger equation for harmonic oscillator and its solution, uncertainty relations, states with minimum uncertainty product.

Unit –II Superposition principle, general formalism of wave mechanics, representation of states and dynamical variables, commutation relationship, completeness and normalization of Eigen functions, Dirac-delta function, Bra & Ket notation, matrix representation of an operator, harmonic oscillator and its solution by matrix method, Heisenberg equation of motion.

Unit -III Angular momentum in quantum mechanics, commutation relationships, Eigen values, Spin angular momentum, Pauli`s matrices, addition of angular momentum, Clebsch-Gordon coefficients.

Unit – IV Central force problem, spherically symmetric potentials in three dimensions, separation of wave equation, parity, three-dimensional square-well potential and energy levels, the hydrogen atom; solution of the radial equation, energy levels and stationery state wave functions, discussion of bound states, degeneracy.

Unit –V Time- independent perturbation theory, non-degenerate case, first order and second order perturbations with the example of an oscillator, degenerate cases, removal of degeneracy in second order, Zeeman effect without electron spin, first-order Stark effect in hydrogen, perturbed energy levels, correct Eigen function, occurrence of permanent electric dipole moments.

TEXT AND REFERENCE BOOKS:

1. L.I. Schiff: quantum mechanics (McGraw-Hill).
2. S. Gasiorowicz, Quantum Physics(Wiley).
3. Landau and Lifshitz : Non-relativistic quantum mechanics.
4. B.Craseman and Z.D.Powell: quantum mechanics (Addison Wesley)
5. A.P. Messiah: Quantum Mechanics.
6. J.J. Sakurai : Modern Quantum Mechanics.
7. Mathews and Venkatesan : Quantum Mechanics.

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PAPER – II: STATISTICAL MECHANICS

Unit-I Foundation of statistical mechanics: macroscopic and microscopic states, contact between statistical and thermo dynamical quantities, physical significance of Ω(N, V, E), the classical gas, entropy of mixing and Gibb's paradox, phase space of classical system, Liouville`s theorem and its consequences, quantum states and phase space.

Unit- II Elements of ensemble theory – A system in micro canonical, canonical, and grand canonical ensembles, partition functions, physical significance of statistical quantities, example of classical system, energy and energy-density fluctuations and mutual correspondence of various ensembles.

Unit -III Formulation of quantum statistics – Quantum mechanical ensemble theory, density matrix, statistics of various quantum mechanical ensembles, system composed of indistinguishable particles.
Theory of simple gases –Ideal gas in various quantum mechanical ensemble, Maxwell-Boltzmann, Bose-Einstein, Fermi-Dirac distributions, statistics of occupation number.

Unit - IV Ideal Bose and Fermi gases -Thermodynamical behavior of an ideal Bose gas, Bose-Einstein condensation and, elementary excitations in liquid helium II, Thermodynamic behavior of an ideal Fermi gas, the electron gas, nonrelativistic and relativistic degenerate electron gas, theory of white dwarf stars.

Unit -V Statistical Mechanics of interacting systems – the method of cluster expansion for a classical gas, Virial expansion of the equation of state. Theory of phase transition – general remark on the problem of condensation, Fluctuations: thermodynamic fluctuations, Spatial correlation in a fluid Brownian motion: Einstein Smoluchowski theory of Brownian motion.

TEXT & REFERENCE BOOKS –

1. R. K. Pathria, Statistical Mechanics (PergamonPress).
2. L. D. Landau & E. M. Lifshitz (Butter worth and HeinemannPress).
3. FederickReif, Fundamental of statistical and thermal physics (McGraw-Hill publishers).
4. Kerson Huang, Statistical Mechanics (WileyEastern).

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PAPER –III: ELECTRONIC & PHOTONIC DEVICES AND OPTICAL MODULATORS

Unit– I Special Bipolar devices: Thyristors- the four-layer diodes and their basic characteristics, Schottky diode, three terminal thyristor, Diac &Triac, SCR, UJT, Field controlled Thyristors.

Unit- II Unipotar Devices : JFET, MESFET and MOSFET, basic structure, working and device I-V characteristics, small signal equivalent circuit for Microwave performance Introduction to MIS and MOS diodes, charge coupled devices (CCDs), basic structure and working principle , MOSFET-basic device characteristics, types of MOSFET.

Unit-III Special Microwave Devices: Tunnel diode and backward diode- basic device characteristics, IMPATT diodes and their static and dynamic characteristics, Transfer electron devices- transferred electron effect, Gunn diodes.

Unit-IV Photonic Devices: Radiative transitions, LEDs, Visible and infrared SC lasers; Photo detectors; Photo conductor, & Photodiode, Solar cells, Solar radiation and ideal conversion efficiency, p-n junction solar cells, Hetero junction. Interface thin film solar cells.

Unit -V Optical Modulators and Display Devices: Modulation of light- Birefringence, Optical activity, Electro-optic, Magneto-optic and Acoustic- optic effects, Materials exhibiting these properties, Non-linear optics. Display devices: Luminescence, Photo-luminescence, Electro-luminescence, Liquid crystal displays, Numeric displays.

TEXT & REFERENCE BOOKS-

1. Semiconductor Devices – Physics and Technology, by S M Sze,Wiley(1985)
2. Introduction to semiconductor device, M.S. Tyasi, John Wiley andsons
3. Measurement, Instrumentation and experimental design in physics and engineering by M.Sayer and A.Mansingh, Prentice Hall India2000
4. Optical electronics by Ajay Ghatak and K.Thyagarajah, Cam.Univ.Press.
5. Opto electronics – An introduction: J.Wilson and JFB Hawkes (Eastern Economy Edition).
6. Optical Communications: J.H. Franz and V.K. Jain(Narosa).

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PAPER – IV: COMPUTATIONAL METHODS AND PROGRAMMING

Unit–I Methods for determination of zeroes of linear and nonlinear algebraic equations and transcendental equations, convergence of solutions. Solution of simultaneous linear equations, Gaussian elimination, pivoting, iterative method, matrix inversion.

Unit –II Finite differences, interpolation with equally spaced and unevenly spaced points, curve fitting, polynomial least squares and cubic spline fitting. Numerical differentiation and integration, Newton-Cotes formulae, error estimates, Gauss method.

Unit –III Numerical solution of ordinary differential equations, Euler and Runge-Kutta methods, predictor-corrector method, elementary ideas of solutions of partial differential equations.

Unit- IV Elementary information about digital computer principles, compilers, interpreters and operating systems (Windows/Linux) Fortran programming, flow charts, integers and floating point arithmetic, expressions, built in functions.

Unit-V Executable and non-executable statements, assignments, control and input-output statements, subroutines and functions; The statement functions, main features of functions and subroutines, subprogram, function subprogram, overall structure of FORTRAN program, external statement, subroutine subprogram, common statement, equivalence statement, operations with files-open and close statement, Format statements, field specifications.

TEXT AND REFERENCE BOOKS

1. Sastr: Introductory Methods of NumericalAnalysis.
2. Rajaraman: NumericalAnalysis.
3. Antia: Numericalmethods.
4. Raja Raman: FORTRANprogramming.

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Laboratory Course

Lab II-A: Numerical Analysis & Computer Programming (Any ten)

1. To solve simultaneous Linear equation by Gauss Elimination method.
2. To calculate the root of a transcendental equation by Newton – Raphsons method.
3. Solving the system of linear simultaneous equation by Gauss Serdel method.
4. Numerical Integration by Simpson's 1/3Rule.
5. Solving simultaneous Linear equation by Gauss-Jordon method.
6. Solution of Differential equation by Euler's Method.
7. To invert a given matrix by Gauss-Jordon Method.
8. Solution of Differential equation by Runga Kutte Method.
9. To fit the given data in a straight line by linear regression Method.
   a) WAP to find the Largest of n number of series.
   b) To calculate the standard deviation of a given set of data.
10. To write a program to compute the complex roots of a given polynomial of N^{th}degree by Grafffe's Method.
11. To write a program to compute the Eigen values of a given matrix.
12. To integrate a given function by: (a) Trapezoidal method or by (b) Gauss Quadrature.
13. To find solutions of Ist order, ordinary differential equation by Taylor method

Lab II-B: Digital Electronics & Microprocessor (Any ten)

1. Study of R-S, D/T, J-KFlip-Flops.
2. Study of counters: Ripple, Mode 3, Mode 5counters.
3. Study of ShiftRegister.
4. Study of R-2R D/AConverter.
5. Study of Random Access Memory (RAM) Read Only Memory.(ROM)
6. Study of A/DConverter.
7. Experiment with Microprocessor:-I
   (a) Convert BCD in toHEXADECIMPL
   (b) To transfer group of date blocks from one location to anotherlocation.
8. Experiment with microprocessor: -II
   (a) To write programs for addition of two 1 byte data giving results of 2bytes.
   (b) To write programs for multiplication of two 1 byte data giving results of 2bytes.
9. (a) To add 2 16-BIT numbers stored in locations from x xxx to x xxx + 3 andadd them store the results from x xxx + 4 to x xx x+6 memorylocation
   (b) To find the largest of n numbers of aseries.
10. To arrange N numbers in an ascendingorders.
11. Experiments withMicroprocessor.
    (a) Convert BCD in to binary andvice-versa.
    (b) To transfer group of data blocks from one location to anotherlocation.
    (c) To write programs for addition of two 1byte data giving result of 2bytedata
    (d) To write programs for multiplication of two 1 byte data giving result of 2bytedata.
12. Logic gate study DTL andRTL.
13. Study ofadder/Subractor.

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Semester – III

PAPER –I: QUANTUM MECHANICS -II

Unit-I Variational method, expectation value of energy, application to excited states, ground state of He-atom, Zero point energy of one dimensional harmonic oscillator, Vander-waals interaction, the W.K.B. approximation, approximate solutions, asymptotic nature of the solution, solution near turning point, connection formulae, energy levels of a potential well and quantization rule.

Unit-II Theory of scattering: differential and total scattering cross section, wave mechanical picture of scattering & the scattering amplitude, Green's functions and formal expression for scattering amplitude, The Born approximation and its validity, Partial wave analysis, asymptomatic behavior of partial waves and phase shifts, optical theorem, scattering by a square well potential, scattering by a hard sphere, scattering by a Coulomb potential.

Unit - III Time-dependent perturbation theory, first order perturbation, Harmonic perturbation, Fermi`s Golden rule, Ionization of a H-atom, absorption and induced emission, Selection rules. Identical particles, symmetric and anti-symmetric wave functions

Unit - IV Relativistic quantum mechanics, formulation of relativistic quantum theory, the Klein-Gordon equation; plane wave solutions, charge and current densities, The Dirac equation for a free particle, matrices alpha and beta, Lorentz covariance of the Dirac equation, free particle solutions and the energy spectrum, charge and current densities.

Unit-V The spin of the Dirac particle, Dirac particle in electromagnetic fields and the significance of the negative energy state, Dirac equation for a central field: Spin angular momentum, approximate reduction, spin –orbit energy, separation of equation, the hydrogen atom, classification of energy levels and negative energy states.

TEXT AND REFERENCE BOOKS –

1. L.I. Schiff: Quantum Mechanics (McGraw-Hill).
2. S.Gasiorowicz: Quantum Physics (Wiley).
3. Landau and Lifshitz : QuantumMechanics.
4. B.Craseman and Z.D.Powell : Quantum Mechanics (AddisonWesley)
5. A.P. Messiah: QuantumMechanics.
6. J.J. Sakurai: Modern QuantumMechanics.
7. Mathews and Venkatesan: QuantumMechanics.
8. Bjorken and Drell :Relativstic QuantumMechanics.

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PAPER –II: ATOMIC AND MOLECULAR PHYSICS

Unit-I Quantum states of one electron atoms-atomic orbitals, Hydrogen spectrum, spin-orbit(l-s) interaction energy, fine structure of hydrogen spectrum including l-s interaction and relativistic correction, spectra of alkali elements, fine structure in alkali spectra, penetrating and non-penetrating orbits, intensity rules.

Unit-II Pauli's principle, equivalent and non-equivalent electrons, ground state(basic level of different elements), two electron systems, interaction energy in L-S. and J-J. Coupling, Hyperfine structure, line broadening mechanisms (general ideas).

Unit – III Normal and anomalous Zeeman effect, early discoveries and developments, vector models of one electron system in a weak magnetic field, magnetic moment of a bound electron, magnetic interaction energy, selection rules, intensity rules, Paschen-Back (PB) effect – principal series effect, Zeeman and PB effects in hydrogen, Stark effect- discovery, Stark effect in Hydrogen, orbital model, weak and strong effect in Hydrogen.

Unit-IV Types of molecules: linear and diatomic molecules, symmetric top, asymmetric top and spherical top molecules. Rotational spectra of diatomic molecules: rigid rotator model, energy levels, Eigen functions, spectrum, comparison with observed spectrum and non-rigid rotator model, Intensities of spectral lines, microwave spectrometer, Raman spectrum; classical and quantum theory of Raman Effect, pure rotational Raman spectrum.

Unit-V Vibrational spectra of diatomic molecules: simple harmonic model, energy levels and spectrum, comparison with observed spectrum and anhormonic model, Vibrating rotators, Interaction of rotations and vibrations, fine structures and P-Q-R branches, IR spectrometer, Vibrational Raman spectrum, Vibrational rotational Raman spectrum.

TEXT AND REFERENCE BOOKS:

1. Introduction to atomic spectra - H.E. White(T).
2. Fundamentals of molecular spectroscopy – C.N. Banwell and E.M McCash(T).
3. Spectroscopy vol. I, II and III – Walker andstraughner.
4. Introduction to Molecular spectroscopy – G.M.Barrow.
5. Spectra of diatomic molecules –Herzberg.
6. Molecular spectroscopy – JeanneL.Mc-Hale.
7. Molecular spectroscopy – J.M.Brown.
8. Spectra of atoms and molecules–P.F.Bemath.
9. Modern spection copy, J.M.Holias.

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PAPER – III: SOLID STATE PHYSICS-I

Unit- I: **Electrons in Solids and Electronic Properties**

Energy bands: nearly free electron model, origin of energy gap and its magnitude, Bloch function, Kronig-Penny model, Wave equation of electron in periodic potential, restatement of Bloch theorem, crystal moment of an electron, solution of Central equation, Kronig-Penny model in reciprocal space, empty lattice Approximation, approximate solution near zone boundary, Number of orbitals in a band, metals and insulators.

Unit -II: **Fermi surfaces and metals**

Effect of temperature on F-D distribution, free electron gas in three dimensions. Different zone schemes, reduced and periodic zones, construction of Fermi surfaces, nearly free electrons, electron, hole, open orbits, Calculation of energy bands, Tight binding, Wigner-Seitz, cohesive energy, pseudo potential methods. Experimental methods in Fermi surface studies, quantization of orbits in a magnetic field, de Haas van Alphen Effect, External orbits, Fermi surface of copper.

Unit- III: **Crystal vibration and thermal properties**

Lattice dynamics in monoatomic and diatomic lattice: two atoms per primitive basis, optical and acoustic modes, quantization of elastic waves, phonon momentum, inelastic neutron scattering by phonons, Anharmonic crystal interactions-thermal expansion, thermal conductivity, thermal resistivity of phonon gas, umklapp processes, imperfections.

Unit –IV: **Electron-Phonon interaction- superconductivity**

Experimental survey: occurrence of superconductivity, Destruction of superconductivity by magnetic field, Meissner effect, heat capacity, energy gap, MW, and IR properties, isotope effect. Theoretical survey : thermodynamics of superconducting transition, London equation, Coherence length, Cooper pairing due to phonons, BCS theory of superconductivity, BCS ground state, flux quantization of superconducting ring, duration of persistent currents, Type II superconductors, Vortex states, estimation of H_{C1} and H_{C2}, single particle and Josephson superconductor tunneling, DC/AC Josephson effect, Macroscopic quantum interference. High temperature superconductors, critical fields and currents, Hall number, fullerenes ring.

Unit – V: **Semiconductor crystals**

Band gap, equation of motion, physical derivation of equation of motion, holes, effective mass, physical interpretation of effective mass, effective masses of semiconductors Si and Ge, intrinsic carrier concentration, intrinsic mobility, impurity conductivity, donor and acceptor states, thermal ionization of donors and acceptors, thermo-electric effects.

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TEXT AND REFERENCE BOOKS:-

1. C. Kittel: Introduction to Solid State Physics (Wiley andSons).
2. J.M.Ziman: Principles of theory of solids (CambridgeUniv.Press).
3. Azaroff: X-raycrystallography.
4. Weertman and weertman : Elementary DislocationTheory.
5. Verma and Srivastava: Crystallography for Solid StatePhysics.
6. Azeroff and Buerger: The PowerMethod.
7. Buerger: Crystal StructureAnalysis.
8. Thomas: Transmission ElectronMicroscopy.
9. Omar: Elementary solid statephysics.
10. Ashcroft and Mermin: Solid StatePhysics.
11. Chalking and Lubensky: Principles of Condensed MatterPhysics.
12. Madelung: Introduction to solid statetheory.
13. Callaway: Quantum theory of solid statephysics.
14. Huang: Theoretical Solid StatePhysics.
15. Kittel: Quantum theory ofsolids.

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PAPER –IV (A): ASTRONOMY AND ASTROPHYSICS-I

Unit - I Stars-apparent magnitudes, Colour index, Spectral classification, Stellar distances, Absolute magnitude, The H-R diagram of stars.
Stellar interiors: The basic equations of stellar structure, Hydrostatic equilibrium, Thermal equilibrium, Virial Theorem, Energy sources, Energy transport by radiation and convection, Equation of state

Unit - II Formation and evolution of stars: Inter stellar dust and gas, Formation of protostars, Pre-main sequence evolution, Post main sequence evolution and Evolution on the main sequence for low and high mass stars, Late stages of evolution, Fate of massive stars, Supernovae and its characteristics.

Unit – III End states of stars, degenerate states, White dwarfs, and Chandrasekhar limit, Neutron stars and Pulsars, Black holes.
Binary stars and their classification, close binaries, Roche Lobes, Evolution of semidetached systems: Algols, Cataclysmic variables and X-ray binaries.

Unit - IV Solar Physics: Physical Characteristics of sun, Photosphere: Limb darkening, Granulation, Faculae, Solar Chromosphere and Corona, Prominences, Solar Cycle and Sunspots, Solar Magnetic Fields, Theory of Sunspots, Solar flares, solar wind, Helioseismology.

Unit - V Observational and Conceptual foundations of Newtonian gravity and General Theory of Relativity(GR), Principle of Equivalence, Metric tensor, Covariant differentiation, Riemann curvature tensor, Geodesics.
Stress- Energy tensor, Einstein's field equations, Schwarzschild metric, Particle trajectories in Schwarzschild space- time, Precession of Perihelion, Gravitational red-shift and bending of light.

TEXT AND REFERENCE BOOKS:

1. Astrophysics for Physicists, Arnab Rai Choudhuri, Camb. University Press,2010.
2. Modern Astrophysics, B.W. Carroll and D.A. Ostlie, Addison-Wealey Pub.Co.
3. Introductory Astronomy and Astrophysics, M.Zeilik and S.A. Gregory, 4th edition, Saunders collegepublishing.
4. Theoretical Astrophysics, vol. – II: Stars and stellar systems, T. Padmanabhan, Cambridge universitypress.
5. The Physical Universe: An introduction to astronomy, F.Shu, Mill valley : University science books.

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Paper – IV (B) ELECTRONICS (Communication)-I

Unit - I **Microwave devices**

Klystron, magnetron & traveling wave tubes ,velocity modulation ,basic principle of two cavity klystrons & relex klystrons ,principle of operation of magnetrons ,helix traveling wave tubes.

Unit - II **Microwave wave guides &components**

(Wave modes) rectangular wave guides: solution of wave equation in rectangular coordinates, TE modes in rectangular wave guides, TM modes in rectangular wave guides, excitations of modes in rectangular wave guides.

Circular wave guides: solutions of wave equation in Cylindrical coordinates, TE modes in Circular wave guides, TM modes in Circular wave guides, TEM modes in Circular wave guides, excitations of modes in Circular wave guides.

Unit - III **Microwave cavities**: rectangular cavity resonator, circular –cavity resonator & semicircular cavity resonators Q- factor of a cavity resonator.

Transferred Electrons devices (TEDs)

Gunn effect diodes, principle of operation, modes of operations, read diodes, IMPATT diodes, TRAPATT diodes.

Microwave communications: advantages of microwave transmission, loss in free space, propagation of microwave, components of antennas used in MW communication system.

Unit - IV **Radar system**:

Radar-Block diagram &operation, radar frequencies ,pulse consideration, radar range equation ,derivation of radar range equation ,minimum detectable single receiver noise ,signal to noise ratio ,integration of radar pulses ,radar cross sections ,pulse reflections frequency ,antenna ,parameters ,systems losses & propagation losses ,radars transmitters receivers ,antennas displays

Unit - V **Satellite communication**

Orbital Satellite, geostationary satellite, orbital patterns, look angles, orbital spacing , satellite system ,link modules.

REFERENCEBOOKS

1) "Microwaves" by K.L. Gupta Wiley Estern Ltd.Delhi.
2) Advanced Electronic communication system by Wayne Tomsi Physicseducation.
3) Principle of communication of system-by Toub& Schilling: 2nd ed. TMH1994
4) Communication system: by SimanHaykin, 3rd ed. John wiley&sonsinc.1994.
5) Microwave devices & circuits by : Samuel, Y.Liau.
6) Electronic communication: Georgekennedy.

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Paper IV (C) PHYSICS OF NANO MATERIALS - I

Unit-I: **Nano Materials**

Properties of Nano-Particles: Metal Nano-clusters: Magic Numbers, theoretical modeling of nanoparticles, geometric and electronic structure, Reactivity, Fluctuations, magnetic clusters, Bulk to Nano transition. Semiconducting nanoparticles: optical properties, Photo fragmentation, Columbic Explosion. Rare gas and molecular clusters: Inert-Gas Clusters, Superfluid Clusters, Molecular Clusters. Methods of Synthesis: RF Plasma, Chemical Methods, Thermolysis, Pulsed Laser Methods.

UNIT II: **Carbon Nanostructures**

Carbon Molecules: Nature of Carbon Bonds, New Carbon Structures. Carbon Clusters: Small Carbon Clusters, Discovery of C_{60}, Structure of C_{60} and its Crystal, Alkali-Doped C_{60}, Superconductivity in C_{60}, Larger and Smaller Fullerenes, Other Bucky balls. Carbon Nanotubes: Fabrication, structure, Electrical Properties, Vibrational Properties, Mechanical Properties. Applications of Carbon Nanotubes: Field Emission and Shielding, Computers, Fuel Cells, Chemical Sensors, Catalysis, Mechanical Reinforcement.

UNIT III: **Bulk Nanostructured Materials**

Solid Disordered Nanostructures: Methods of Synthesis, Failure Mechanisms of Conventional Grain-Sized Materials, Mechanical Properties, Nanostructured Multilayers, Electrical Properties, Other Properties, Metal Nano cluster Composite Glasses, Porous Silicon. Nanostructured Crystals: Natural Nano crystals, Computational Prediction of Cluster Lattices, Arrays of Nanoparticles in Zeolites, Crystals of Metal Nanoparticles, Nanoparticle Lattices in Colloidal Suspensions, Photonic Crystals. Nanostructured Ferromagnetism: Basics of Ferromagnetism, Effect of Bulk Nano structuring of Magnetic Properties, Dynamics of Nano magnets, Nano pore Containment of Magnetic Particles, Nano carbon Ferro magnets, Giant and Colossal Magneto resistance, Ferro fluids.

UNIT IV: **Quantum Wells, Wires, and Dots**

Preparation of Quantum Nanostructures, Size and Dimensionality Effects: Size Effects, Conduction Electrons and Dimensionality, Fermi Gas and Density of States, Potential Wells, Partial Confinement, Properties Dependent on Density of States. Excitons, Single- Electron Tunneling, Applications: Infrared Detectors, Quantum Dot Lasers. Superconductivity.

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UNIT V: Self-Assembly and Catalysis

Self-Assembly: Process of Self-Assembly, Semiconductor Islands, Monolayers. Catalysis: Nature of Catalysis, Surface Area of Nanoparticles, Porous Materials, Pillared Clays, Colloids.

Nanomachines and Nanodevices: Microelectromechanical Systems (MEMSs), Nanoelectromechanical Systems (NEMSs): Fabrication, Nanodevices and Nanomachines. Molecular and Superamolecular Switches.

TEXT AND REFERENCE BOOKS

1. Nanostructures & Nanomaterials: Synthesis, Properties & Applications: Guozhang Cao.
2. Introduction to Nanotechnology: Charles P. Poole Jr and Franks J.Qwens.
3. Handbook of Analytical instruments, R.S.Khandpur
4. Nano materials: Synthesis properties ,characterization and application: A.S Edelstein and R.CCammaratra
5. Nanotechnology, Kohlr,Michael.
6. X-ray diffraction procedures, H. P. Klung andL.E.Alexander
7. The Powder Method IV. Azaroff and M. J.Buerger
8. Elements of X-ray diffraction, B.D.Cullity
9. Differential Thermal Analysis,R.C.Mackenzie
10. Thermal Methods of Analysis,W.W.Wendlandt
11. Synthesis, Functionalization and Surface treatment of Nanoparticles :MaricIsbella andBuraton
12. Encyclopedia of Nanotechnology, H.S.Nalwa
13. Handbook of Nanotechnology: Bhushan(Ed), Springer Verlag, New York(2004).
14. Nanostructures and Nanomaterials- Synthesis properties and Applications by Guozhong Cao (Empirical College Press World Scientific Pub.,2004).
15. Nanocomposite Science and Technology, Ajayan, Schadler andBraun
16. Fullerene & Carbon nanotubes, DresselShaus
17. Carbon Nanotubes,Elizer
18. Physical properties of CNT,Saito
19. Carbon nanotechnology, LimingDai
20. Nanotubes and nanowires, CNR Rao and Govindaraj RCSPublishing.
21. Nanotechnology in Biology and Medicine: Methods, Devices and Application by Tuan Vo-Dinh, CRC press,2007.
22. An Introduction to Quantum Computing Phillip Kaye, Raymond Laflamme, Michele Mosca
23. The Physics of Quantum Information: Quantum Cryptography, Quantum Teleportation, Quantum Computation by Dirk Bouwmeester, Artur K. Ekert, Anton Zeilinger
24. Problems And Solutions in Quantum Computing And Quantum Information Yorick Hardy Willi-HansSteeb

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PAPER –IV (D): SPACE PHYSICS - I

Unit-I: **Solar Physics**

Physical Characteristics of sun, Source of solar energy, thermonuclear reaction and building up of higher elements, Description of solar internal and external layers, Photosphere: Limb darkening, Granulation, Faculae, Solar Chromosphere and Corona, Heating of the solar chromosphere and corona, Prominences, Solar Cycle and Sunspots, Solar Magnetic Fields, Theory of Sunspots, Solar flares, Solar wind, Coronal mass ejections, Helioseismology.

Unit-II: **Planetary System**

Solar planetary system, Major characteristics of the Planets, Atmospheric Composition, Planetary magnetism, Magnetic fields, Magnetic dipole, Asteroids, Comets, Extra Solar Planets, Magnetic fields of Extra Solar Planets

Unit-III: **Celestial Mechanics**

Time and Coordinate system: Celestial Sphere, Solar Time, Sidereal Time, Julian Date, Right Ascension and Declination, Azimuth and Elevation, galactic coordinates, WGS 84 coordinate system. GPS – operation, accuracy, time and position information.

Unit-IV: **Space and Observational tools**

Electromagnetic bands of observation: radio, infrared, optical, UV, X-ray and Gamma-ray windows. Ground-based, balloon-borne and satellite-borne telescopes, Resolution of Instruments and Limitations, Optical telescopes, Photometers, Spectrographs, CCDs, Polarimeters. Radio telescopes - interferometry, X-ray and Gamma-ray detectors, Neutrino and Cosmic Ray astronomy, Radar.

Unit-V: **Space Missions**

Planetary Exploration, Early spacecraft visits to the moon, Unmanned Lunar landers; The Apollo program - man on the moon – instruments and experiments, Lunar structures; Exploration of Mercury, Venus, Mars - the Red Planet – Structure of Mars, Martian atmosphere; ice at the poles, Martian landscapes: linear features, volcanoes, and impact craters; exotic terrains; Study of Planetary moons with space missions, The Cassini-Huygens Mission, The Deep Impact Mission. Search for extra-terrestrial life – SETI experiments.

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Text and Reference Books

1. Solar System Astrophysics, J. C. Brandt and P. W.Hodge
2. Introduction to Experimental Physics, W. B. Fretter.
3. The Magnetic Field of the Earth, Roland T. Merrill, Michael W. Mc Elhinny, Phillip L. Mcfadden, Academic Press
4. Physics of Geomagnetic Phenomena, Vol. I and II, S. Matsushita. and W. H. Campbell, Academic Press
5. Earth's Magnetospheric Process, Ed. B. M. Mc Cormac, D. Reidel Publishers
6. Physics of the Magnetosphere, Eds. R. L. Corovillano, J. T. McCaulley and H. Radosky, D. Reidel Publishers
7. Solar System Plasma Physics, Vol. I, II and III, Eds. C. F. Kennel, L. J.Lanzenrutti and E. N. Parker
8. Dynamics of the Geomagnetically Trapped Radiation (Physics and Chemistry in Space, Vol II)
9. Solar Terrestrial Physics, Ed. E. R. Dyer, D. Reidel Publishers
10. Solar Magneto–Hydrodynamics, E.R. Priest; D Reidel,1982
11. R.C. Smith, Observational Astrophysics; CUP,1995.
12. C.R. Kitchin, Astrophysical Techniques; Adam Hilger,1984.
13. Digital Image Processing, R. C. Gonzales and R. E. Woods, 2nd Ed, Pearson India, 2002
14. Satellite Meteorology, S. Q. Kidder and T. H. Von der Haar, Academic Press,1995
15. Lecture Notes on Satellite Meteorology, Vol 1 and 2, SAC, Ahmedabad
16. Remote Sensing and Image Interpretation, T. M. Lillesand and R. W. Kieffer, John Wiley,2002
17. Fundamentals of Space Systems, V. L. Pisacane and R. C. Moore, Oxford University Press,1994
18. Fundamentals of Remote Sensing, George Joseph,2003
19. Processing Remote Sensing Data, M. C. Girgard and C. Girgard, Oxford-IBH,1999
20. Quantitative Remote Sensing of Land Surfaces, Shunlin Liang, WileyInter science, 2004
21. Scale in Remote Sensing and GIS, D. A. Quattrachi and M. F.Goodchild
22. Theory of Satellite Orbits in an Atmosphere, King-Hele Desmond, Butterworths, 1964
23. Uncertainty in Remote Sensing and GIS, Ed: G. M. Foddy and P. M.Atkinson
24. Remote Sensing by GeorgeJoseph
25. Concepts in Space Sciences Edited by R.R.Daniel
26. Mathematical Principles of Remote Sensing by A..Milman
27. An Introduction to Ionosphere and Magnetosphere, J. A.Raticliffe
28. Solar System Astrophysics, J. C. Brandft and P. W.Hodge
29. Plasma Diagnostic Techniques, R. H. Huddlestone and S. L.Leonard
30. Introduction to Experimental Physics, W. B.Fretter
30. High Vacuum Techniques, J.Yarwood
31. Plasma Diagnostics, Vol. I, O. Anciello and D. L.Flamn
32. The Earth's Ionosphere: Plasma Physics and Electrodynamics, Michael C.Kelley, AcademicPress
33. Ionospheric Techniques and Phenomena, A. Giraud and M. Petit, D. ReidelPublish.
34. Physics of Geomagnetic Phenomena, Vol. I and II, S. Matsushita and W. H.

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Campbell, AcademicPress
35. Introduction to Ionospheric Physics, H. Risbeth and H. Garriot, AcademicPress
36. Space Weather, Physics and Effects by Volker Bothmer and Loannis.A.Depli Springer
37. Aerospace Environment by TBeer
38. Free flight of a rocket ByGantmaker
39. Orbital Mechanics, Ed. Vladimir A, Chobotov, AIAA EdnSeries
39. Introduction to Celestial Mechanics, S. W. McCusky,Addison-Wesley
40. Fundamentals of Astrodynamics, R. R. Bates et al,Dover
41. Orbital Motion, A. E. Roy, Adam HinglarLtd
42. Orbital Methods in Astrodynamics, P. R. Escobal, JohnWiley
43. Fundmentals of Astrodynamics, R. R. Bates et al,Dover
44. Orbital Motion, A. E. Roy, Adam HinglarLtd
45. Design of Orbital Flights, J. Johnson et al., McGrawHill
46. Modern Astrophyiscs, B. W. Carroll and D. A. Ostlie, Addison-Wesley
47. The Physical Universe, F. Shu, University ScienceBooks
48. The Physics of Astrophysics, Vol. I and II, F. Shu, University ScienceBooks
49. Theoretical Astrophysics, Vol. I, II and III, T. Padmanabhan, CambridgeUni.Press
50. The Physics of Fluids and Plasmas, Arnab Rai Choudhuri, CambridgeUni.Press
51. Astrophysical Concepts, M. Harwitt,Springer-Verlag
52. Galactic Astronomy, J. Binney and M. Merrifeld, Princeton UniversityPress
53. Galactic Dynamics, J. Binney and S. Tremaine, Princeton UniversityPress
54. Quasars and Active Galactic Nuclei, A. K. Kembhavi and J. V. Narlikar,Cambridge UniversityPress
55. An Introduction to Active Galactic Nucleii, B. M.Peterson

Lab III-A: Materials Science & General

At least ten experiments should be performed from the following list of experiments or parallel level experiment depending upon the facilities available.

1. To determine activation energy of ionic/superionic solid by Temperature depended conductivity measurement.
2. To study Electron Spin(ESR) Resonance in DPPH (Diphenyl Pricyl Hydrazy) sample.
3. To study I-V characteristics of photovoltaic solar cell and find the efficiency.
4. To study the decay of photoconductivity of given sample and find out trap depth.
5. Study of decay of photoluminescence of a given sample.
6. Measurement of electrical conductivity using Impedance Spectroscopy technique.
7. To determine drift velocities of Ag+ ion in AgI from temperature dependence of ionic transference number study.
8. Electrical conductivity of Ball milled/Mechano-chemical synthesized materials.
9. Determination of strength of a given radioactive source.
10. Study of complete spectra of radioactive sources, and study of photo peak efficiency of NaI(Tl) crystal for different energy gamma rays.
11. Structural analysis of powder sample by XRD and particle size determination using Scherrer's formula.
12. FTIR studies of solid samples.
13. Mechanoluminescence of sucrose crystals.
14. Thermoluminescence of irradiated samples.
15. Study of Op-Amp.-IC-741 is inverting/ Non inverting amplifier and

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draw frequency response curve.

16. Construction of Schmitt triggers using IC-741 and study of its characteristics.
17. Study of Astable and monostable Multi Vibrator using IC555.
18. Digital electronics experiments on bread board usingIC-7400.

Lab III-B: Astronomy & Astrophysics

1. Study of Quasar.
2. Study of the orbit of a visual binary Star.
3. Determine the mass of Saturn &its rotational velocity.
4. Verification of Hubble's law and determination of Hubble'sconstant.
5. Identification of element from Fraunhoffer spectrum of the sun.
6. Study of sunspots.
7. Study of light curves of Cepheid variable stars.
8. Study of Proper motion of stars.
9. Determination of Pulsar period and distance.
10. Photo-electric photometry of Pleiades star cluster.
11. Study of expansion of the universe and calculate the age of the Universe.

OR III -B: Electronics

(1) Experiments with microprocessor. (a)Convert BCD in to binary & vice versa.
(b) To transfer group of data blocks from one location to another location.
(c) To write programme for addition &subtraction.
(d) To write programme for multiplication &division.
(2) Logic gate study DTL &RTL.
(3) To study& verify the Demerging's Theorem.
(4) Study of Adder/Subtract or.
(5) Study of Encoder &Decoder.
(6) Study of Multiplexer &DE multiplexer
(7) Study of digital to analog converter.
(8) Study of analog to digital converter.
(9) Study of 4-bit Counter/ ripple Counter.
(10) Study of left/right shift register.
(11) Study of read only memory.
(12) Study of Random Access Memory.
(13) Study of Phase locked loop.
(14) Study of BCD to seven segments Decoder.
(15) Study of modulation & demodulation.
(16) Optical fiber based experiment.
(17) Microwave characterization and measurements.

OR III -B: Physics of Nano-material

(1) Synthesis of II-IV semiconductor nanoparticles by Wet chemical method.
(2) Synthesis of nanoparticles (ZrO_2) by Combustion method.
(3) Synthesis of nanoparticles by Sol-gel method.
(4) Synthesis of nanoparticles by Ball milling method.
(5) Synthesis of Quantum cells structures using vacuum coating unit.
(6) Synthesis of nanoparticles using Solid state reaction method.
(7) Measurement of band gap energy and size of the nano particle of II-IV semiconductor using absorption spectrophotometer.

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(8) To make the peak analysis of IR transmission spectra of nanoparticle using FTIR spectrometer.
(9) Study of effect of capping agent on the size of the nanoparticle during synthesis.
(10) To determine the average particle size of nano materials by XRD using Sherer's formula.
(11) To determine the Hall coefficient and carrier type for a semiconducting nanoparticles.
(12) To determine the Band gap of a given semiconductor using Four probe method from room temperature to 100°C.
(13) To determine the average size of nanoparticles using Zetasizer.
(14) To measure the change of dielectric constant and dielectric loss of nanoparticle with the change of signal frequency by impedance analyzer.
(15) To characterize the mechanical properties by tensile testing.
(16) To estimate the particle size by SEM.
(17) To perform electron diffraction analysis from TEM image.
(18) To do roughness analysis of nanostructured sample using AFM.

OR III -B: Space Physics

1. The flow of energy out of the Sun.
2. Study of Sun-spot.
3. Astrometry of asteroids.
4. Study of expansion of the universe and calculate the age of the Universe.
5. Identification of element from Fraunh offer spectrum of the sun.
7. The transit of Venus and Mercury.
8. Jupiter's Moon and speed of light.
9. Determination of Pulsar period and distance.
10. Photo-electric photometry of Pleiades star cluster.
11. The large scale structure of the Universe.

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Semester – IV
PAPER – I: NUCLEAR AND PARTICLE PHYSICS

Unit-I **Nuclear Interactions:** Nucleon-nucleon interaction, Two-nucleon system, The ground state of the deuteron, Tensor forces, Nucleon-nucleon scattering at low energy, Scattering length, Effective range theory, Spin dependence of nuclear forces, Charge independence and charge symmetry of nuclear forces, Iso-spin formalism, Exchange forces, Meson theory of nuclear forces and the Yukawa interaction.

Unit-II **Nuclear Reactions:** Reaction energetics: Q-equation and threshold energies, Reactions cross sections, Resonance: Breit-Wigner single-level formula, Direct and compound nuclear reactions, Formal reaction theory: Partial wave approach and phase shifts, Scattering matrix, Reciprocity theorem,

Unit-III **Nuclear Decay:** Beta decay, Femi's theory of beta decay, Shape of the beta spectrum, Total decay rate, Angular momentum and parity selection rules, Comparative half-lives, Allowed and forbidden transitions, Selection rules, Parity violation, Two component theory of neutrino decay, Detection and properties of neutrino

Gamma decay, multiple transitions in nuclei, Angular momentum and Parity selection rules, internal conversion, nuclear isomerism.

Unit – IV **Nuclear models:** Liquid drop model, Bohr-Wheeler theory of fission, Shell Model, Experimental evidence for shell effects, Single particle shell model, Spin-orbit interaction and magic numbers, Analysis of shell model predictions, Magnetic moments and Schmidt lines, Collective model of Bohr and Mottelson.

Unit - V **Elementary particle Physics:** The fundamental interactions, Classification of elementary particles, Leptons and Hadrons, Symmetries, groups and conservation laws, SU(2) and SU(3) multiples and their properties, Quark model, Properties of Quarks, the standard model.

TEXT AND REFERENCE BOOKS:

1. A. Bohr and B.R. Mottelson, Nuclear structure, vol. 1 (1969) and vol.2, Benjamin, Reading, A,1975.
2. Kenneth S. Kiane, Introductory Nuclear Physics, Wiley, New York,1988.
3. Ghoshal, Atomic and Nuclear Physicsvol.2.
4. P.H. Perking, Introduction to high energy physics, Addison-Wesley, London, 1982.
5. Shriokov Yudin, Nuclear Physics vol.1 & 2, Mir Publishers, Moscow, 1982.
6. D. Griffiths, introduction to elementary particles, harper and row, New York, 1987.
7. H.A. Enov, introduction to Nuclear Physics, Addison-Wesley, 1973.
8. G,E. Brown and A.D. Jackson, Nucleon-Nucleon interaction North-hall and Amsterdam, 1976.
9. S.D. Benedetti, Nuclear interaction, John Willey and sons, New York, 1964.
10. M.K. Pal, theory of Nuclear structure, affiliated East West, Madras,1982.
11. Y.R. Waghmare, introductory nuclear physics, Oxford, IBH, Bombay,1981.
12. J.M. Longo, elementary particles, McGraw Hill, New York,1971.
13. R.R. Roy and B.P. Nigam, Nuclear Physics, Wiley- Easterm Ltd.1983.

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PAPER – II LASER PHYSICS AND APPLICATIONS

Unit-I Laser Characteristics–

Spontaneous and stimulated emission, Einstein's quantum theory of radiation, theory of some optical processes, coherence and monochromacity, kinetics of optical absorption, line broadening mechanism, Basic principle of lasers, population inversion, laser pumping, two & three level laser systems, resonator, Q-factor, losses in cavity, threshold condition, quantum yield.

Unit – II Laser Systems

Solid state lasers- the ruby laser, Nd: YAG laser, ND: Glass laser, semiconductor lasers – features of semiconductor lasers, intrinsic semiconductor lasers, Gas laser - neutral atom gas laser, He-Ne laser, molecular gas lasers, CO2 laser, Liquid lasers, dye lasers and chemical laser.

Unit-III Advances in laser Physics

Production of giant pulse -Q-switching, giant pulse dynamics, laser amplifiers, mode locking and pulling, Non-linear optics, Harmonic generation, second harmonic generation, Phase matching, third harmonic generation, optical mixing, parametric generation and self-focusing of light.

Unit –IV Multi-photon processes; multi-quantum photoelectric effect, Theory of two-photon process, three- photon process, second harmonic generation, parametric generation of light, Laser spectroscopy: Rayleigh and Raman scattering, Stimulated Raman effect, Hyper-Raman effect, Coherent anti-stokes Raman Scattering, Photo-acoustic Raman spectroscopy.

Unit – V Laser Applications – ether drift and absolute rotation of the Earth, isotope separation, plasma, thermonuclear fusion, laser applications in chemistry, biology, astronomy, engineering and medicine.

Communication by lasers: ranging, fiber Optics Communication, Optical fiber, numerical aperture, propagation of light in a medium with variable index, pulse dispersion.

TEXT AND REFERENCE BOOKS:

1. Laud, B.B.: Lasers and nonlinear optics, (New AgeInt.Pub.1996).
2. Thyagarajan, K and Ghatak, A.K.: Lasers theory and applications (Plenum press, 1981).
3. Ghatak, A.K. and Thyagarajan, K : Optical electronics (Cambridge Univ. Press 1999).
4. Seigman, A.E.: Lasers (Oxford Univ. Press1986)
5. Maitland, A. and Dunn, M.H. : Laser Physics (N.H.Amsterdam,1969).
6. Hecht, J. The laser Guide book (McGraw Hill, NY,1986).
7. Demtroder, W.: Laser Spectroscopy (Springe series in chemical physics vol.5, Springeverlag, Berlin,1981).
8. Harper, P.G. and Wherrett B.S. (Ed.): Non-linear-optics (Acad.press,1977).

11/5/2023

PAPER – III: SOLID STATE PHYSICS- II

Unit- I: **Plasmon's, Polaritons**

Dielectric function of the electron gas, Plasma optics, Dispersion relation for EM wave, Transverse optical modes in Plasma, Transparency of Alkali metals in the ultraviolet, Longitudinal Plasma oscillations, Plasmon, electrostatic screening and screened Coulomb potential, Mott metal-insulator transition, screening and phonons in metals, Polaritons, LST relation.

Unit –II: **Dielectric and ferroelectrics**

Maxwell's equations, polarization, macroscopic electric field, depolarization filed, E1;local electric field at an atom, Lorentz filed E2, fields of dipoles inside cavity E3; dielectric constant and polarizability, electronic polarizability; structural phase transition; ferro-electric crystals, classification; displacive transition, soft optical phonons, Landau theory of phase transitions, first and second order transition, antiferro-electricity, ferro- electric domain, piezoelectricity, ferro-elasticity, optical ceramics.

Unit –III: **Magnetism**

General ideas of dia- and para- magnetisms, quantum theory of paramagnetism, rare earth ions, Hund rule, iron group ions, crystal field splitting, quenching of orbital angular momentum, spectroscopic splitting factor, van vleck temperature dependent paramagnetism, Cooling by isentropic demagnetization, nuclear demagnetization, paramagnetic Susceptibility of conduction electrons.

Unit –IV: **Ferromagnetism and anti-ferromagnetism**

Ferromagnetic order, Curie point and exchange integral, temp dependence of saturation magnetization, saturation magnetization at absolute zero; magnons, quantization of spin waves, thermal excitation of magnons; neutron magnetic scattering, Ferrimagnetic order, Curie temp and susceptibility of ferrimagnets, iron garnets. Antiferromagnetic order, susceptibility below neel temp, antiferromagnetic magnons, ferromagnetic domains.

Unit – V: **Optical Processes &Excitons and defects**

Optical reflectance, excitons, Frenkel and Mott-Wannier excitons, Alkali Halides and Molecular crystals Defects: lattice vacancies, Schottkey and Frenkel point effects, colour centers, F and other centers, Line defect. Shear strength of single crystals, dislocations- edge and screw dislocations, Burger vectors, Stress fields of dislocations, low angle grain boundaries, dislocation densities, dislocation multiplication and slip, strength of alloys, dislocations and crystal growth, hardness of materials.

11/5/2023

TEXT AND REFERENCE BOOKS

1. C. Kittel: Introduction to Solid State Physics (Wiley and Sons).
2. J.M. Ziman: Principles of theory of solids (Cambridgeuniv. press).
3. Azaroff : X-ray crystallography.
4. Weertman and weertman : Elementary Dislocation Theory.
5. Verma and Srivastava: Crystallography for Solid State Physics.
6. Azeroff and Buerger: The Power Method.
7. Buerger: Crystal Structure Analysis.
8. Thomas: Transmission Electron Microscopy.
9. Omar: Elementary solid state physics.
10. Aschroft and Mermin : Solid State Physics.
11. Chalking and Lubensky: Principles of Condensed Matter Physics.
12. Madelung : Introduction to solid state theory.
13. Callaway: Quantum theory of solid state physics.
14. Huang: Theoretical Solid State Physics.
15. Kittel: Quantum theory of solids.

11/5/2023

PAPER –IV (A): ASTRONOMY AND ASTROPHYSICS - II

Unit– I The Milky Way Galaxy: Structure of the Milky way, Oort's theory of galactic rotation, Dynamics of the spiral arms, Distribution of Interstellar matter, Central regions of the Milky way. Normal Galaxies: Classification of galaxies, Hubble sequence: Elliptical, Lenticulars and Spiral galaxies, and their properties, Distribution of light and mass in galaxies, Brightness profiles, Distribution of gas and dust in galaxies.

Unit- II Active galaxies: Active Galactic Nuclei (AGNs), Seyfert galaxies, BL Lac Objects, Radio galaxies: General properties, Superluminal motion, Quasars: Properties and Energy requirements, Nature of quasar redshifts, Supermassive black hole model and Unified model of AGNs.

Unit- III Cosmology: Cosmological principle, Observational support and other arguments to support cosmological principle, Fundamental observers and co-moving frame, Robertson-Walker line element (without derivation), Observational features of Robertson-Walker space time e.g. Red shift etc, Models of the universe, Friedmann models, Quantitative predictions of FRW model, Quantitative solutions, Open and closed universes, Hubble's law, Angular size, Source counts, Models with the cosmological constant, Steady state cosmology.

Unit- IV Relics of the big bang, the early universe, Thermodynamics of the early universe, Thermal History, Primordial neutrinos, Helium synthesis and other nuclei, Microwave background, the very early universe, the formation of structures in the Universe, Jeans Mass, Growth Rate, Recombination era, Onset of matter dominated era.

Unit- V Observations of the cosmological significance, Measurement of Hubble`s constant, Anisotropy of local large - scale velocity fields, Age of the universe, Abundance of light nuclei, Dark matter, the redshift-magnitude relation, Number counts of extragalactic objects, The variation of angular sizes with distance.

11/5/2023

TEXT AND REFERENCE BOOKS:

1. Astrophysics for Physicists, Arnab Rai Choudhuri, Cambridge Uni.ty Press,2010.
2. Modern Astrophysics, B.W. Carroll and D.A. Ostlie, Addison-Wealey Pub.Co.
3. Introductory Astronomy and Astrophysics, M. Zeilik and S.A. Gregory, 4th edition, Saunders college publishing.
4. Theoretical Astrophysics, vol. – II: Stars and stellar systems, T. Padmanabhan, Cambridge university press.
5. The Physical universe: An introduction to astronomy, F. Shu, Millvalley: University science books.
6. Textbook of astronomy and astrophysics with elements of cosmology, V.B. Bhatia, Pb -New Delhi, Narosa publishing house.
7. The new cosmos, A. Unsold and B. Baschek, Newyork, Springer Velas.
8. Quasars and active galactic neuclei, A.K. Kembhavi and J.V. Narlikar, Cambridge university press.
9. Modern Astrophysics, B.W. Carroll and D.A. Ostlie, Addison Wesley publish.co.
10. Introductory astronomy and astrophysics, M.Zeilik and S.A.Greogry, 4 th edition, Saunders college publishing.
11. Theoretical Astrophysics, vol. I: Astrophysical processes T. Padmanabhan, Cambridge university press.
12. Introduction to cosmology, J.V. Narlikar, 3 rd edition, Cambridge uni. press.
13. Structure formation in the universe, T. Padmanbhan, Cambridge University, press.
14. General relativity and cosmology, J.V. Narlikar-Delhi: Macmil. Comp.of Indialtd.
15. Galactic Astronomy: Binney and Merrifield.

11/5/2023

Paper – IV (B) Electronics II (Communication)

Unit-I **Digital communications**

Pulse modulation systems, Sampling Theorem, Low pass &Band pass signal, PAM- Channel BE for PAM signal, Natural Sampling, Flattop sampling, Signal through holding, Quantization of signals, quantization error.

Unit-II **Digital modulation techniques**

PCM, Differential PCM, Delta modulation, Adaptive, delta modulation (CVSD). BPSK, DPSK, QPSK, PSK, QASK, BFSK, FSK, MSK

Unit-III **Mathematical representation of noise**

Sources of noise, Frequency domain representation of noise, Effect of filtering on the probability density of Gaussian noise, Spectral component of noise, Effect of a filter on the power spectral density of noise, Superposition of noise, Mixing involving noise, binear filtering, Noise bandwidth, Quadrature component o f noise, Power spectral density of nc(t) n_s (t) & their time derivatives.

Unit-IV **Data Transmission I**

Base band signal receiver, Probability of error optimum filter, White noise: Matched filter & probability of error, Coherent reception correlation, PSK, FSK, Non-Coherence detection on FSK, Differential PSK, QASK, Calculation of error probability for BPSK, BSFK, QPSK.

Unit-V **Data Transmission II**

Noise in pulse code & delta modulation system, PCM transmission, Calculation of quantization noise output signal power, Effect of thermal noise, output signal to noise ratio in PCM, DM, Quantization noise in DM, output signal power, DM output signal to quantization noise ratio, effect of thermal noise in delta modulation, output signal to niose ratio in DM

Text and Reference Books:

1) "Microwaves" by K.L. Gupta Wiley Estern Ltd. Delhi.
2) Advanced Electronic communication system by Wayne Tomsi Physics education.
3) Principle of communication of system-by Toub & Schilling: second edition TMH 1994
4) Communication system: by siman Haykin, third edition John wiley & sons inc.1994.
5) Microwave devices & cktsby: Samuel, Y. Liau.
6) Electronic communication: George kennedy.

11/5/2023

Paper – IV (C) PHYSICS OF NANO MATERIALS- II

UNIT I: **Synthesis of Nano-materials**

Top-down & Bottom-up approaches: Kinetically confined synthesis of nanoparticles: micro emulsion and spray pyrolysis. Template based synthesis: Electrochemical deposition, Physical Vapour deposition, Chemical Vapour deposition, Electron Beam Lithography (EBL), X-ray Lithography (XRL).

Chemical Route synthesis of Nanomaterials: Chemical precipitation and co- precipitation, Chemical Bath Deposition (CBD), Sol-gel, Combustion technique.

UNIT II: **Characterization of Nano-materials (a)**

X- ray Diffraction (XRD), powder and single crystal Diffraction, X-ray fluorescence (XRF), X ray photoelectron spectroscopy (XPS), Energy Dispersive X-ray analysis (EDAX), Thermo analytic Methods: Thermo Gravimetric Analysis (TGA), Differential Scanning Calorimetry (DSC), Differential Thermal Analysis(DTA).

UNIT III: **Characterization of Nano-materials (b)**

Scanning Tunneling Microscopy (STM), Contact and non-contact Atomic Force Microscopy (AFM), Conductive AFM. Scanning Electron Microscopy (SEM), Transmission electron microscopy (TEM), High resolution TEM Field emission SEM. Spectrophotometer: UV-Vis spectrophotometers, IR spectrophotometers, Fourier Transform Infrared Radiation (FTIR), Photoluminescence (PL), electroluminescence and thermoluminescence spectroscopy.

UNIT IV: **Applications of Nano-materials**

Quantum wells, wires and dots. Organic Semiconductors, Organic Light Emitting Diodes (OLEDs), self-assembly of complex organic molecules, molecular switches, thermochromic switches, Motor molecules and bio-mimetic components, charge transfer complexes, molecular connections, contact issues, conducting polymers, light emitting polymers, polymer-polymer heterostructures, plastic FETs, photodiodes &solar cells. Nano Robotics: Nano robots and NEMS, Sensors and actuators, Artificial molecular machines, Biomotors, Other Nano machines, Propulsion, Control, Communication, Programming and coordination.

UNIT V: **Nano Sensors and Biomedical applications**

Nanosensors: Gas sensors, Pollution sensor, Photo sensor, Temperature sensor, IR detector, Biosensor, nanomaterial gas discharge devices, CNT based fluid velocity sensor. Nanoparticle in Drug delivery, Targeting Legends, Cancer Treatment, Mediated Delivery of Sirna, Nanonephrology, Nanosystems in Inflammation, Targeting Macrophages to Control Inflammation, Tissue Regeneration, Growth And Repair, Tissue Bioengineering, Future Understanding for Treatment, nanosurgery, Drug Delivery Technology Significance, Impact and Development.

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References: Books/ Research Monographs

1. Nanostructures & Nanomaterials: Synthesis, Properties & Applications: Guozhang Cao.
2. Introduction to Nanotechnology: Charles P. Poole Jr and Franks J. Qwens.
3. Handbook of Analytical instruments, R.S. Khandpur
4. Nano materials: Synthesis properties ,characterization and application: A.S Edelstein and R.CCammaratra
5. Nano electronicsand Nanosystems, Karl Goser, Peter Glosekotter, Jan Dienstuhl.,
6. Springer,2004
7. Nanomaterial Systems Properties and Application, A.S.Eldestein and R.C.Cammarata.
8. Handbook of Nanotechnology: Bhushan(Ed), Springer Verlag, New York(2004).
9. Nanocomposite Science and Technology, Ajayan, Schadler and Braun
10. Piezoelectric Sensors: Force, Strain, Pressure, Acceleration and Acoustic Emission
11. Sensors, Materials and Amplifiers, G. Gautschi.
12. Block Copolymers in Nanoscience Massimo Lazzari
13. Supramolecular Chemistry, Jonathan W. Steed, Jerry L. Atwood
14. Nanotechnology: Importance and Application by M.H. Fulekar, IK International, 2010.
15. Nanotechnology in Biology and Medicine: Methods, Devices and Application by Tuan Vo-Dinh, CRC press,2007.
16. Nano system characterization tools in the life sciences by Challa Kumar. Wiley- VCH,
17. 2006.
18. Nanolithography M.Gentili etal.(edits),Springer.
19. Environanotechnology by Mao Hong fan, Chin-pao Huang, Alan E Bland, Z Honglin
20. Wang, RachidSliman, Ian Wright. Elsevier,2010.
21. Nanotechnologies, Hazards and Resource efficiency by M. Steinfeldt, Avon Gleich, U. Petschow, R. Haum. Springer, 2007.
22. Nanotechnlogy: Health and Environmental risk by Jo Anne Shatkin. CRC press, 2008.
23. An Introduction to Quantum Computing Phillip Kaye, Raymond Laflamme, Michele
24. Mosca
25. The Physics of Quantum Information: Quantum Cryptography, Quantum
26. Teleportation, Quantum Computation by Dirk Bouwmeester, Artur K. Ekert,Anton
27. Zeilinger
28. Problems and Solutions in Quantum Computing And Quantum Information Yorick Hardy Willi-HansSteeb

11/5/2023

PAPER –IV (D): SPACE PHYSICS – II

Unit I: **Glimpse of Universe**

Universe - description, origin, its evolution, age and size; Stars–birth, life, death, spectral analysis, stellar composition - element synthesis in stars, Exotic stars- novae, supernovae, pulsars, black holes and gamma ray bursts; Galaxies; Starbursts and Active Galactic Nucleus; Evidence for the Big Bang; Cosmic Background Radiation; Expansion Models; Dark Matter and Energy Recent innovations about the concept of Universe: Dark Energy and an accelerating universe

Unit II: **Spacecraft& Satellites**

Satellite orbits and attitude: principles of satellite motion, Kepler's laws, orbital elements, satellite attitude and its control, types of orbits, polar and geostationary, earth and Sun-synchronous, orbit optimization, viewing geometry, launch vehicles and spacecraft, rocket propulsion concepts such as solid, hybrid, liquid, nuclear and antimatter. Rocket motors and their design, flight stability and recovery systems, stability and control system.

Unit III: **Remote Sensing**

Sensors and systems: visible, infrared, water vapour and microwave sensors, sensor characteristics, sensor materials, passive and active sensors, scanning radiometers, spectral signatures.

Satellite data processing: satellite data acquisition, satellite communications, data collection platforms, earth station, image processing, geometric and radiometric corrections, image navigation, registration, image enhancement techniques, noise removal methods, histogram methods, density slicing, image classification.

Applications of remote sensing in earth resources management, agriculture, forestry, water resources and disaster mitigation

Unit IV: **Solar Wind and Interactions**

The ionospheric layers D, E, F and their formation, effect of radiation on earth's atmosphere, photochemical processes,

Geomagnetic and magnetic coordinates, poles, measurement of geomagnetic field components, micro pulsation indices, variations of geomagnetic field, quiet and disturbed variations and geomagnetic storms, equatorial and auroral phenomena.

Solar wind, model of solar winds, interaction in the interplanetary medium and with the planets. Magnetosphere: interaction of solar wind with the geomagnetic field and formation of the magnetospheric tail, storm and sub-storm phenomena, Van Allen radiation belts

Unit V: **Space Weather**

Space Weather Effects on Communication, Space Weather Effects on Power Grids, Space Radiation Protection, Effects on Spacecraft's hardware and Operations, Effects on Satellite Navigation, Forecast of Space Weather.

Text and Reference Books

Same as mentioned in Semester III, Paper IV (D)

11/5/2022

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SCHEME OF EXAMINATION
&
SYLLABUS
of
M.A. (Hindi) Semester Exam
UNDER
FACULTY OF ARTS
Session 2023-25

(Approved by Board of Studies)
Effective from July 2023

एम.ए. हिन्दी अंक विभाजन सेमेस्टर प्रणाली
प्रथम सेमेस्टर अंक विभाजन

प्रश्न पत्र	बाह्य परीक्षा	आंतरिक मूल्यांकन	कुल अंक	क्रेडिट
प्रथम : हिन्दी साहित्य का इतिहास (आदिकाल एवं पूर्व मध्यकाल)	80	20	100	05
द्वितीय : प्राचीन एवं मध्यकालीन काव्य (रासो काव्य, लौकिक काव्य एवं निर्गुण)	80	20	100	05
तृतीय : आधुनिक काव्य–1 (छायावाद एवं पूर्ववर्ती काव्य)	80	20	100	05
चतुर्थ : आधुनिक गद्य साहित्य (नाटक, एकांकी एवं चरितात्मक कृति)	80	20	100	05
		कुल अंक	**400**	**20**

द्वितीय सेमेस्टर अंक विभाजन

प्रश्न पत्र	बाह्य परीक्षा	आंतरिक मूल्यांकन	कुल अंक	क्रेडिट
पंचम : (उत्तर मध्यकाल एवं आधुनिक काल)	80	20	100	05
षष्ठ : मध्यकालीन काव्य	80	20	100	05
सप्तमः आधुनिक काव्य–2 (प्रगतिवाद, प्रयोगवाद, नई कविता एवं समकालीन कविता)	80	20	100	05
अष्टमः उपन्यास, निबंध एवं कहानी	80	20	100	05
		कुल अंक	**400**	**20**

तृतीय सेमेस्टर अंक विभाजन

प्रश्न पत्र	बाह्य परीक्षा	आंतरिक मूल्यांकन	कुल अंक	क्रेडिट
प्रथम : साहित्य के सिद्धांत तथा अलोचना शास्त्र	80	20	100	05
द्वितीयः भाषा विज्ञान	80	20	100	05
तृतीयः कामकाजी हिन्दी एवं पत्रकारिता	80	20	100	05
चतुर्थ : भारतीय साहित्य	80	20	100	05
		कुल अंक	**400**	**20**

चतुर्थ सेमेस्टर अंक विभाजन

प्रश्न पत्र	बाह्य परीक्षा	आंतरिक मूल्यांकन	कुल अंक	क्रेडिट
पंचमः हिन्दी आलोचना तथा समीक्षा शास्त्र	80	20	100	05
षष्ठ : हिन्दी भाषा	80	20	100	05
सप्तम : मीडिया लेखन एवं अनुवाद	80	20	100	05
अष्टमः जनपदीय भाषा और साहित्य (छत्तीसगढ़ी)	80	20	100	05
		कुल अंक	**400**	**20**

टीपः– प्रत्येक प्रश्न पत्र में 20 अंकों के आंतरिक मूल्यांकन के अंतर्गत दो आंतरिक मूल्यांकन का आयोजन अनिवार्य होगा एवं इसका मूल्यांकन विभाग के शिक्षको के द्वारा किया जावेंगा तथा प्राप्तांक विश्वविद्यालय को प्रेषित किया जावेगा। 10 अंक आंतरिक परीक्षा, 05 अंक सत्रीय कार्य एवं सेमीनार, 05 अंक उपस्थिति के लिए निर्धारित होगा।

एम.ए. हिंदी

अध्ययन का उद्देश्य–

एम.ए. पाठ्यक्रम का उद्देश्य विद्यार्थी को स्नातक पश्चात हिंदी साहित्य के गंभीर व गहन अध्ययन की ओर उन्मुख करना है ।पाठ्यक्रम में भाषा, आलोचना, काव्यशास्त्र का अध्ययन जहां सैद्धान्तिक समझ को विकसित करता है वही अन्य विधाएं जैसे कविता, नाटक, कहानी, उपन्यास में उन सिद्धांतों के व्यावहारिक रूप को समझने में सक्षम बनाना है।

प्रथम सेमेस्टर

प्रश्न पत्र –प्रथम

हिंदी साहित्य का इतिहास (आदिकाल एवं पूर्व मध्यकाल)

इस पाठ्यक्रम का उद्देश्य है–

1. हिंदी साहित्य के इतिहास और इतिहास–दर्शन के बीच के संबंधों से परिचित कराना।

2. हिंदी साहित्य और हिन्दी भाषी समाज के मध्य ऐतिहासिक संबंध और पारस्परिक निर्भरता से अवगत कराना।

3. भक्ति आंदोलन के सामाजिक परिप्रेक्ष्य और राष्ट्रीय सामाजिक संस्कृति के विकास में उसके प्रभाव को समझने की दृष्टि विकसित होगी।

4. भारतीय संस्कृति के बहुलतावादी और समन्वयवादी स्वरूप पर विश्वास पैदा होगा।

पाठ्यक्रम अधिगम परिणाम

1 इतिहास लेखन और साहित्य के इतिहास की समझ विकसित होगी।

2 हिंदी साहित्य के इतिहास दर्शन इतिहास लेखन की परंपरा और लेखन की समस्या से अवगत कराना ।

3 हिंदी साहित्य के इतिहास का काल विभाजन और नामकरण का समुचित ज्ञान होगा ।

4 आदिकालीन साहित्यिक प्रवृत्तियों, सांस्कृतिक पृष्ठभूमि व दार्शनिक विचारधारा से परिचय होगा ।

5 पूर्व मध्यकालीन काव्य में लोक जागरण का नवीन स्वर समाहित है इसमें भारत की भावनात्मक एकता और सांस्कृतिक परंपरा को सुरक्षित रखा है।

एम.ए. – हिन्दी
प्रथम सेमेस्टर
प्रश्न पत्र – प्रथम
हिन्दी साहित्य का इतिहास (आदिकाल एवं पूर्व मध्यकाल)

योग : 80

पाठ्य विषयः–

इकाई–1 **हिन्दी साहित्य का इतिहास : परम्परा और पद्धतिः**

साहित्य का इतिहास दर्शन–विषय, हिन्दी साहित्य के इतिहास लेखन की परम्परा, साहित्येतिहास के पुनर्लेखन की समस्याएँ।

हिन्दी साहित्य के इतिहास का काल–विभाजन और नामकरण, आदिकाल के नामकरण की समस्या।

इकाई–2 **आदिकालः**

हिन्दी साहित्य के आदिकाल की सांस्कृतिक पृष्ठभूमि, रासो काव्य, सिद्ध नाथ एवं जैन साहित्य, लौकिक साहित्य, साहित्यिक प्रवृत्तियाँ, प्रतिनिधि रचनाकार ।

इकाई–3 **पूर्व मध्यकाल (भक्ति काल), भक्ति आंदोलन :**

उद्‌भव और विकास, हिन्दी क्षेत्र में भक्ति आंदोलन की सांस्कृतिक पृष्ठभूमि एवं उसका विकास, भक्ति काल की प्रमुख प्रवृत्तियाँ, तथा दार्शनिक विचारधाराएँ।

इकाई–4 **भक्तिकाल की विभिन्न काव्य-धाराएँ :**

निर्गुण काव्य : ज्ञानमार्गी काव्यधारा एवं प्रेममार्गी काव्यधारा - परम्परा, प्रवृत्ति एवं उसका विकास। सगुण काव्य : कृष्ण भक्ति काव्य–धारा एवं रामभक्ति काव्य धारा- परंपरा, प्रवृति एवं उसका विकास।

टीप :– प्रत्येक इकाई से 02 दीर्घ उत्तरीय प्रश्न पूछे जाएंगे जिनमें से 01 प्रश्न को हल करना होगा। प्रत्येक इकाई से 02 लघु उत्तरीय प्रश्न पूछे जाएंगे। कुल 8 लघु उत्तरीय प्रश्नों में से 5 प्रश्नों को हल करना होगा। सम्पूर्ण पाठ्यक्रम से पूछे गए 15 प्रश्नों में से 10 अति लघुउत्तरीय/वस्तुनिष्ठ प्रश्नों के उत्तर देने होंगे।

अंक विभाजन

प्रश्न 1 –	1 X 15	=	15 अंक
प्रश्न 2 –	1 X 15	=	15 अंक
प्रश्न 3 –	1 X 15	=	15 अंक
प्रश्न 4 –	1 X 15	=	15 अंक
प्रश्न 5 – लघु उत्तरीय	5 X 2	=	10 अंक
– वस्तुनिष्ठ	10 X 1	=	10 अंक
	योग	=	**80 अंक**
	आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकें :–

1. हिन्दी साहित्य का इतिहास (संशोधित – आचार्य रामचंद्र शुक्ल)
2. हिन्दी साहित्य का आदिकाल – हजारी प्रसाद द्विवेदी
3. हिन्दी साहित्य का इतिहास (नेशनल पब्लिशिंग हाऊस, दिल्ली) – डॉ. नगेन्द्र
4. आदिकालीन हिन्दी साहित्य (वाराणसी विश्वविद्यालय प्रकाशन) – डॉ. शम्भूनाथ पाण्डेय
5. आदिकालीन हिन्दी साहित्य सांस्कृतिक पीठिका (हिन्दी ग्रंथ अकादमी) – डॉ. राममूर्ति त्रिपाठी
6. हिन्दी साहित्य का दूसरा इतिहास – डॉ. बच्चन सिंह
7. हिन्दी साहित्य और संवेदना का विकास–राम स्वरूप चतुर्वेदी (लोकभारती प्रकाशन)
8. हिन्दी साहित्य का सरल इतिहास – विश्वनाथ त्रिपाठी (ओरियन्ट लॉगमैन)
9. हिन्दी साहित्य उद्‌भव और विकास – हजारी प्रसाद द्विवेदी।

द्वितीय प्रश्न पत्र

प्राचीन एवं मध्यकालीन काव्य

(रासो काव्य, लौकिक काव्य एवं निर्गुण काव्य)

इस पाठ्यक्रम का उद्देश्य है–

1. हिंदी के पहले महाकाव्य पृथ्वीराजरासो सहित रासो काव्य परंपरा का परिचय और अध्ययन से साहित्यिक परंपरा का ज्ञान होता हैं।

2. प्राचीन भारतीय समाज और संस्कृति के संवेदनात्मक पक्ष की सामान्य समझ विकसित करना।

3. मध्यकालीन संस्कृति का अध्ययन और मध्यकालीन सामंती समाज के भीतर विकसित काव्यबोध की सामान्य जानकारी और समझ विकसित करना।

4 भक्ति आंदोलन के दौरान विशिष्ट प्रतिरोध की संस्कृति के प्रति जागरूकता उत्पन्न करना।

पाठ्यक्रम अधिगम परिणाम

1 विद्यार्थियों को हिंदी साहित्य के प्राचीन एवं मध्यकालीन काव्य का विशिष्ट ज्ञान प्राप्त होगा।

2 मध्यकालीन काव्य अपनी कलात्मक अभिव्यंजना में बेजोड़ है इसके अध्ययन से समाज व संस्कृति को समग्रता से समझा जा सकेगा।

3 प्रश्न पत्र में चंदबरदाई विद्यापति कविव मलिक मोहम्मद जायसी की कविताएं सम्मिलित है जिसके माध्यम से उनके कालजयी रचनाओं का ज्ञान होगा।

4 विद्यार्थी प्राचीन व मध्य युग की भाषा से अवगत हुए

5 रासो काव्य, लौकिक काव्य एवं निर्गुण काव्य परंपरा से परिचित हुए।

एम. ए. (हिन्दी)
प्रथम सेमेस्टर
प्रश्न पत्र – द्वितीय
प्राचीन एवं मध्यकालीन काव्य
(रासो काव्य, लौकिक काव्य एवं निर्गुण काव्य)

योग : 80

पाठ्य विषयः–

व्याख्या एवं विवेचन के लिए निम्नांकित चार कवियों का अध्ययन अपेक्षित है ।

1. चंदबरदाई : पृथ्वीराज रासो, संपादक आचार्य हजारी द्विवेदी, डॉ. नामवर सिंह (पद्मावती समय)
2. विद्यापति पदावली : संपादक रामवृक्ष बेनीपुरी से प्रारंभिक 10 पद।
3. कबीर ग्रंथावलीः संपादक डॉ. श्याम सुंदर दास (50 साखियाँ तथा 15 पद) पद क्रमांक– 11, 16, 24, 26, 27, 45, 49, 64, 70, 72, 89, 93, 110, 111, 268 साखियाँ– गुरूदेव कौ अंग 1 से 10, सुमिरण कौ अंग 1 से 10, विरह कौ अंग 1 से 10, ग्यान विरह कौ अंग 1 से 5, चितावणी कौ अंग 1 से 5, माया कौ अंग 1 से 5, परचा कौ अंग 1 से 5 ।
4. मलिक मोहम्मद जायसी : पद्मावत संपादक आ. रामचंद्र शुक्ल (नागमती विरह खण्ड एवं सिंहल द्वीपखण्ड)

टीपः– द्रुत पाठ हेतु निम्नांकित 05 कवियों का एवं उनकी रचनाओं का अध्ययन अनिवार्य है, इन कवियों पर लघु उत्तरी प्रश्न पूछे जायेंगे– अमीर खुसरो, मीराबाई, रहीम, रैदास, रसखान ।

अंक विभाजन

प्रश्न1 व्याख्या	3 व्याख्या (कोई तीन)	3X10 =	30 अंक
प्रश्न2 चंदबरदाई एवं इतिहास	3 आलोचनात्मक (कोई तीन)	3X10 =	30 अंक
प्रश्न3 कबीर एवं जायसी			
प्रश्न4 (द्रुत पाठ के कवि)	5 लघु– उतरीय (सम्पूर्ण पाठ्यक्रम से)	5X2 =	10 अंक
10 वस्तुनिष्ठ (सम्पूर्ण पाठ्यक्रम से)		10X1 =	10 अंक
	योग =		**80 अंक**
	आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकेंः–

1. डॉ. विपिन बिहारी द्विवेदी – चंदबरदाई
2. कबीर की विचारधारा – डॉ. गोविन्द त्रिगुणायन
3. प्रमुख प्राचीन कवि – डॉ. द्वारिका प्रसाद सक्सेना
4. कबीर साहित्य की परख – परशुराम चतुर्वेदी
5. जायसी की विशिष्ट शब्दावली – डॉ. इंदिरा कुमारी सिंह का विश्लेशणात्मक अध्ययन
6. मलिक मोहम्मद जायसी और उनका काव्य – डॉ. शिवसहाय पाठक
7. अमीर खुसरो और उनका साहित्य – डॉ. भोलानाथ तिवारी
8. कबीर – सं. हजारी प्रसाद द्विवेदी

तृतीय प्रश्न पत्र

आधुनिक काव्य – 1

(द्विवेदीयुगीन एवं छायावादी काव्य)

इस पाठ्यक्रम का उद्देश्य है–

1. आधुनिक काव्यधारा और उसके संवेदनात्मक वैचारिक स्वरूप से अवगत करना।
2. द्विवेदीयुगीन एवं छायावाद के काव्य–वैशिष्ट्य और उसके महत्त्व से परिचित कराना।
3. हिन्दी साहित्य के पुनर्जागरण की परिस्थितियों तथा उनकी सर्जनात्मक प्रतिफलन के विषय में सम्यक दृष्टिकोण से अवगत करना।
4. मैथिलीशरण गुप्त, जयशंकर प्रसाद, निराला और महादेवी वर्मा के काव्य और उनके रचनात्मक अवदान की जानकारी देना तथा उनके साहित्य का समीक्षात्मक विश्लेषण की समझ उत्पन्न करना

पाठ्यक्रम अधिगम परिणाम

1 द्विवेदी युगीन व छायावादी काव्य के सशक्त हस्ताक्षर कवियों की युगीन प्रासंगिकता से परिचय।

2 द्विवेदी युगीन व छायावादी काव्य के माध्यम से समकालीन साहित्य का मूल्यांकन करने की क्षमता का विकास

3 साकेत महाकाव्य के माध्यम से राम कथा में उपेक्षित पात्रों से परिचय।

4 कामायनी महाकाव्य के माध्यम से जीवन के मनोवैज्ञानिक और सांस्कृतिक विकास के इतिहास का बोध।

एम.ए. पूर्व (हिन्दी)
प्रथम सेमेस्टर
प्रश्न पत्र – तृतीय
आधुनिक काव्य–1
(द्विवेदीयुगीन एवं छायावादी काव्य)

कुल : 80

पाठ्य विषयः–
व्याख्या एवं विवेचन के लिए निम्नांकित तीन कवियों का अध्ययन अपेक्षित है ।

इकाई 1. मैथिलीशरण गुप्त – साकेत नवम् सर्ग
इकाई 2. जयशंकर प्रसाद – कामायनी (चिन्ता, श्रद्धा)
इकाई 3. सूर्यकांत त्रिपाठी निराला – राम की शक्ति पूजा, सरोज स्मृति
इकाई 4. महादेवी वर्मा – मैं नीर भरी दुःख की बदली, यह मंदिर का दीप इसे नीरव जलने दो, रूपसी तेरा केश-पाश, मधुर मधुर मेरे दीपक जल।

टीपः– द्रुत पाठ हेतु निम्नांकित 5 कवियों का अध्ययन किया जाएगा ।
श्रीधर पाठक, अयोध्या सिंह उपाध्याय ''हरिऔध'', मुकुटधर पांडेय, जगन्नाथ दास रत्नाकर, सुमित्रानन्दन पंत, (लघु उत्तरीय प्रश्न द्रुत पाठ एवं पाठ्यक्रम से पूछे जाएंगे।)

अंक विभाजन

प्रश्न1– 3 व्याख्या	–	3X10	=	30 अंक
प्रश्न2– 3 आलोचनात्मक	–	3X10	=	30 अंक
प्रश्न3– 5 लघुत्तरीय (द्रुत पाठ के कवि)	–	5X2	=	10 अंक
प्रश्न4– वस्तुनिष्ठ अतिलघु उत्तरीय	–	10X1	=	10 अंक
		योग	=	**80 अंक**
		आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकेंः–

1. साकेत एक अध्ययन– डॉ. नगेन्द्र
2. कवि निराला – आचार्य नंद दुलारे वाजपेयी
3. निराला की साहित्य साधना – डॉ. रामविलास शर्मा
4. नया साहित्य नये प्रश्न – आचार्य नंद दुलारे वाजपेयी
5. कामायनी एक पुनर्विचार – मुक्तिबोध
6. प्रसाद का काव्य – प्रेमशंकर
7. हिन्दी साहित्य आधुनिक परिदृश्य – अज्ञेय
8. हिन्दी साहित्य का इतिहास – नगेन्द्र
9. बच्चन की कविताओं का शैलीवैज्ञानिक अध्ययन – डॉ. शीला शर्मा

चतुर्थ प्रश्नपत्र

आधुनिक गद्य साहित्य

(नाटक, एकांकी एवं चरितात्मक तथा आत्मकथात्मक कृति)

इस पाठ्यक्रम का उद्देश्य है–

1. आधुनिक गद्य की प्रमुख विधाओं के तात्विक स्वरूप व विकासक्रम की जानकारी देना।
2. आधुनिक गद्य साहित्य की आधुनिक संवेदना और समकालीन जीवन–बोध के सम्बंधों के प्रति सजगता प्रदान करना।
3. हिंदी नाट्य–परंपरा तथा एकांकी विधा के अध्ययन के प्रति उन्मुख करना।
4. चरितात्मक तथा आत्मकथात्मक लेखन के प्रति रचनात्मक रूप से उन्मुख और अभिप्रेरित करना।

पाठ्यक्रम अधिगम परिणाम

1 विद्यार्थियों में ऐतिहासिक विकास क्रम के परिप्रेक्ष्य में रचना विशेष के महत्व को समझने और मूल्यांकन की क्षमता विकसित हुई

2 नाटक, एकांकी के माध्यम से विद्यार्थी विविध समस्याओं से अवगत हुए और उन समस्याओं के समाधान के लिए प्रेरित किया।

3 आवारा मसीहा के माध्यम से प्रसिद्ध बांग्ला लेखक शरतचंद्र चट्टोपाध्याय की जीवनी से परिचित हुए।

4 आत्मकथात्मक कृति जूठन द्वारा दलित जीवन की पीड़ा को जानने का अवसर प्राप्त हुआ।

एम.ए. – (हिन्दी)
प्रथम सेमेस्टर
प्रश्न पत्र – चतुर्थ
आधुनिक गद्य साहित्य
(नाटक, एकांकी एवं चरितात्मक तथा आत्मकथात्मक कृति)

पूर्णांक : 80

पाठ्य विषय :–

इकाई –1. नाटक

1. स्कंदगुप्त	–	जयशंकर प्रसाद
2. हानूश	–	भीष्म साहनी
3. अन्धा युग	–	धर्मवीर भारती

इकाई –2. एकांकी

1. रीढ़ की हड्डी	–	जगदीश चन्द्र माथुर
2. एक दिन	–	लक्ष्मीनारायण मिश्र
3. ताँबे के कीड़े	–	भुवनेश्वर
4. तौलिए	–	उपेन्द्रनाथ अश्क

इकाई – 3. चरितात्मक कृति

1. पथ के साथी	–	निराला भाई
2. आवारा मसीहा	–	विष्णु प्रभाकर (संक्षिप्त संस्करण)

इकाई – 4. आत्मकथात्मक कृति

1. जूठन (भाग–एक)	–	ओम प्रकाश बाल्मिकी

इकाई विभाजन

प्रश्न – 1	–	व्याख्या
प्रश्न – 2	–	नाटक
प्रश्न – 3	–	एकांकी
प्रश्न – 4	–	चरितात्मक कृति, आत्मकथात्मक कृति
प्रश्न – 5	–	लघुउत्तरीय एवं वस्तुनिष्ठ प्रश्न

अंक विभाजन

1– 3 व्याख्या	–	3X10	=	30 अंक
2– 3 आलोचनात्क	–	3X10	=	30 अंक
3– 5 लघु उत्तरी	–	5X2	=	10 अंक
4– वस्तुनिष्ठ अति लघु उत्तरीय	–	10X1	=	10 अंक
		योग	=	**80 अंक**
		आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकें:–

1.	हिन्दी नाटक उद्‌भव और विकास	– डॉ. दशरथ ओझा
2.	हिन्दी नाटक सिद्धांत और विवेचन	– डॉ. गिरीश रस्तोगी
3.	हिन्दी नाटक पुनर्मूल्यांकन	– डॉ. सत्येन्द्र तनेजा
4.	समसामयिक हिन्दी नाटकों में चरित्र सृष्टि	– डॉ. जयदेव तनेजा
5.	प्रसाद के नाटकों का शास्त्रीय अध्ययन	– जगन्नाथ प्रसाद शर्मा
6.	आधुनिक हिन्दी नाटक	– नगेन्द्र
7.	नाटक रंगमंच और मोहन राकेश	– डॉ. सुरेन्द्र यादव
8.	प्रसाद युगीन हिन्दी नाटक	– डॉ. भगवती प्रसाद शुक्ल
9.	प्रसाद के नाटक एवं नाट्य शिल्प	– डॉ. शांति स्वरूप गुप्त
10.	नाटककार मोहन राकेश	– डॉ. सुन्दर लाल कथूरिया
11.	हिन्दी एकांकी : उद्‌भव और विकास	– रामचरण महेन्द
12.	हिन्दी रंगमंच : दशा और दिशा	– जयदेव तनेजा
13.	भीष्म साहनी के उपन्यास और नाटक	– डॉ. राकेश कुमार तिवारी

द्वितीय सेमेस्टर

प्रश्न पत्र पंचम

हिन्दी साहित्य का इतिहास (उत्तर मध्य काल से आधुनिक काल तक)

इस पाठ्यक्रम का उद्देश्य है–

1. उत्तर मध्य काल से आधुनिक काल की साहित्यिक परंपरा का सम्यक ज्ञान तथा उस काल में रचित साहित्य को समझने की दृष्टि प्रदान करना।
2. आधुनिकता और नवजागरण की ज्ञान–परंपरा और उसकी सामान्य पृष्ठभूमि की जानकारी प्रदान करना।
3. आधुनिक रचना के आस्वादन एवं समीक्षा की क्षमता विकसित करना।
4. हिंदी के आधुनिक साहित्य की सामाजिक पृष्ठभूमि से अवगत कराना तथा समाजशास्त्रीय पद्धति से उसे समझने की प्रणालियों की जानकारी देना।

पाठ्यक्रम अधिगम परिणाम

1 साहित्य की विभिन्न विधाओं का मूल्यांकन।

2 आधुनिक काल की सामाजिक, आर्थिक एवं सांस्कृतिक पृष्ठभूमि, राज्यक्रांति एवं पुनर्जागरण का समुचित ज्ञान होगा

3 हिंदी गद्य की प्रमुख विधाओं उपन्यास, कहानी ,नाटक, निबंध का विकासात्मक अध्ययन किया जाएगा।

4 छायावादोत्तर काल, प्रगतिवाद, नई कविता, नवगीत व समकालीन कविता को समझने की दृष्टि और समझ विकसित होगी।

एम. ए. (हिन्दी)
द्वितीय सेमेस्टर
प्रश्न पत्र – पंचम
हिन्दी साहित्य का इतिहास (उत्तर मध्यकाल से आधुनिक काल तक)

समय 3 घंटे पूर्णांक : 80

पाठ्य विषयः–

इकाई 1. उत्तर मध्यकाल (रीतिकाल) काल सीमा, नामकरण, प्रवृत्तियॉ, रीतिकालीन साहित्य की विभिन्न धारायें (रीतिबद्ध, रीतिसिद्ध, रीतिमुक्त) प्रवृत्तियॉ एवं विशेषताएं। रीतिकाल के प्रतिनिधि रचनाकार एवं रचनाएँ।

इकाई 2. आधुनिक काल – आधुनिक काल की सामाजिक, राजनैतिक, आर्थिक एवं सांस्कृतिक पृष्ठभूमि। सन् 1857 की राज्य क्रांति एवं पुनर्जागरण, भारतेन्दु युग और हिन्दी नवजागरण – प्रमुख साहित्यकार, साहित्य एवं साहित्यिक विषेशताएँ ।

इकाई 3. द्विवेदी युग – प्रमुख साहित्यकार एवं साहित्यिक विषेशताएँ, छायावाद– नामकरण और प्रवृत्तियॉ, प्रमुख साहित्याकार, साहित्यिक विषेशताएँ। छायावादोत्तर काल (विभिन्न प्रवृत्तियॉ) प्रगतिवाद, नई कविता, नवगीतवाद तथा समकालीन कविता, स्वच्छन्दतावाद सामान्य परिचय।

इकाई 4. हिन्दी गद्य का विकास – आधुनिक काल, गद्य साहित्य के विभिन्न रूपों का उद्भव और विकास, उपन्यास व कहानी का विकास और सामान्य प्रवृत्तियॉ, निबंध का विकास और प्रवृत्तियॉ, नाटक का उद्भव और विकास – सामान्य प्रवृत्तियॉ, गीति – नाटकों का परिचयात्मक विवेचन।

टीप :– प्रत्येक इकाई से 02 दीर्घ उत्तरीय प्रश्न पूछे जाएंगे जिनमें से 01 प्रश्न को हल करना होगा। प्रत्येक इकाई से 02 लघु उत्तरीय प्रश्न पूछे जाएंगे। कुल 8 लघु उत्तरीय प्रश्नों में से 5 प्रश्नों को हल करना होगा। सम्पूर्ण पाठ्यक्रम से पूछे गए 15 प्रश्नों में से 10 अति लघुउत्तरीय/वस्तुनिष्ठ प्रश्नों के उत्तर देने होंगे।

अंक विभाजन

प्रश्न 1	(दीर्घ उत्तरीय)	–	1X 15	= 15 अंक
प्रश्न 2	(दीर्घ उत्तरीय)	–	1X 15	= 15 अंक
प्रश्न 3	(दीर्घ उत्तरीय)	–	1X 15	= 15 अंक
प्रश्न 4	(दीर्घ उत्तरीय)	–	1X 15	= 15 अंक
प्रश्न 5	लघु उत्तरीय	–	5X 2	= 10 अंक
प्रश्न 6	वस्तुनिष्ठ	–	10X 1	= 10 अंक
			योग	= 80 अंक
			आंतरिक मूल्यांकन	20 अंक

निर्धारित पुस्तकें :–

1. आधुनिक साहित्य की प्रवृत्तियॉ – डॉ. नामवर सिंह
2. हिन्दी साहित्य बीसवीं शताब्दी – नन्ददुलारे वाजपेयी
3. आधुनिक हिन्दी साहित्य का इतिहास – कृष्ण शंकर शुक्ल
4. गद्य की विविध विधाएँ – डॉ. बापूराव देसाई
5. हिन्दी कहानी – उद्भव और विकास – डॉ. सुरेश सिन्हा
6. हिन्दी उपन्यास की प्रवृत्तियॉ – डॉ. शशि भूषण सिंह
7. हिन्दी नाटक उद्भव और विकास – डॉ. दशरथ ओझा
8. हिन्दी साहित्य का इतिहास – आचार्य रामचन्द्र शुक्ल
9. हिन्दी साहित्य का उद्भव और विकास – आचार्य हजारी प्रसाद द्विवेदी
10. हिन्दी साहित्य की भूमिका – आचार्य हजारी प्रसाद द्विवेदी

प्रश्न पत्र षष्ठ

मध्यकालीन काव्य

इस पाठ्यक्रम का उद्देश्य है–

1. मध्यकालीन काव्य के स्वरूप तथा उसकी भावभूमि से परिचित करना।

2. भक्तिकाल के महान कवियों सूरदास और तुलसीदास के काव्य–वैशिष्ट्य और उनकी कविता की लोकहितकारी भूमिका के प्रति जागरूकता उत्पन्न करना।

3 मध्यकालीन काव्य की प्रमुख प्रवृत्तियाँ एवं रचनाकारों का अध्ययन करना।

4 भक्तिकालीन साहित्य के ऐतिहासिक परिप्रेक्ष्य की जानकारी प्रदान करना।

पाठ्यक्रम अधिगम परिणाम

1 मध्यकालीन काव्य की मूल संवेदना तथा उसके भाषिक स्वरूप का बोध

2 राम एवं कृष्ण भक्ति का तुलनात्मक अध्ययन।

3 भारतीय संस्कृति विशेषता भक्तियुगीन संस्कृति के समन्वयात्मक स्वभाव के प्रति संवेदनशील होंगे।

4 हिंदी की भक्तियुगीन साहित्यिक विरासत के प्रति गौरव का अनुभव कर सकेंगे।

एम. ए. (हिन्दी)
द्वितीय सेमेस्टर
प्रश्न पत्र –षष्ठ
मध्यकालीन काव्य

समय 3 घंटे पूर्णांक : 80

पाठ्य विषय :– व्याख्या एवं विवेचन के लिए निम्नांकित तीन कवियों का अध्ययन किया जाएगा।

इकाई – 1. सूरदास –भ्रमरगीत सार – संपादक आचार्य रामचंद्र शुक्ल (50 पद) पद संख्या – 1 से 10, 21 से 30, 51 से 60, 61 से 70, 81 से 90 तक (50 पद)

इकाई – 2. तुलसीदास – रामचरित मानस (सुंदरकाण्ड) गीताप्रेस गोरखपुर

इकाई – 3. बिहारी – बिहारी रत्नाकर संपादक जगन्नाथ दास रत्नाकर (प्रारंभिक 100 दोहे)

इकाई – 4. घनानंद – घनानंद कवित्त सं.– आचार्य विश्वनाथ प्रसाद मिश्र (प्रारंभिक 25 छंद) द्रुत पाठ हेतु निम्नांकित 5 कवियों एवं उनकी रचनाओं का (विषय एवं शिल्पगत) ज्ञान अपेक्षित है केशव, भूषण, पद्माकर, देव, बोधा एवं आलम।

इन कवियों पर लघु उत्तरीय प्रश्न पूछे जाएंगे ।

अंक विभाजन

प्रश्न 1	व्याख्या	3 व्याख्या	3X10	=	30 अंक
प्रश्न 2	सूरदास, तुलसीदास	3 आलोचनात्मक	3X10	=	30 अंक
प्रश्न 3	बिहारी एवं इतिहास विषयक	प्रश्न			
प्रश्न 4	द्रुत पाठ के कवि	5 लघु उत्तरी	5X2	=	10 अंक
प्रश्न 5	वस्तुनिष्ठ प्रश्न	10 वस्तुनिष्ठ अतिलघुत्तरीय	10X1	=	10 अंक
	(संपूर्ण पाठ्यक्रम से)		**योग**	=	**80 अंक**
			आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकें :–

1. बिहारी– डॉ. विश्वनाथ प्रसाद मिश्र
2. तुलसीदास और उनका युग संदर्भ – डॉ. भगीरथ मिश्र
3. सूरदास के काव्य का मूल्यांकन – डॉ. रामरतन भटनागर
4. तुलसी साहित्य के नये संदर्भ – डॉ. एल.एन.दुबे
5. सूरदास – डॉ. हरबंस लाल वर्मा
6. तुलसीदास – प्रो. सतीश कुमार अशोक प्रकाशन नई दिल्ली
7. सूरदास – मैनेजर पाण्डेय
8. घनानंद कवित्त – आचार्य विश्वनाथ प्रसाद मिश्र

प्रश्न पत्र सप्तम

आधुनिक काव्य –2

(प्रगतिवाद प्रयोगवाद नई कविता एवं समकालीन कविता)

इस पाठ्यक्रम का उद्देश्य है–

1. आधुनिक काव्य के मूल स्वभाव की समझ प्रदान कराना ।
2. आधुनिक काव्य के संवेदनात्मक और वैचारिक स्वरूप से परिचित करना।
3. नई कविता एवं समकालीन कविता के स्वरूप और प्रणाली से अवगत कराना।
4. प्रगतिवाद और प्रयोगवाद के सौंदर्यशास्त्रीय,वैचारिक और संवेदनात्मक दृष्टिकोण से अवगत कराना।

पाठ्यक्रम अधिगम परिणाम

1 आधुनिक कालीन हिंदी काव्य का विस्तृत बोध कराना।

2 भारत के सामाजिक परिदृश्य के प्रति सजगता।

3 अज्ञेय, मुक्तिबोध की कविताओं के अध्ययन से उनकी कालजयी रचनाओं का ज्ञान।

4 रघुवीर सहाय व केदारनाथ सिंह के काव्य में अनुस्यूत मानवीय मूल्यों से साक्षात भेंट कर सकेंगे।

एम.ए. – (हिन्दी)
द्वितीय सेमेस्टर प्रश्न पत्र – सप्तम
आधुनिक काव्य–2
(प्रगतिवाद, प्रयोगवाद, नई कविता एवं समकालीन कविता)

कुल अंक : 80

पाठ्य विषय –

इकाई 1. स.ही.वात्स्यायन अज्ञेय–		नदी के द्वीप, असाध्यवीणा, बावरा अहेरी, कलगी बाजरे की, यह दीप अकेला, उधार, देह वल्ली, सोन मछली
इकाई 2. ग.मा. मुक्तिबोध	–	कविता – अंधेरे में ।
नागार्जुन	–	बसन्त की अगवानी, यह तुम थी, शासन की बंदूक, सिन्दूर तिलकित भाल, अकाल और उसके बाद।
इकाई 3. केदारनाथ अग्रवाल	–	चन्द्रगहना से लौटती बेर, बसंती हवा हूँ, आज नदी बिल्कुल उदास थी, वह जन मारे नहीं मरेगा।
त्रिलोचन	–	चंपा काले अच्छर नहीं चीन्हती, तुम्हें सौपता हूँ, उस जनपद का कवि हूँ, धूप सुन्दर
इकाई 4. रघुवीर सहाय	–	रामदास, मेरा जीवन, हँसो–हँसो जल्दी हँसो, पानी–पानी
केदारनाथ सिंह	–	जो एक स्त्री को जानता है, बुराई का गीत, विद्रोह, सृष्टि पर पहरा, टूटा हुआ ट्रक

द्रुत पाठ हेतु निम्नांकित 5 कवियों का अध्ययन किया जायेगा।
भवानी प्रसाद मिश्र, विनोद कुमार शुक्ल, धूमिल, आलोक धन्वा एवं राजेश जोशी (लघु उत्तरी प्रश्न द्रुत पाठ एवं सम्पूर्ण पाठ्यक्रम से पूछे जायेंगे)

अंक विभाजन

प्रश्न 1. 3 व्याख्या	–	3X10	=	30 अंक
प्रश्न 2. 3 आलोचनात्मक	–	3X10	=	30 अंक
प्रश्न 3. 5 लघु उत्तरीय	–	5X2	=	10 अंक
प्रश्न 4. 10 वस्तुनिष्ठ अतिलघु उत्तरीय	–	10X1	=	10 अंक
		योग	=	**80 अंक**
		आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकें :–

1. मुक्तिबोध की काव्य प्रक्रिया – अशोक चक्रधर
2. अज्ञेय का रचना संसार – डॉ. रामस्वरूप चतुर्वेदी
3. कविता की तीसरी आंख – डॉ. प्रभाकर श्रोत्रिय
4. कविता से साक्षात्कार – मलयज
5. हिन्दी साहित्य का इतिहास – डॉ. रामचन्द्र शुक्ल
6. कविता की संगत – विजय कुमार
7. कविता का अर्थात्– परमानंद श्रीवास्तव
8. नागार्जुन का रचना संसार – विजय बहादुर सिंह
9. छायावादोत्तर प्रबंध काव्यों में ऐतिहासिक, सांस्कृतिक एवं दार्शनिक तत्वों का अनुशीलन – डॉ. ज्योति पाण्डेय
10. छायावादोत्तर काव्यों की विभिन्न प्रवृत्तियों एवं उनका चैन्तनिक पक्ष – डॉ. ज्योति पाण्डेय
11. केदारनाथ सिंह की कविता – बिम्ब से आख्यान तक – गोविंद प्रसाद, नेहा पब्लिशर
12. कवि केदारनाथ सिंह– सम्पादक भारत यायावर, वाणी प्रकाशन, दिल्ली
13. कविता की संगत – विजय कुमार, आधार प्रकाशन पंचकूला
14. नई कविता और अस्तित्ववादी – रामविलास शर्मा
15. त्रिलोचन – सम्पादक महावीर अग्रवाल, श्री प्रकाशन, आदर्श नगर, दुर्ग
16. केदारनाथ – अग्रवाल सम्पादक महावीर अग्रवाल, श्री प्रकाशन, आदर्श नगर, दुर्ग
17. प्रगतिशील कविता के सौंदर्य –मूल्य – अजय तिवारी

प्रश्न पत्र अष्टम

आधुनिक गद्य साहित्य

(उपन्यास, निबंध एवं कहानी)

इस पाठ्यक्रम का उद्देश्य है–

1 युगीन संदर्भों के आलोक में उपन्यास, निबंध एवं कहानी गद्य विधाओं को जान सकेंगे।
2 हिन्दी गद्य साहित्य के प्रमुख स्तम्भ आचार्य रामचंद्र शुक्ल, मुंशी प्रेमचंद्र, जयशंकर प्रसाद आदि की प्रसिद्ध रचनाओं पर समीक्षात्मक दृष्टि विकसित कराना ।
3 आधुनिक गद्य साहित्य के अनुभव–संसार के साक्ष्य से सामाजिक वास्तविकता के साक्षात्कार का प्रयत्न करना।
4 आधुनिक गद्य साहित्य की संवेदनात्मक बुनावट को समझने की दृष्टि प्रदान करना ।

पाठ्यक्रम अधिगम परिणाम

1. आधुनिक गद्य साहित्य के सशक्त लेखकों का आलोचनात्मक अध्ययन।
2. आधुनिक समाज की जीवंत समस्याओं का विस्तृत ज्ञान।
3. भारत के सामाजिक परिदृश्य के प्रति सजगता।
4. उपन्यास, कहानी व निबंध लेखन का अभिज्ञान।

एम.ए. – (हिन्दी)

द्वितीय सेमेस्टर प्रश्न पत्र – अष्टम

आधुनिक गद्य साहित्य (उपन्यास, निबंध एवं कहानी)

पाठ्य विषयः–

पूर्णांक : 80

उपन्यास	–	1. गोदान	– प्रेमचंद
		2. बाणभट्ट की आत्मकथा	– हजारी प्रसाद द्विवेदी
		3. सूखा बरगद	– मंजूर एहतेशाम
निबंध	–	1. चढ़ती उमर	– बालकृष्ण भट्ट
		2. कविता क्या है?	– रामचंद्र शुक्ल
		3. माटी की मूरतें	– रामवृक्ष बेनीपुरी
		4. चन्द्रमा मनसो जातः	– विद्यानिवास मिश्र
		5. वैष्णव की फिसलन	– हरिशंकर परसाई
कहानी	–	1. उसने कहा था	– चन्द्रधर शर्मा गुलेरी
		2. पुरस्कार	– जयशंकर प्रसाद
		3. शतरंज के खिलाड़ी	– प्रेमचंद
		4. वापसी	– उषा प्रियम्वदा
		5. डिप्टी कलक्टरी	– अमरकांत

अंक विभाजन

प्रश्न 1. 3 व्याख्या	–	3X10	=	30 अंक
प्रश्न 2. 3 आलोचनात्मक प्रश्न	–	3X10	=	30 अंक
प्रश्न 3. 5 लघु उत्तरीय प्रश्न	–	5X2	=	20 अंक
प्रश्न 4. 10 वस्तुनिष्ठ प्रश्न	–	10X1	=	10 अंक
		योग	=	**80 अंक**
		आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकेंः–

1. प्रेमचंद और उनका युग	–	रामविलास शर्मा
2. गोदान के अध्ययन की समस्याएं	–	डॉ. गोपाल राय
3. हिन्दी उपन्यास की शिल्पविधि का विकास	–	सिद्धनाथ तनेजा
4. हिन्दी उपन्यास उद्‌भव और विकास	–	सुरेश सिन्हा
5. प्रेमचंद : एक अध्ययन	–	राजेश्वर गुरू
6. हिन्दी निंबध के आधार स्तम्भ	–	डॉ. हरिमोहन
7. हिन्दी कहानी : उद्‌भव और विकास	–	सुरेश सिन्हा
8. कहानी : स्वरूप और संवेदना	–	राजेन्द्र यादव
9. कहानी : नयी कहानी	–	नामवर सिंह
10. हजारी प्रसाद द्विवेदी	–	सं. विश्वनाथ तिवारी
11. प्रेमचंद का जीवनदर्शन एवं रंगभूमि	–	डॉ. शंकर बुन्देले

एम.ए.–हिन्दी

तृतीय सेमेस्टर, प्रश्न पत्र–प्रथम

साहित्य के सिद्धान्त तथा आलोचना शास्त्र

हर देश और समाज में प्राचीन काल से श्रेष्ठ साहित्य की रचना होती रही है। श्रेष्ठ रचनाओं के आधार पर साहित्य के सिद्धान्त और आलोचना के शास्त्र विकसित हुए। इस प्रश्न–पत्र का उद्देश्य विद्यार्थियों को भारतीय एवं पाश्चात्य साहित्य के सिद्धांतों तथा आलोचना शास्त्र से परिचय कराना है।

इस पाठ्यक्रम का उद्देश्य है :–

(1) विद्यार्थियों में आलोचनात्मक विवेक पैदा करना।

(2) भारतीय एवं पाश्चात्य साहित्य के सिद्धान्तों और आलोचना शास्त्र से अवगत कराना।

(3) साहित्य के पारंपरिक और आधुनिक मूल्यांकन के मानदण्डों और प्रतिमानों से परिचय कराना।

(4) साहित्य के सिद्धान्तों और आलोचना शास्त्र के माध्यम से समकालीन साहित्य की समझ और मूल्यांकन के लिए प्रेरित करना।

पाठ्यक्रम अधिगम परिणाम :–

(1) विद्यार्थियों में साहित्य का आलोचनात्मक विवेक पैदा होगा।

(2) साहित्य के सिद्धांत और आलोचनाशास्त्र की भारतीय एवं पाश्चात्य परम्परा से परिचित हो सकेंगे।

(3) उन्हें श्रेष्ठ साहित्य के मानदण्डों का ज्ञान होगा।

(4) समकालीन साहित्य की आलोचना और मूल्यांकन की दिशा में वे उन्मुख हो सकेंगे।

एम.ए. – (हिन्दी)

तृतीय सेमेस्टर प्रश्न पत्र – प्रथम

साहित्य के सिद्धांत तथा आलोचना शास्त्र

पूर्णांक : 80

पाठ्य विषयः–

इकाई–1 भारतीय काव्य शास्त्र
काव्य लक्षण, काव्य हेतु, काव्य प्रयोजन और काव्य के प्रकार
रस सिद्धांत, रस का स्वरूप, रस निष्पत्ति और साधारणीकरण, रस के अंग ।

इकाई–2 अलंकार सिद्धांत रीति सिद्धांत, वक्रोक्ति सिद्धांत, ध्वनि सिद्धांत और औचित्य सिद्धांत

इकाई–3 पाश्चात्य काव्य शास्त्र प्लेटो – काव्य सिद्धांत अरस्तू– अनुकरण का सिद्धांत, विरेचन सिद्धांत, लोंजाइनस–उदात्त की अवधारणा

इकाई–4 मैथ्यू आर्नल्ड– कला की अवधारणा टी.एस. इलियट – कला की निर्वैयक्तिकता, कॉलरिज–कल्पना सिद्धांत, क्रिस्टोफर कॉडवेल – कविता संबंधी विचार

टीप :– प्रत्येक इकाई से 02 दीर्घ उत्तरीय प्रश्न पूछे जाएंगे जिनमें से 01 प्रश्न को हल करना होगा। प्रत्येक इकाई से 02 लघु उत्तरीय प्रश्न पूछे जाएंगे। कुल 8 लघु उत्तरीय प्रश्नों में से 5 प्रश्नों को हल करना होगा। सम्पूर्ण पाठ्यक्रम से पूछे गए 15 प्रश्नों में से 10 अति लघु उत्तरीय/वस्तुनिष्ठ प्रश्नों के उत्तर देने होंगे।

अंक विभाजन

प्रश्न 1	–	1 X 15	=	15 अंक
प्रश्न 2	–	1 X 15	=	15 अंक
प्रश्न 3	–	1 X 15	=	15 अंक
प्रश्न 4	–	1 X 15	=	15 अंक
प्रश्न 5 लघु उत्तरीय	–	5 X 2	=	10 अंक
प्रश्न 6 वस्तुनिष्ठ	–	10 X 1	=	10 अंक
		योग	=	**80 अंक**
		आंतरिक मूल्यांकन		**20 अंक**

1. डॉ. गणपति चन्द्रगुप्त – भारतीय एवं पाश्चात्य काव्य सिद्धांत
2. डॉ. भगीरथ मिश्र – पाश्चात्य काव्य शास्त्र, इतिहास, सिद्धांत एवं वाद
3. डॉ. राममूर्ति त्रिपाठी– भारतीय काव्य शास्त्र के नये क्षितिज
4. डॉ. शिवकुमार मिश्र– मार्क्सवादी साहित्य के सिद्धांत
5. डॉ. नगेन्द्र – भारतीय काव्य शास्त्र की भूमिका
6. डॉ. निर्मला जैन – पाश्चात्य साहित्य चिंतन
7. मुलजी भाई– भारतीय और पाश्चात्य काव्य शास्त्र
8. डॉ. गंगा प्रसाद विमल – आधुनिकता, साहित्य के संदर्भ में ।
9. क्रिस्टोफर कॉडवेल – विभ्रम और यथार्थ, राजकमल प्रकाशन।
10. नामवर सिंह – आधुनिक हिन्दी उपन्यास खण्ड 2, राजकमल प्रकाशन, दिल्ली

एम.ए.–हिन्दी

तृतीय सेमेस्टर, प्रश्न पत्र–द्वितीय

भाषा विज्ञान

भाषा हमारे अस्तित्व, ज्ञान और चिन्तन का आधार है। भाषा में समय के साथ बदलाव और परिवर्तन होते हैं परन्तु ये परिवर्तन और विकास मनमाना नहीं होते उसकी एक पद्धति और नियम होते हैं, जिसकी समझ इस प्रश्न पत्र के माध्यम से विद्यार्थियों में पैदा की जा सकेगी।

इस पाठ्यक्रम का उद्देश्य है :–

(1) विद्यार्थियों को भाषा में परिवर्तन और विकास के नियमों से अवगत कराना।

(2) भाषा की ध्वनियों के वर्गीकरण और उच्चारण का वास्तविक ज्ञान कराना।

(3) भाषा की शुद्धता को बनाये रखने के लिए व्याकरण का ज्ञान देना।

(4) शब्द और अर्थ के संबंध, अनेकार्थता और अर्थ परिवर्तन का बोध कराना।

पाठ्यक्रम अधिगम परिणाम :–

(1) विद्यार्थी भाषा में परिवर्तन और विकास के नियमों से परिचित हो सकेंगे।

(2) उन्हें ध्वनियों के वर्गीकरण और सही उच्चारण का ज्ञान होगा।

(3) व्याकरण के ज्ञान के कारण वे शुद्ध भाषा का प्रयोग कर पायेंगे।

(4) विद्यार्थी शब्द और अर्थ के संबंध, अनेकार्थता और शब्दों के अर्थ परिवर्तन से परिचित हो सकेंगे।

एम.ए. – (हिन्दी)
तृतीय सेमेस्टर प्रश्न पत्र – द्वितीय
भाषा विज्ञान

पूर्णांक : 80

पाठ्य विषयः–

इकाई –1 भाषा और भाषा विज्ञान, भाषा की परिभाषा और अभिलक्षण, भाषा व्यवस्था और भाषा व्यवहार, भाषा संरचना, भाषा विज्ञान स्वरूप एवं व्याप्ति, अध्ययन की दिशाएँ–वर्णनात्मक, ऐतिहासिक और तुलनात्मक ।

इकाई –2 स्वन प्रक्रिया : स्वन विज्ञान का स्वरूप और शाखाएँ, वागवयव और उनके कार्य, स्वन की अवधारणा और स्वनों का वर्गीकरण, स्वन गुण, स्वनिक परिवर्तन। स्वनिम विज्ञान का स्वरूप, स्वनिम की अवधारणा, स्वनिम के भेद ।

इकाई –3 व्याकरण : रूप विज्ञान का स्वरूप और शाखाएँ, रूपिम की अवधारणा और भेद, मुक्त – आबद्ध अर्थदर्शी और संबंधदर्शी रूपिम और शाखाएँ, रूपिम के भेद और प्रकार्य। वाक्य के भेद, वाक्य–विश्लेषण, निकटस्थ अवयव विश्लेषण ।

इकाई –4 अर्थ विज्ञान : अर्थ की अवधारणा, शब्द और अर्थ का संबंध, पर्यायता, अनेकार्थता, विलोमता, अर्थ – परिवर्तन।

टीप :– प्रत्येक इकाई से 02 दीर्घ उत्तरीय प्रश्न पूछे जाएंगे जिनमें से 01 प्रश्न को हल करना होगा। प्रत्येक इकाई से 02 लघु उत्तरीय प्रश्न पूछे जाएंगे। कुल 8 लघु उत्तरीय प्रश्नों में से 5 प्रश्नों को हल करना होगा। सम्पूर्ण पाठ्यक्रम से पूछे गए 15 प्रश्नों में से 10 अति लघु उत्तरीय/वस्तुनिष्ठ प्रश्नों के उत्तर देने होंगे।

अंक विभाजन

प्रश्न 1 –	1 X 15	=	15 अंक
प्रश्न 2 –	1 X 15	=	15 अंक
प्रश्न 3 –	1 X 15	=	15 अंक
प्रश्न 4 –	1 X 15	=	15 अंक
प्रश्न 5 –	5 X 2	=	10 अंक
प्रश्न 6 –	10 X 1	=	10 अंक
	योग	=	**80 अंक**
	आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकेंः–

1. सामान्य भाषा विज्ञान– डॉ. बाबूराम सक्सेना
2. भाषा विज्ञान – डॉ. भोलानाथ तिवारी
3. भारत के भाषा परिवार – डॉ. रामनिवास शर्मा
4. भाषाशास्त्र की रूपरेखा – उदयनारायण तिवारी
5. हिन्दी शब्दानुशासन – किशोरी दास बाजपेयी
6. भाषा विज्ञान और भाषा शास्त्र – कपिलदेव द्विवेदी
7. सामान्य भाषाविज्ञान – बाबूराम सक्सेना
8. हिन्दी और उसका संक्षिप्त इतिहास – भोलानाथ तिवारी
9. हिन्दी और उसकी विविध बोलियॉ – प्रो. दीपचंद जैन
10. भाषा विज्ञान के सिद्धांत और हिन्दी भाषा – द्वारिका प्रसाद मिश्र

एम.ए.–हिन्दी

तृतीय सेमेस्टर, प्रश्न पत्र–तृतीय

कामकाजी हिन्दी एवं पत्रकारिता

हिन्दी सर्जनात्मकता की भाषा होने के साथ–साथ राजभाषा, संचार भाषा और सम्पर्क भाषा भी है। कम्प्यूटर पर इसके प्रयोग निरन्तर बढ़ रहे हैं। इन्टरनेट में भी इसका उपयोग हो रहा है। ज्ञान के दूसरे अनुशासनों को हिन्दी में उपलब्ध कराने हेतु पारिभाषिक शब्दावली का निर्माण और प्रयोग भी हो रहा है। समय की आवश्यकता और माँग के अनुसार भाषा के इन समस्त प्रकार्यों एवं पत्रकारिता के विविध आयामों से विद्यार्थियों को परिचित कराने के उद्देश्य से इस पाठ्यक्रम का निर्माण किया गया है।

इस पाठ्यक्रम का उद्देश्य है :–

(1) हिन्दी भाषा के विविध रूपों–सर्जनात्मक भाषा, राजभाषा, माध्यम भाषा–के विविध प्रकार्यों से विद्यार्थियों को परिचित कराना।

(2) बदलते समय की माँग के अनुरूप हिन्दी में कम्प्यूटर और इन्टरनेट के उपयोग के बारे में जानकारी प्रदान करना।

(3) हिन्दी में पारिभाषिक शब्दावली के निर्माण के सिद्धान्तों एवं ज्ञान के विविध क्षेत्र की पारिभाषिक शब्दावलियों से विद्यार्थियों को परिचित करना।

(4) हिन्दी पत्रकारिता के इतिहास के साथ पत्रकारिता से जुड़े व्यावहारिक ज्ञान प्रदान करना।

पाठ्यक्रम अधिगम परिणाम :–

(1) विविध क्षेत्रों में हिन्दी भाषा के प्रयोग से विद्यार्थी परिचित हो सकेंगे।

(2) कम्प्यूटर और इन्टरनेट पर हिन्दी के उपयोग की जानकारी उन्हें हो सकेगी।

(3) विविध क्षेत्र के पारिभाषिक शब्दावलियों एवं पारिभाषिक शब्दावली के निर्माण के सिद्धान्तों से वे अवगत हो सकेंगे।

(4) पत्रकारिता के इतिहास के साथ–साथ पत्रकारिता से जुड़े विविध कार्यों की व्यावहारिक जानकारी प्राप्त कर सकेंगे।

एम.ए. – (हिन्दी)
तृतीय सेमेस्टर प्रश्न पत्र – तृतीय
कामकाजी हिन्दी एवं पत्रकारिता

पाठ्य विषयः– पूर्णांक : 80

इकाई–1 हिन्दी के विभिन्न रूप – सर्जनात्मक भाषा, संचार भाषा, राजभाषा, माध्यम भाषा, कार्यालयीन हिन्दी (राजभाषा) के प्रमुख प्रकार्य– प्रारूपण, पत्र लेखन, संक्षेपण, पल्लवन, टिप्पणी ।

इकाई–2 पारिभाषिक शब्दावली, स्वरूप एवं महत्व, पारिभाषिक शब्दावली निर्माण के सिद्धांत, ज्ञान–विज्ञान के विभिन्न क्षेत्रों की पारिभाषिक शब्दावली। हिन्दी कम्प्यूटर– कम्प्यूटर परिचय, उपयोगिता क्षेत्र, वेब पेज, पब्लिशिंग परिचय।

इकाई–3 इंटरनेट संपर्क उपकरणों का परिचय, प्रकार्यात्मक रख–रखाव एवं इंटरनेट समय मितव्यतता के सूत्र । इंटरनेट एक्सप्लोइट अथवा नेट स्केप । हिन्दी साफ्टवेयर पैकेज ।

इकाई–4 पत्रकारिता का स्वरूप एवं प्रकार, हिंदी पत्रकारिता का संक्षिप्त इतिहास । समाचार लेखन कला, संपादन के आधारभूत तत्व, व्यवहारिक प्रूफशोधन, शीर्शक संरचना, लीड, इंट्रो एवं शीर्षक, संपादकीय लेखन, पृष्ठ सज्जा, साक्षात्कार, पत्रकारवार्ता एवं प्रेस प्रबंधन, प्रमुख प्रेस कानून एवं आचार संहिता ।

टीप :– प्रत्येक इकाई से 02 दीर्घ उत्तरीय प्रश्न पूछे जाएंगे जिनमें से 01 प्रश्न को हल करना होगा। प्रत्येक इकाई से 02 लघु उत्तरीय प्रश्न पूछे जाएंगे। कुल 8 लघु उत्तरीय प्रश्नों में से 5 प्रश्नों को हल करना होगा। सम्पूर्ण पाठ्यक्रम से पूछे गए 15 प्रश्नों में से 10 अति लघुउत्तरीय/वस्तुनिष्ठ प्रश्नों के उत्तर देने होंगे।

अंक विभाजन

प्रश्न 1 –	1X 15	=	15 अंक
प्रश्न 2 –	1X 15	=	15 अंक
प्रश्न 3 –	1X 15	=	15 अंक
प्रश्न 4 –	1X 15	=	15 अंक
प्रश्न 5 –	5X 2	=	10 अंक
प्रश्न 6 –	10X 1	=	10 अंक
	योग	=	**80 अंक**
	आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकेंः–

1. प्रयोजन परक हिन्दी – प्रो. सूर्यप्रसाद दीक्षित
2. प्रशासनिक हिन्दी – पुष्पा कुमारी, क्लासिक पब्लिक कम्पनी
3. पत्रकारिता के छह दशक – जगदीश प्रसाद चतुर्वेदी
4. हिन्दी पत्रकारिता का प्रतिनिधि संकलन – तरूशिखा सुरजन, राजकमल प्रकाशन,नई दिल्ली
5. हिन्दी पत्रकारिता – कृष्ण बिहारी मिश्र
6. भारतीय समाचार पत्रों का संगठन एवं प्रबंधन – डॉ. सुकुमार जैन
7. पत्रकारिता का इतिहास एवं जनसंचार माध्यम – डॉ. संजीव भनावत
8. कम्प्यूटर के भाषिक अनुप्रयोग – विजय मल्होत्रा
9. कम्प्यूटर एप्लीकेशन – गौरव अग्रवाल

एम.ए.–हिन्दी

तृतीय सेमेस्टर, प्रश्न पत्र–चतुर्थ

भारतीय साहित्य

भारत में रचित विविध भाषाओं के साहित्य के इतिहास और साहित्य में रूचि पैदा करने, अनेकता में एकता के तत्वों की तलाश करने एवं विविध भाषाओं के साहित्य के तुलनात्मक अध्ययन करने के उद्देश्य से इस पाठ्यक्रम का निर्माण किया गया है। इससे एक समावेशी राष्ट्र के निर्माण में मदद मिलेगी।

इस पाठ्यक्रम का उद्देश्य है :–

(1) विद्यार्थियों में अपनी भाषा के साहित्य के अलावे अन्य भारतीय भाषाओं के साहित्य के प्रति रूचि पैदा करना।

(2) विविध भारतीय भाषाओं के साहित्य का तुलनात्मक अध्ययन कर उनके बीच समता और विषमता के तत्वों की पहचान करना।

(3) अनुवाद के माध्यम से भारतीय साहित्य की कुछ श्रेष्ठ रचनाओं का आलोचनात्मक अध्ययन करना।

(4) भारतीय साहित्य की अवधारणा का विकास करना।

पाठ्यक्रम अधिगम परिणाम :–

(1) विद्यार्थियों में अन्य भाषाओं के साहित्य के अध्ययन के प्रति रूचि विकसित होगी।

(2) भारतीय भाषाओं के साहित्य के प्रति परिचय का दायरा बढ़ेगा और भाषिक संकीर्णता दूर होगी।

(3) विद्यार्थी भारतीय भाषाओं के साहित्य के तुलनात्मक अध्ययन करने की दिशा में अग्रसर होंगे।

(4) भारतीय साहित्य की अवधारणा मजबूत होगी और राष्ट्रीय एकता को बढ़ावा मिलेगा।

एम. ए. – (हिन्दी साहित्य)
तृतीय सेमेस्टर प्रश्न पत्र – चतुर्थ
भारतीय साहित्य

पूर्णांक : 80

पाठ्य विषय :–

इकाई–1 भारतीय साहित्य का स्वरूप, भारतीय साहित्य के अध्ययन की समस्याएँ, भारतीय साहित्य में आज के भारत का बिम्ब, हिन्दी साहित्य में भारतीय मूल्यों की अभिव्यक्ति ।

इकाई–2 हिन्दीतर साहित्य का इतिहास जो तीन वर्गों में विभक्त है –

1. दक्षिणात्य भाषा वर्ग से मलयालम
2. पूर्वांचल भाषा वर्ग में बँगला
3. पश्चिमोत्तर भाषा वर्ग में मराठी

प्रत्येक विद्यार्थी इन तीनों विकल्पों में से एक भाषा चयन करेंगे बशर्ते वह भाषा अपनी क्षेत्रीय भाषा से भिन्न भाषा वाले वर्ग से संबंधित हो। विद्यार्थी एक भाषा वर्ग (मलयालम, बंगला, मराठी) में से किसी एक के इतिहास एवं हिन्दी भाषा साहित्य से उस भाषा साहित्य का तुलनात्मक अध्ययन करेंगे।

इकाई–3 उपन्यास – अग्निगर्भ (बंगला– महाश्वेता देवी)

इकाई– 4 नाटक – हयवदन (कन्नड़–गिरीशकर्नाड)

कविता संग्रह – कोच्चि के दरख्त (मलयालम– के.जी. शंकर पिल्लै)

इकाई तीन तथा चार के अंतर्गत केवल आलोचनात्मक प्रश्न पूछे जाएँगे ।

अंक विभाजन

प्रश्न 1 –	1X 15	=	15 अंक
प्रश्न 2 –	1X 15	=	15 अंक
प्रश्न 3 –	1X 15	=	15 अंक
प्रश्न 4 –	1X 15	=	15 अंक
प्रश्न 5 –	5X 2	=	10 अंक
प्रश्न 6 –	10X 1	=	10 अंक
	योग	=	**80 अंक**
	आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकें :–

1. मलयालम साहित्य – परख और पहचान – प्रो. आर. सुरेन्द्रन ।
2. राष्ट्रीय चेतना और मलयालम साहित्य – प्रो. आर. सुरेन्द्रन ।
3. मराठी भाषा और साहित्य – राजमल वोरा
4. मलयालम साहित्यकारों से साक्षात्कार – प्रो. आर. सुरेन्द्रन ।
5. बंगला भाषा और साहित्य का इतिहास – भारतीय भाषा संस्थान, इलाहाबाद
6. भारतीय साहित्य – डॉ. नगेन्द्र
7. भारतीय साहित्य रत्नमाला – सं.कृष्णदयाल भार्गव
8. भारतीय साहित्य के इतिहास की समस्याएँ – डॉ. रामविलास शर्मा
9. भारतीय भाषाओं के साहित्य का इतिहास – केन्द्रीय हिन्दी निर्देशालय, दिल्ली ।
10. भारतीय साहित्य : अवधारणा, समन्वय एवं सादृश्यता– जगदीश गुप्त

एम.ए.–हिन्दी

चतुर्थ सेमेस्टर, प्रश्न पत्र–पंचम

हिन्दी आलोचना तथा समीक्षा शास्त्र

साहित्य एवं साहित्येतर क्षेत्र के विभिन्न वादों, सिद्धान्तों, हिन्दी के कवि आचार्यों एवं काव्यशास्त्रीय चिंतन एवं हिन्दी आलोचना की परम्परा और उसकी प्रवृत्तियों से परिचय कराने के उद्देश्य से इस प्रश्न पत्र का निर्माण किया गया है, जिससे विद्यार्थियों में आलोचनात्मक विवेक एवं व्यावहारिक समीक्षा के प्रति रूचि जागृत होगी।

इस पाठ्यक्रम का उद्देश्य है :–

(1) विद्यार्थियों को साहित्य एवं साहित्येतर क्षेत्र के विभिन्न वादों एवं सिद्धान्तों से परिचय करना जिससे उनकी आलोचनात्मक क्षमता का विकास हो।

(2) हिन्दी के कवि आचार्यों एवं काव्य शास्त्रीय चिन्तन की परम्परा तथा हिन्दी के प्रसिद्ध आलोचकों की आलोचना से विद्यार्थियों को परिचित कराना।

(3) हिन्दी आलोचना की विविध प्रवृत्तियों की जानकारी प्रदान करना।

(4) विद्यार्थियों में स्वतंत्र आलोचनात्मक विवेक पैदा करने हेतु व्यावहारिक समीक्षा का अभ्यास कराना।

पाठ्यक्रम अधिगम परिणाम :–

(1) विद्यार्थियों को साहित्य एवं साहित्येतर क्षेत्र के विभिन्न वादों एवं सिद्धांतों का ज्ञान होगा।

(2) वे हिन्दी की काव्यशास्त्रीय चिंतन की परम्परा के साथ–साथ हिन्दी के प्रसिद्ध आलोचकों की आलोचना से परिचय प्राप्त कर सकेंगे।

(3) उन्हें हिन्दी आलोचना की विविध प्रवृत्तियों का ज्ञान होगा।

(4) उनमें नवीन कृतियों की व्यावहारिक आलोचना हेतु आलोचनात्मक विवेक पैदा होगा।

एम.ए. – (हिन्दी)
चतुर्थ सेमेस्टर
प्रश्न पत्र – पंचम
हिन्दी आलोचना तथा समीक्षा शास्त्र

पूर्णांक : 80

पाठ्य विषयः–

इकाई 1 मनोविश्लेशणवाद, अस्तित्ववाद, अभिजात्यवाद, स्वच्छंदतावाद, अभिव्यंजनावाद, मार्क्सवाद, आधुनिक समीक्षा की विशिष्ट प्रवृत्तियॉ, संरचनावाद, शैलीविज्ञान, उत्तर आधुनिकता।

इकाई 2 हिन्दी कवि आचार्यों का काव्य शास्त्रीय चिंतन– लक्षण काव्य परम्परा – आचार्य रामचन्द्र शुक्ल, आचार्य नंददुलारे वाजपेयी, डॉ. रामविलास शर्मा, नामवर सिंह।

इकाई 3 आधुनिक हिन्दी आलोचना का विकास एवं उसकी प्रमुख प्रवृत्तियॉ–शास्त्रीय, ऐतिहासिक, मनोविश्लेषणवादी, सौंदर्य शास्त्रीय, मार्क्सवादी, शैली वैज्ञानिक।

इकाई 4 व्यावहारिक समीक्षा : काव्यांश की स्वविवेक के अनुसार व्याख्या
त्रिलोचन, मुक्तिबोध, सर्वेश्वर दयाल सक्सेना, श्रीकांत वर्मा, अरूण कमल, विनोद कुमार शुक्ल।

अंक विभाजन

प्रश्न 1 – (दीर्घ उत्तरीय)	1 X 15	=	15 अंक
प्रश्न 2 – (दीर्घ उत्तरीय)	1 X 15	=	15 अंक
प्रश्न 3 – (दीर्घ उत्तरीय)	1 X 15	=	15 अंक
प्रश्न 4 – (दीर्घ उत्तरीय)	1 X 15	=	15 अंक
प्रश्न 5 – लघु उत्तरीय	5 X 2	=	10 अंक
प्रश्न 6 – वस्तुनिष्ठ	10 X 1	=	10 अंक
	योग	=	**80 अंक**
	आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकें :–

1. डॉ. गोविंद त्रिगुणायत –शास्त्रीय समीक्षा के सिद्धांत भाग 1 एवं 2
2. डॉ. भगवत स्वरूप मिश्र – हिन्दी आलोचना : उद्‌भव और विकास
3. डॉ. रामेश्वर खण्डेलवाल – हिन्दी आलोचना के आधार स्तम्भ
4. डॉ. शिवकरण सिंह – आलोचना के बदलते मानदण्ड और हिन्दी साहित्य
5. डॉ. नंदकिशोर नवल – हिन्दी आलोचना का विकास
6. योगेन्द्र शाही – अस्तित्ववाद किर्कगार्द से कामू तक
7. रणधीर सिन्हा – आलोचनात्मक रामविलास शर्मा
8. नामवर सिंह – आलोचना की दूसरी परम्परा, सम्पादक कमला प्रसाद, वाणी प्रकाशन नई दिल्ली
9. कविता की संगत – विजय कुमार, आधार प्रकाशन पंचकूला
10. हिन्दी आलोचना का इतिहास – नन्द किशोर नवल, राजकमल प्रकाशन

एम.ए.–हिन्दी

चतुर्थ सेमेस्टर, प्रश्न पत्र–षष्ठ

हिन्दी भाषा

हिन्दी आज हमारी राजभाषा, संचार भाषा, सम्पर्क भाषा होने के साथ हमारे ज्ञान–विज्ञान, चिन्तन एवं अभिव्यक्ति का माध्यम भी है। इस प्रश्न पत्र का उद्देश्य विद्यार्थियों को हिन्दी की ऐतिहासिक पृष्ठभूमि, भौगोलिक विस्तार, उसके विविध रूपों एवं हिन्दी में कम्प्यूटर की सुविधाओं की जानकारी देने के साथ–साथ आँकड़ा संसाधन, शब्द संसाधन, वर्तनी शोधक, हिन्दी भाषा शिक्षण तथा उसकी लिपि की विशिष्टताओं से अवगत कराना है।

इस पाठ्यक्रम का उद्देश्य है :–

(1) हिन्दी भाषा के विकास की ऐतिहासिक पृष्ठभूमि से विद्यार्थियों को परिचित कराना।

(2) हिन्दी भाषा के भौगोलिक विस्तार की जानकारी प्रदान करना।

(3) सम्पर्क भाषा, राष्ट्र भाषा, राजभाषा, संचार भाषा के रूप में हिन्दी के विविध रूपों तथा उसकी संवैधानिक स्थिति के बारे में विद्यार्थियों को जानकारी देना।

(4) हिन्दी में कम्प्यूटर की सुविधाओं तथा देवनागरी लिपि की विशिष्टताओं से विद्यार्थियों को अवगत कराना।

पाठ्यक्रम अधिगम परिणाम :–

(1) विद्यार्थी हिन्दी भाषा के विकास की ऐतिहासिक पृष्ठभूमि से परिचित हो सकेंगे।

(2) उन्हें हिन्दी भाषा के भौगोलिक विस्तार का ज्ञान होगा।

(3) वे हिन्दी भाषा के विविध रूपों तथा उसकी संवैधानिक स्थिति से परिचित होंगे।

(4) हिन्दी में कम्प्यूटर की सुविधाओं के साथ–साथ देवनागरी लिपि की विशेषताओं से परिचित हो सकेंगे।

एम.ए. – (हिन्दी)
चतुर्थ सेमेस्टर प्रश्न पत्र –षष्ठ
हिन्दी भाषा

पूर्णांक : 80

पाठ्य विषयः–

इकाई–1 हिन्दी की ऐतिहासिक पृष्ठभूमि : प्राचीन भारतीय आर्य भाषाएँ – वैदिक तथा लौकिक संस्कृत और उनकी विषेशताएँ । मध्यकालीन भारतीय आर्यभाषाएँ – पालि, प्राकृत, शौरसेनी, अर्धमागधी, मागधी, अपभ्रंश और उनकी विशेषताएँ । आधुनिक भारतीय भाषाएँ और उनका वर्गीकरण ।

इकाई–2 हिन्दी का भौगोलिक विस्तार – हिन्दी की उपभाषाएँ, पश्चिमी हिन्दी, पूर्वी हिन्दी, राजस्थानी, बिहारी तथा पहाड़ी और उनकी बोलियॉ। खड़ी बोली, ब्रज और अवधी की विशेषताएँ।

इकाई–3 हिन्दी के विविध रूप– संपर्क भाषा, राष्ट्रभाषा, राजभाषा के रूप में हिन्दी, माध्यम भाषा, संचार भाषा, हिन्दी की संवैधानिक स्थिति ।

इकाई–4 हिन्दी में कम्प्यूटर सुविधाएँ – आंकड़ा संसाधन और शब्द संसाधन, वर्तनी शोधक, मशीनी अनुवाद, हिन्दी भाषा शिक्षण । देवनागरी लिपि : विशेषताएँ और मानकीकरण ।

टीप :– प्रत्येक इकाई से 02 दीर्घ उत्तरीय प्रश्न पूछे जाएंगे जिनमें से 01 प्रश्न को हल करना होगा। प्रत्येक इकाई से 02 लघु उत्तरीय प्रश्न पूछे जाएंगे। कुल 8 लघु उत्तरीय प्रश्नों में से 5 प्रश्नों को हल करना होगा। सम्पूर्ण पाठ्यक्रम से पूछे गए 15 प्रश्नों में से 10 अति लघुउत्तरीय/वस्तुनिष्ठ प्रश्नों के उत्तर देने होंगे।

अंक विभाजन

प्रश्न 1 –	1X 15	=	15 अंक
प्रश्न 2 –	1X 15	=	15 अंक
प्रश्न 3 –	1X 15	=	15 अंक
प्रश्न 4 –	1X 15	=	15 अंक
प्रश्न 5 – लघु उत्तरीय	5X 2	=	10 अंक
प्रश्न 6 – वस्तुनिष्ठ	10X 1	=	10 अंक
	योग	=	**80 अंक**
आंतरिक मूल्यांकन			**20 अंक**

निर्धारित पुस्तकेंः–

1. हिन्दी भाषा का संक्षिप्त इतिहास – भोलानाथ तिवारी
2. हिन्दी और उसकी विविध बोलियॉ – प्रो. दीपचंद जैन
3. भाषा भूगोल – कैलाशचंद भाटिया हिन्दी समिति उ.प्र. शासन लखनऊ
4. हिन्दी भाषा की रूप संरचना – भोलानाथ तिवारी
5. राष्ट्रभाषा हिन्दी समस्याएँ और समाधान – देवेन्द्रनाथ शर्मा
6. नागरी लिपि और हिन्दी – अनंत चौधरी
7. सामान्य भाषा विज्ञान – डॉ. बाबूराम सक्सेना
8. भाषा विज्ञान – डॉ. भोलानाथ तिवारी

एम.ए.–हिन्दी

चतुर्थ सेमेस्टर, प्रश्न पत्र–सप्तम

मीडिया लेखन एवं अनुवाद

विभिन्न संचार माध्यमों ने आज पूरे विश्व को एक दूसरे के साथ जोड़ दिया है और पूरी दुनिया एक वैश्विक गाँव में तब्दील हो गयी है। दुनिया भर में परस्पर होने वाले भाषिक अनुवादों ने भाषाई दीवारों को तोड़ दिया है। कला, साहित्य, ज्ञान और विज्ञान की दृष्टि से दुनिया आज बहुत करीब आ गयी है। इसे संभव बनाने वाले जनसंचार माध्यमों और अनुवादों के सैद्धांतिक एवं व्यावहारिक ज्ञान से विद्यार्थियों को समृद्ध करने के उद्देश्य से इस प्रश्न का निर्माण किया गया है।

इस पाठ्यक्रम का उद्देश्य है :–

(1) विद्यार्थियों को जनसंचार के विविध माध्यमों एवं मीडिया लेखन की जानकारी प्रदान करना।

(2) दृश्य एवं श्रव्य माध्यम (फिल्म, टेलीविजन एवं रेडियो) की विविध विधाओं की भाषिक प्रकृति से अवगत कराना।

(3) अनुवाद का सैद्धांतिक और व्यावहारिक ज्ञान प्रदान करना।

(4) व्यावहारिक अनुवाद के विविध क्षेत्रों–कार्यालयीन, प्रशासनिक, साहित्यिक अनुवाद–की विशिष्टता और प्रविधि से अवगत कराना।

पाठ्यक्रम अधिगम परिणाम :–

(1) विद्यार्थियों को आधुनिक संचार के विविध माध्यमों का ज्ञान प्राप्त होगा।

(2) वे दृश्य एवं श्रव्य माध्यमों की भाषा की प्रकृति से अवगत होंगे।

(3) उन्हें अनुवाद का सैद्धांतिक और व्यावहारिक ज्ञान प्राप्त होगा।

(4) वे कार्यालयीन, प्रशासनिक, व्यावसायिक और साहित्यिक अनुवाद की दिशा में कार्य करने में सक्षम होंगे।

एम.ए. – (हिन्दी)
चतुर्थ सेमेस्टर
प्रश्न पत्र – सप्तम
मीडिया–लेखन एवं अनुवाद

पूर्णांक : 80

पाठ्य विषयः–

इकाई–1 मीडिया लेखन जनसंचार : प्रौद्योगिक एवं चुनौतियॉ, विभिन्न जनसंचार–माध्यमों का स्वरूप– मुद्रण, श्रवण, दृश्य–श्रव्य, इंटरनेट, श्रवण–माध्यम (रेडियो), मौखिक भाषा की प्रकृति । समाचार लेखन एवं वाचन, रेडियो नाटक, उद्घोषणा लेखन, विज्ञापन–लेखन, फीचर तथा रिपोर्ताज ।

इकाई–2 दृश्य–श्रव्य माध्यम (फिल्म, टेलीविजन एवं रेडियो), दृश्य–माध्यमों में भाषा की प्रकृति, दृश्य एवं श्रव्य सामग्री का सामंजस्य, पार्श्व वाचन (वॉयस ओवर) पटकथा–लेखन, टेली–ड्रामा, संवाद–लेखन, साहित्य की विधाओं का दृश्य माध्यमों में रूपान्तरण, विज्ञापन की भाषा ।

इकाई–3 अनुवाद – सिद्धांत एवं व्यवहार अनुवाद का स्वरूप, क्षेत्र, प्रक्रिया एवं प्रविधि । हिन्दी की प्रयोजनीयता में अनुवाद की भूमिका । कार्यालयीन हिन्दी और अनुवाद, जनसंचार माध्यमों का अनुवाद, विज्ञापन में अनुवाद, वैचारिक साहित्य का अनुवाद, वाणिज्यिक अनुवाद, वैज्ञानिक तकनीकी तथा प्रौद्योगिकी क्षेत्रों में अनुवाद, विधि साहित्य की हिन्दी और अनुवाद।

इकाई–4 व्यावहारिक अनुवाद अभ्यास, कार्यालयीन अनुवाद, कार्यालयीन एवं प्रशासनिक शब्दावली, प्रशासनिक प्रयुक्तियॉ, पदनाम, विभाग, आदि पत्रों के अनुवाद, पदनामों–अनुभागों–दस्तावेजों–प्रतिवेदनों के अनुवाद, साहित्यिक अनुवाद के सिद्धांत एवं व्यवहार–कविता, कहानी, नाटक, सारानुवाद, दुभाषिया–प्रविधि ।

टीप :– प्रत्येक इकाई से 02 दीर्घ उत्तरीय प्रश्न पूछे जाएंगे जिनमें से 01 प्रश्न को हल करना होगा। प्रत्येक इकाई से 02 लघु उत्तरीय प्रश्न पूछे जाएंगे। कुल 8 लघु उत्तरीय प्रश्नों में से 5 प्रश्नों को हल करना होगा। सम्पूर्ण पाठ्यक्रम से पूछे गए 15 प्रश्नों में से 10 अति लघुउत्तरीय/वस्तुनिष्ठ प्रश्नों के उत्तर देने होंगे।

अंक विभाजन

प्रश्न 1 –	1X 15	=	15 अंक
प्रश्न 2 –	1X 15	=	15 अंक
प्रश्न 3 –	1X 15	=	15 अंक
प्रश्न 4 –	1X 15	=	15 अंक
प्रश्न 5 –	5X 2	=	10 अंक (पांच लघु उत्तरीय)
प्रश्न 6 –	10X 1	=	10 (दस वस्तुनिष्ठ)
	योग	=	80 अंक
	आंतरिक मूल्यांकन		20 अंक

निर्धारित पुस्तकें:–

1. जनसंचार माध्यमों में हिन्दी – डॉ. चन्द्रकुमार (क्लासिकल पब्लिक कंपनी)
2. जनमाध्यम एवं पत्रकारिता – प्रवीण दीक्षित (सहयोगी साहित्य संस्थान)
3. पत्रकारिता का इतिहास एवं जनसंचार माध्यम– डॉ. संजीव भागवन्त (उ.प्र. जयपुर)
4. पत्रकारिता के विविध आयाम – वेदप्रताप वैदिक
5. दूरदर्शन : हिन्दी के प्रयोनमूलक विविध प्रयोग : डॉ. कृष्णकुमार रत्तू (मीनाक्षी प्रकाशन, जयपुर)
6. जनमाध्यम एवं पत्रकारिता – प्रवीण दीक्षित (सहयोगी साहित्य संस्थान)
7. अनुवाद के सिद्धांत – सुरेश कुमार
8. अनुवाद सिद्धांत की रूपरेखा – सुरेश कुमार
9. अनुवाद – बोध – डॉ. गार्गी गुप्त (भारतीय अनुवाद परिषद् दिल्ली)

एम.ए.–हिन्दी

चतुर्थ सेमेस्टर, प्रश्न पत्र–अष्टम

जनपदीय भाषा और साहित्य (छत्तीसगढ़ी)

भारत विविध तरह की भाषाओं और संस्कृतियों का संगम स्थल है। हमारे लिए वैश्विक, राष्ट्रीय भाषाओं के साथ अपनी मातृभाषा और जनपदीय भाषा का ज्ञान भी आवश्यक है। इस पाठ्यक्रम का उद्देश्य छत्तीसगढ़ जनपद की भाषा छत्तीसगढ़ी की भाषिक विशेषताओं एवं उसके साहित्य से विद्यार्थियों को अवगत कराना है।

इस पाठ्यक्रम का उद्देश्य है :–

(1) विद्यार्थियों को छत्तीसगढ़ी भाषा के स्वरूप एवं व्यावहारिक विशेषताओं से परिचय करना।

(2) छत्तीसगढ़ी साहित्य के इतिहास एवं युगीन प्रवृत्तियों की जानकारी प्रदान करना।

(3) छत्तीसगढ़ी कविता की महान विभूतियों एवं उनकी कविताओं से परिचय कराना।

(4) छत्तीसगढ़ी नाटक, उपन्यास एवं अन्य विधाओं की जानकारी प्रदान करना।

पाठ्यक्रम अधिगम परिणाम :–

(1) विद्यार्थी अपनी मातृभाषा एवं जनपदीय भाषा छत्तीसगढ़ी के स्वरूप एवं व्यावहारिक विशेषताओं से परिचित होंगे।

(2) उन्हें अपनी भाषा के साहित्य के इतिहास और विविध युगीन प्रवृत्तियों का ज्ञान प्राप्त होगा।

(3) छत्तीसगढ़ी कविता की महान विभूतियों और उनकी कविताओं से परिचित होंगे।

(4) छत्तीसगढ़ी भाषा में रचित नाटक, उपन्यास एवं अन्य विधाओं से परिचय प्राप्त कर सकेंगे।

एम.ए. – (हिन्दी)
चतुर्थ सेमेस्टर प्रश्न पत्र – अष्टम
जनपदीय भाषा और साहित्य (छत्तीसगढ़ी)

पूर्णांक : 80

पाठ्य विषय :–

इकाई–1 छत्तीसगढ़ी भाषा–भौगोलिक सीमा, नामकरण, भाषिक स्वरूप एवं व्याकरणिक विशेषताएँ।

इकाई–2 छत्तीसगढ़ी साहित्य की युग प्रवृत्तियॉ एवं इतिहास ।

इकाई–3 छत्तीसगढ़ी कविता एवं कवि –

(1) सुंदरलालशर्मा
(2) मुकुटधर पाण्डेय
(3) हरि ठाकुर
(4) डॉ. नरेन्द्र देव वर्मा

इकाई–4 छत्तीसगढ़ी नाटक एवं उपन्यास

1. करमछड़हा (नाटक) – डॉ. खूबचंद बघेल
2. आंवा (उपन्यास) – परदेशीराम वर्मा
3. बहू हाथ के पानी (उपन्यास) – दुर्गा प्रसाद पारकर

द्रुतपाठ हेतु निम्नलिखित रचनाकार का अध्ययन (पांच लघु उत्तरीय प्रश्न पूछे जायेंगे)

(1) लखन लाल गुप्त (2) लक्ष्मण मस्तुरिहा
(3) केयूर भूषण (4) मुकुन्द कौशल
(5) लोचन प्रसाद पाण्डेय (6) लाला जगदलपुरी
(7) पवन दीवान (8) कोदूराम दलित

अंक विभाजन

प्रश्न 1 –	1X 15	=	15 अंक
प्रश्न 2 –	1X 15	=	15 अंक
प्रश्न 3 –	1X 15	=	15 अंक
प्रश्न 4 –	1X 15	=	15 अंक
प्रश्न 5 –	5X2	=	10 अंक
प्रश्न 6 –	10X1	=	10 अंक
	योग	=	**80 अंक**
	आंतरिक मूल्यांकन		**20 अंक**

निर्धारित पुस्तकें:–

1. छत्तीसगढ़ी भाषा का उद्‌विकास – डॉ. नरेन्द्र देव वर्मा
2. छत्तीसगढ़ी, हलबी, भतरी भाषाओं का भाषा वैज्ञानिक अध्ययन – भालचंद्र राव तैलंग
3. छत्तीसगढ़ी परिचय– डॉ. बलदेव मिश्र
4. छत्तीसगढ़ी लोकसाहित्य का अध्ययन – दयाशंकर शुक्ल
5. छत्तीसगढ़ी लोकजीवन और लोकसाहित्य का अध्ययन – डॉ. शकुन्तला वर्मा
6. छत्तीसगढ़ी भाषा का शास्त्रीय अध्ययन– डॉ. शंकर शेष
7. प्राचीन छत्तीसगढ़ी बोली – प्यारेलाल गुप्त
8. छत्तीसगढ़ी लोक साहित्य और भाषा – डॉ. बिहारीलाल साहू
9. छत्तीसगढ़ी भाषा और साहित्य – डॉ. सत्यभामा आडिल
10. छत्तीसगढ़ के साहित्यकार – देवीप्रसाद वर्मा
11. मानक छत्तीसगढ़ी व्याकरण – चंद्रकुमार चंद्राकर

हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

(पूर्व नाम- दुर्ग विश्वविद्यालय, दुर्ग)
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क्र. 477 /अका./2023 दुर्ग, दिनांक : 23/06/2023

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषयः— स्नातक स्तर के नवीन पाठ्यक्रम के भाग–एक को सत्र 2023–24 से विश्वविद्यालय में लागू करने विषयक।
संदर्भः— अपर संचालक, उच्च शिक्षा संचालनालय, नवा रायपुर, अटल नगर का पत्र क्र. 3985/237/आउशि/2023, दिनांक 13.06.2023।

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विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग–एक के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2023–24 से लागू किये जाते हैंः–

1.	बी.ए.	–	आधार पाठ्यक्रम–हिन्दी भाषा, अंग्रेजी भाषा, हिन्दी साहित्य, अंग्रेजी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, संस्कृत, मानवविज्ञान, भूगोल, मनोविज्ञान, सांख्यिकी, कम्प्यूटर।
2.	बी.एस–सी.	–	आधार पाठ्यक्रम–हिन्दी भाषा, अंग्रेजी भाषा, जीव विज्ञान, मानवविज्ञान, गणित, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, भौतिकी, प्राणीशास्त्र, भूविज्ञान, आई.टी., सूक्ष्मजीवविज्ञान, वनस्पतिशास्त्र, इलेक्ट्रॉनिक्स, रसायन शास्त्र, सांख्यिकी, भूगोल।
3.	बी.एस–सी. (गृह विज्ञान)	–	आधार पाठ्यक्रम – हिन्दी भाषा, अंग्रेजी भाषा एवं गृह विज्ञान।
4.	बी.कॉम.	–	आधार पाठ्यक्रम – हिन्दी भाषा, अंग्रेजी भाषा एवं वाणिज्य।
5.	विधि	–	एल.एल.बी., बी.ए.एल.एल.बी
6.	प्रबंध	–	बी.बी.ए.
7.	कम्प्यूटर	–	बी.सी.ए.
8.	शिक्षा	–	बी.एड.
9.	लाईब्रेरी साईंस	–	बी. लिब.

उपरोक्त विषयों को शिक्षा सत्र 2023–24 से संशोधित रूप में स्नातक स्तर भाग–एक के लिए लागू किया जाता है स्नातक स्तर भाग दो एवं तीन के पाठ्यक्रम यथावत रहेंगे।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र–छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :– परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाईट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार।

कुलसचिव

क्र. 478 /अका./2023 दुर्ग, दिनांक 23/06/2023

प्रतिलिपिः–

1. अपर संचालक, उच्च शिक्षा संचालनालय, नवा रायपुर, अटल नगर का पत्र क्र. 3985/237/आउशि/2023, दिनांक 13.06.2023 के परिपेक्ष्य में सूचनार्थ।
2. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।

सहा. कुलसचिव (अका.)

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REVISED ORDINANCENO.11
(As per State U.G.C. Scheme)
BACHELOR OF ARTS

1. The three yearcourse has been broken up in to three Parts.
Part-I Examination: at the end ofthe first year.
Part-II Examination: at the end of the second year and
Part-III Examination:at the end of the third year.

2. A candidate who after passing (10+2) or intermediate exam-nation of C.G. Board of Secondary Education, C.G. oranyother examination recognized by the Universityor C.G. Board of Secondary Education asequivalent there to, has attended regular course of studyinan affiliated college orinthe Teaching Department of the University for one academic year shall be eligible for appearing atthe B.A. Part-I examination.

3. A candidate who after passing B.A. Part-I examination of the University or anyother examination recognized by the University as equivalent there to has attended regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.A. Part II Examination.

4. A candidate who after passing B.A.PartII examination of the University has completed a regular course of study for one academic year in anaffiliated college orin theTeaching Department of the University shall be eligible for appearing at the B.A. Part-III examination.

5. Besides regular students, subject to their compliance with this ordinance, ex-students andnon-college at ecan did ates shall beeligible for admission other examination as per provisions of Ordinance N. 6 relating to Examinations (General). Provided that non- college ate can did at esshallbepermitted to offeronly suchsubjects/paper sasare taught to the regular students at any of the University Teaching Department orCollege.

6. Every candidate for the Bachelor of arts examination shall be examined in:

A Foundation Course:
(i) Group A -HindiLanguage
(ii) Group B - EnglishLanguage

B Three course subjects:One subject from any three group out ofthe followings six groups:
1 Sociology / Ancient Indian History/Anthropology
2 Political Science/Home Science / Drawing &Painting / VocationalCourse.
3 Hindi Literature/ Sanskrit Literature/Urdu Literature/Mathematics.
4 Economics/Music/DefenseStudies/Linguistics/ u``R;
5 Philosophy/Psychology/ Geography/ Education/Management.
6 History/English Literature/Statistics.
7 Practicals (If Nece ssary) for each coresubject.

7 Any candidate who has passed the B.A. examination of the University shall be allowed to present himself for examination in any of additional subject spres cribbed for the B.A. exami-nation and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.A. PartI examination in the subject which he proposes to offer and then the B.A.PartII and PartIII examinationin the same subject. Successfull candidate will be given acertificate to that effect.

8 Inorder to pass atany part of the three year degree course examination, an examinee must obtain not less than33% of the total makrs in each subject/group of subjects .In subject /group of subjects, where both theory and practical examination are provided, an examinee must pass in both the ory and practical part so the examination separately.

9 Candidate will have to pass separately at the Part-I, Part II and part-III examination. No division shall be assigned on the result of the Part-I and Part-II examination. In deter mining the divison of the Final examination, total marks obtained by the examinees, in their Part-I,Part-II and Part-III examination in the aggregate shall be taken in to account. Candidate will not be allowed to change subjects after passing Part IExamination.

Provided in case of candidate who has passed the examination through the supplementary examination having fail edin one subject only the total aggregate marks being carried over for determining the division shall in clued the actual mark so btained in the subject in which he appeared at the supplementary examination.

10 Successful exminee sat the Part-III examination obtaining 60% or more marks shall be placed in the First division, those obtain in gless than 60% but not less than 45% marks in the Second division and other successful examinees in the third division.

SCHEME OF EXAMINATION

	Subject	Paper	Max. Marks	Min. Marks
	i) Environmental Studies		75	33
	Fild Work		25	
A.	Foundation Course			
	i) Hindi Language - I		75	26
	ii) English Language - II		75	26
B.	Three Core Subject :			
	1. Hindi Literature	I	75	50
		II	75	
	2. Sanskrit Literature	I	75	
		II	75	50
	3. English Literature	I	75	
		II	75	50
	4. Philosophy	I	75	
		II	75	50
	5. Economics	I	75	
		II	75	50
	6. Political Science	I	75	
		II	75	50
	7. History	I	75	50
		II	75	
	8. Ancient Indian History	I	75	50
	Culture & Archaeology	**II**	75	
	9. Sociology	I	75	50
		II	75	
	10. Geography	I	50	33
		II	50	
		Practical	50	17
	11. Mathematics	I	50	
		II	50	50
		III	50	
	12. Statistics	I	50	33
		II	50	
		Practical	50	17

	Subject	Paper	Max. Marks	Min. Marks
13.	Anthropology	I	50	33
		II	50	
		Practical	50	17
14.	Linguistics	I	75	50
		II	75	
15.	Music	I	50	33
		II	50	
		Practical	50	17
16.	Home Science	I	50	33
		II	50	
		Practical	50	17
17.	Education	I	75	50
		II	75	
18.	Psychology	I	50	33
		II	50	
		Practical	50	17
19.	Management	I	75	50
		II	75	
20.	Defence Studies	I	50	
		II	50	33
		Practical	50	17
21.	Urdu	I	75	50
		II	75	
22.	Dance	I	50	33
		II	50	
		Practical	50	17

USE OF CALCULATORS

The Students of Degree/P.G. Classes will be permitted to use of Calculators in the examination hall from annual 1986 examination on the following conditions as per decision of the standing committee of the Academic Council at its meeting held on 31-1-1986-

1. Student will bring their own Calculators.

2. Calculators will not be provided either by the university or examination centres.

3. Calculators with, memory and following variables be permitted +, -, x, , square, reciprocal, expotentials log, square root, trignometric functions, wize, sine, cosine, tangent etc. factiorial summation, xy, yx and in the light of objective approval of merits and demerits of the viva only will be allowed.

Part - I

SYLLABUS FORENVIRONMENTAL STUDIES AND HUMAN RIGHTS

(Papercode-0828)

MM. 75

इन्वारमेंटल साईंसे के पाठ्यक्रम को स्नातक स्तर भाग–एक की कक्षाओ ंमें विश्वविद्यालय अनुदान आयोग के निर्देशानुसार अनिवार्य रूप से शिक्षा सत्र 2003–2004 (परीक्षा 2004) से प्रभावशील किया गया है। स्वशासी महाविद्यालयों द्वारा भी अनिवार्य रूप से अंगीकृत किया जाएगा।

भाग 1, 2 एवं 3 में से किसी भी वर्ष में पर्यावरण प्रश्न–पत्र उत्तीर्ण करना अनिवार्य है। तभी उपाधि प्रदाय योग्य होगी।

पाठ्यक्रम 100 अंकों का होगा, जिसमें से 75 अंक सैद्धांतिक प्रश्नों पर होंगे एवं 25 अंकक्षेत्रीय कार्य (Field Work) पर्यावरण पर होंगे।

सैद्धांतिक प्रश्नों पर अंक – 75 (सभी प्रश्न इकाई आधार पर रहेंगे जिसमें विकल्प रहेगा)

(अ) लघु प्रश्नोंत्तर – 25 अंक
(ब) निबंधात्मक – 50 अंक

Field Work– 25 अंकों का मूल्यांकन आंतरिक मूल्यांकन पद्धति से कर विश्वविद्यालय को प्रेषित किया जावेगा। अभिलेखों की प्रायोगिक उत्तर पुस्तिकाओं के समान संबंधित महाविद्यालयों द्वारा सुरक्षित रखेंगे।

उपरोक्त पाठ्यक्रम से संबंधित परीक्षा का आयोजन वार्षिक परीक्षा के साथ किया जाएगा।

पर्यावरण विज्ञान विषय अनिवार्य विषय है, जिसमें अनुत्तीर्ण होने पर स्नातक स्तर भाग–एक के छात्र/छात्राओं को एक अन्य विषय के साथ पूरक की पात्रता होगी। पर्यावरण विज्ञान के

सैद्धांतिक एवं फील्ड वर्क के संयुक्त रूप से 33ः (तैंतीस प्रतिशत) अंक उत्तीर्ण होने के लिए अनिवार्य होंगे।

स्नातक स्तर भाग–एक के समस्त नियमित/भूतपूर्व/अमहाविद्यालयीन छात्र/छात्राओं को अपना फील्ड वर्क सैद्धांतिक परीक्षा की समाप्ति के पश्चात् 10 (दस) दिनों के भीतर संबंधित महाविद्यालय/परीक्षा केन्द्र में जमा करेंगे एवं महाविद्यालय के प्राचार्य/केन्द्र अधिक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे।

UNIT-I THE MULTI DISCIPLINARY NATUREOF ENVIRONMENTALSTUDIES

Definition, Scope and
Importance Natural Resources:
Renewable and Nonrenewable Resources

(a) Forest resources: Use and over-exploitation, deforestation, Timber extraction,mining, dams and their effects on forests and tribal people and relevant forestAct.

(b) Water resources: Use and over-utilization of surface and ground water, floodsdrought, conflicts over water, dam′s benefits and problems and relevantAct.

(c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineralresources.

(d) food resources: World food problems, changes caused by agriculture andovergrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging ,salinity.

(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energysources.

(f) Land resources: Land as a resource, land degradation, man induced landslides soil erosion and desertification.

(12 Lecture)

UNIT-II ECOSYSTEM

(a) Concept, Structure and Function of andecosystem

- Producers, consumers and decomposers.
- Energy flow in theecosystem
- Ecologicalsuccession
- Food chains, food webs and ecologicalpyramids.
- Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem.

(b) Biodiversity and itsConservation

- Introduction - Definition: genetic. species and ecosystemdiversity
- Bio-geographical classification ofIndia.
- Value of biodiversity: Consumptive use. productive use, social ethics, aesthetic and optionvalues.
- Biodiversity at global, National and locallevels.
- India as mega-diversitynation.
- Hot spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild lifeconflict.
- Endangered and endemic species ofIndia.
- Conservation of biodiversity: In situ and Ex-situ conservation ofbiodiversity.

(12Lecture)

UNIT- III

(a) Causes, effect and control measuresof

- Air water, soil, marine, noise, nuclear pollution and Humanpopulation.
- Solid waste management: Causes, effects and control measures of urban and industrialwastes.
- Role of an individual in prevention ofpollution.
- Disaster Management: floods, earthquake, cyclone andlandslides.

(12Lecture)

(b) EnvironmentalManagement

- From Unsustainable to sustainabledevelopment.
- Urban problems related toenergy.
- Water conservation, rain water harvesting, watershedmanagement.
- Resettlement and rehabilitation of people, its problems andconcerns.
- Environmental ethics: Issues and possiblesolutions.
- Climate change, global warming, acid rain, ozone layer depletion,nuclear accidents andholocaust.
- Wastelandreclamation
- Environment protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and HumanHealth.

UNIT- IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights.
Protection of Human Rights under the UNO Charter, protection of Human Rights under the Universal Declaration of Human Rights, 1948.
Convention on the Elimination of all forms of Discrimination against women.
Convention on the Rights of the Child, 1989.

UNIT-V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution of India, Directive Principles of State policy under the Constitution of India, Enforcement of Human Rights in India.

Protection of Human Rights under the Human Rights Act, 1993- National Human Rights Commission, State Human Rights Commission and Human Rights court in India.Fundamental Duties under the Constitution of India.

Reference/ Books Recommended

1. SK Kapoor- Human rights under International Law and IndianLaw.
2. HO Agrawal- Internation Law and HumanRights
3. एस.के. कपूर –मानव अधिकार
4. जे.एन. पान्डेय – भारत का संविधान
5. एम.डी. चतुर्वेदी – भारत का संविधान
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22. Rao M.N. & Datta, A.K. 1987, Waste water treatment. Oxford & IBH pub.co.pvt.Ltd 345p
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24. Survey of the Environment, TheHidu(M)
25. Townsend C. Harper J. And Michael Begon, Essentials of Ecology, Blackwell Science(TB)
26. Trivedi R.K.Handbook of Environment Laws, Rules, Guidlines, Compliancesand Standards, Vol land II, EnvironmentMedia(R)
27. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science publication (TB)
28. Wanger K.D.1998, Environmental Management. W.B. Saunders Co. Philadelphia,USA 499p

Part - I
SYLLABUS FOR ENVIRONMENTAL STUDIES AND HUMAN RIGHTS
(Paper code-0828)

MM. 75

इन्वारमेंटल साईंसेस के पाठ्यक्रम को स्नातक स्तर भाग–एक की कक्षाओं में विश्वविद्यालय अनुदान आयोग के निर्देशानुसार अनिवार्य रूप से शिक्षा सत्र 2003–2004 (परीक्षा 2004) से प्रभावशील किया गया है। स्वशासी महाविद्यालयों द्वारा भी अनिवार्य रूप से अंगीकृत किया जाएगा।

भाग 1, 2 एवं 3 में से किसी भी वर्ष में पर्यावरण प्रश्न–पत्र उत्तीर्ण करना अनिवार्य है। तभी उपाधि प्रदाय योग्य होगी।

पाठ्यक्रम 100 अंकों का होगा, जिसमें से 75 अंक सैद्धांतिक प्रश्नों पर होंगे एवं 25 अंक क्षेत्रीय कार्य (Field Work) पर्यावरण पर होंगे।

सैद्धांतिक प्रश्नों पर अंक – 75 (सभी प्रश्न इकाई आधार पर रहेंगे जिसमें विकल्प रहेगा)

(अ) लघु प्रश्नोंत्तर – 25 अंक
(ब) निबंधात्मक – 50 अंक

Field Work – 25 अंकों का मूल्यांकन आंतरिक मूल्यांकन पद्धति से कर विश्वविद्यालय को प्रेषित किया जावेगा। अभिलेखों की प्रायोगिक उत्तर पुस्तिकाओं के समान संबंधित महाविद्यालयों द्वारा सुरक्षित रखेंगे।

उपरोक्त पाठ्यक्रम से संबंधित परीक्षा का आयोजन वार्षिक परीक्षा के साथ किया जाएगा।

पर्यावरण विज्ञान विषय अनिवार्य विषय है, जिसमें अनुत्तीर्ण होने पर स्नातक स्तर भाग–एक के छात्र/छात्राओं को एक अन्य विषय के साथ पूरक की पात्रता होगी। पर्यावरण विज्ञान के सैद्धांतिक एवं फील्ड वर्क के संयुक्त रूप से 33ः (तैंतीस प्रतिशत) अंक उत्तीर्ण होने के लिए अनिवार्य होंगे।

स्नातक स्तर भाग–एक के समस्त नियमित/भूतपूर्व/अमहाविद्यालयीन छात्र/छात्राओं को अपना फील्ड वर्क सैद्धांतिक परीक्षा की समाप्ति के पश्चात् 10 (दस) दिनों के भीतर संबंधित महाविद्यालय/परीक्षा केन्द्र में जमा करेंगे एवं महाविद्यालय के प्राचार्य/केन्द्र अधिक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे।

UNIT-I THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, Scope and

Importance Natural Resources:

Renewable and Nonrenewable Resources

(a) Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forests and tribal people and relevant forest Act.

(b) Water resources: Use and over-utilization of surface and ground water, floods drought, conflicts over water, dam′s benefits and problems and relevant Act.

(c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.

(d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.

(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.

(f) Land resources: Land as a resource, land degradation, man induced landslides soil erosion and desertification.

(12 Lecture)

UNIT-II ECOSYSTEM

(a) Concept, Structure and Function of and ecosystem

- Producers, consumers and decomposers.
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem.

(b) Biodiversity and its Conservation

- Introduction - Definition: genetic. species and ecosystem diversity
- Bio-geographical classification of India.
- Value of biodiversity: Consumptive use. Productive use, social ethics, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as mega-diversity nation.

- Hot spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict.
- Endangered and endemic species of India.
- Conservation of biodiversity: In situ and Ex-situ conservation of biodiversity.

(12 Lecture)

UNIT- III

(a) Causes, effect and control measures of

- Air water, soil, marine, noise, nuclear pollution and Human population.
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Disaster Management: floods, earthquake, cyclone and landslides.

(12 Lecture)

(b) Environmental Management

- From Unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people, its problems and concerns.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.
- Wasteland reclamation
- Environment protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and Human Health.

UNIT- IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights. Protection of Human Rights under the UNO Charter, protection of Human Rights under the Universal Declaration of Human Rights, 1948. Convention on the Elimination of all forms of Discrimination against women. Convention on the Rights of the Child, 1989.

UNIT- V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution of India, Directive Principles of State policy under the Constitution of India, Enforcement of Human Rights in India. Protection of Human Rights under the Human Rights Act, 1993- National Human Rights Commission, State Human Rights Commission and Human Rights court in India. Fundamental Duties under the Constitution of India.

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बी.ए./ बी.एस-सी./ बी.कॉम./ बी.एच.एस.सी. भाग -एक

(आधार पाठ्यक्रम)

प्रथम प्रश्नपत्र

हिंदी भाषा

कोड....

पूर्णांक 75

क्रेडिट 05

पाठ्यक्रमका उद्देश्य:-

1.हिंदी भाषाके प्रयोजनात्मक स्वरूप का सामान्य ज्ञान प्रदान करना।
2.कंप्यूटर में हिंदी भाषा के प्रयोग की आवश्यकता के अनुरूप कंप्यूटर की कार्य प्रणाली की आरंभिक जानकारी से अवगत होने के लिए प्रेरित करना।
3.हिंदी व्याकरण की बुनियादी ज्ञान संप्रेषण कौशल तथा भाषायी दक्षता से अवगत कराना।
4.साहित्य और समाज को समझने की दिशा में रुझान उत्पन्न करना।

पाठ्य विषय:-

इकाई 1. (क) पल्लवन, पत्राचार, अनुवाद (ख) एक टोकरी भर मिट्टी : माधवराव सप्रे बड़े भाई साहब : प्रेमचंद	अंक 15 18 कालखंड
इकाई 2. (क) संक्षेपण, हिंदी में संक्षिप्तिकरण, हिंदी-अपठित गद्यांश, पारिभाषिक शब्दावली, हिंदी में पदनाम, मुहावरे एवंलोकोक्तियाँ (ख) जागो फिर एक बार: सूर्यकांत त्रिपाठी 'निराला' जन्मदिन ('मिट्टी से कहूँगाधन्यवाद' संग्रह से):एकांत श्रीवास्तव	अंक 15 18 कालखंड
इकाई 3. (क) शब्द-शुद्धि, वाक्य-शुद्धि, शब्द-ज्ञान- पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी-शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द (ख) भोलाराम का जीव : हरिशंकर परसाई जीप पर सवार इल्लियां: शरद जोशी	अंक 15 18 कालखंड
इकाई 4.(क) मानक भाषा का अर्थ, मानक हिंदी भाषाका अर्थ, स्वरूप,	अंक 15

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विशेषताएँ, मानक, उपमानक, अमानक-भाषा (ख)शिकागो से स्वामी विवेकानंद का पत्र सत्य और अहिंसा : महात्मा गांधी	18 कालखंड
इकाई 5. (क) देवनागरी लिपि- नामकरण, स्वरूप, विशेषताएँ, कंप्यूटर का सामान्य परिचय, कंप्यूटर में हिंदी का अनुप्रयोग। (ख)कछुआ-धरम : चन्द्रधर शर्मा 'गुलेरी' छत्तीसगढ़ का वैभव: हीरालाल शुक्ल	अंक 15 18 कालखंड

मूल्यांकन योजना:-

प्रत्येक इकाई से एक-एक प्रश्न पूछे जाएंगे। एक प्रश्न के 15 अंक होंगे। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमश:08 एवं 07 होंगे। प्रश्नपत्र का पूर्णांक75 निर्धारित है।

प्रश्नपत्रकेपूर्णांककादसप्रतिशतअंकआंतरिकमूल्यांकनकेलिएनिर्धारितहै।

पाठ्यक्रम अधिगम परिणाम:-

इस पाठ्यक्रम को पूर्ण करने के पश्चात विद्यार्थी:-

1.हिंदी प्रयोजनात्मक तथा कार्यशील भाषा के प्रति सजग होंगे।

2.भाषा संबंधी संभावित अशुद्धियों एवं उनके परिष्कारसे परिचित होंगे तथा मानक भाषा का व्यवहार करने में सक्षम होंगे।

3.विद्यार्थियों के शब्द भंडार में वृद्धि होगी।

4.हिंदी साहित्य के पठन-पाठन के प्रति रुचि जागृत होगी एवं सामाजिक महत्व के विविध आयामों को समझने की दृष्टि विकसित होगी।

पाठ्यक्रम निर्माण का औचित्य:-

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BA/B.Sc./B.Com/B.Sc. Home.Sc. (Part-I)
Foundation Course Paper-II English Language

Max. Marks:75
Total credits: 05

Qualifying Marks:26

Paper-II	Mark's	Period's	Credit
Unit-I **Flamingo : A Textbook for college students** **Publication : Macmillan Publishers**	3x5=15	18	01
Unit -II • Writing Skill • Describing a place or a person. • Writing a Biographical Sketch • Narrating an event or experience	1x10=10	18	01
Unit -III Reading Comprehension • (a) Unseen Passage (Normal) • (b) Vocabulary (Text-based)	1x5=05 1xl0=10	18	01
Unit -IV Letter Writing (a) Formal Letters (Business Letters/ Application/Press/ Official Letters) (b) Informal Letters (Relatives and friends)	1x5=5 1x5=5	09	0.5
Unit-V Grammar • Articles • Gerunds /Participles • Subject Verb Agreement • Use of Conjunctions • Tenses • Relatives • Possessives & self forms • Grammatical items given in Textbook 'Flaminso'	1x25=25	27	1.5
Total	75	90	05
Recommended Books- 1. Essential English Grammar, 2nd Edition by Raymond Murphy, Cambridge Publication 2. English Grammar in use 5th edition by Raymond Murphy, Cambridge Publication. 3. Advanced English Grammar by Martine Hewings Cambridge University Press.			

11/07/2023
(P.C. Choudhury)

एक वर्षीय प्रमाणपत्र पाठ्यक्रम
(सत्र–2022–23)

बी.ए. भाग–1
(हिंदी साहित्य) प्रथम प्रश्नपत्र
प्राचीन हिंदी काव्य

पूर्णांकः 75
क्रेडिट – 5, 90 कालखण्ड

उद्देश्य एवं प्रस्तावना : प्राचीन से यहां तात्पर्य है– आधुनिक काल से पूर्व का काल। सही अर्थ में हिदी भाषा और साहित्य का विकास आदिकाल से शुरू होता है। इसमें धार्मिक तथा ऐतिहासिक दो प्रकार का साहित्य मिलता है, जो प्रबंध, मुक्तक, रासो, फागु, चरित, सुभाषित आदि विविध काव्यरूपों में अभिव्यंजित है। मध्यकालीन साहित्य की पृष्ठभूमि के रूप में इसे प्रतिष्ठापित किया जाता है। मध्यकालीन काव्य में भक्तिकाव्य, जहां लोक जागरण को स्वर देने वाला है वहीं रीति काल अपने लौकिक, श्रृंगारिक, परिदृश्य में तत्कालीन सामाजिक, सांस्कृतिक, राजनीतिक स्थितियों को बेलौस अभिव्यंजित करता है। अतः भाषा संस्कृति, विचार, मानवता, काव्यत्व, काव्यरूपता, लौकिकता–पारलौकिता आदि दृष्टियों से इसका अध्ययन अत्यावश्यक है।

पाठ्य विषय : प्राचीन हिन्दी काव्य की पृष्ठभूमि एवं प्रवृत्तियाँ

1. कबीरदास : (कबीर–कांतिकुमार जैन–प्रारंभिक 50 साखियॉ।)
2. जायसी : (संक्षिप्त पद्मावत– श्यामसुंदर दास, नागमती वियोग वर्णन)
3. सूरदास : (भ्रमरगीत सार–संपादक आचार्य रामचंद्र शुक्ल– प्रारंभिक 25 पद)
4. तुलसीदास : "श्रीरामचरितमानस" के सुंदरकांड से प्रारंभिक 30 दोहे, चौपाई, छंद सहित।
5. घनानन्द : (घनानन्द– संपादक, विश्वनाथ प्रसाद मिश्र– प्रारंभिक 25 छंद)

द्रुतपाठ : इसके अंतर्गत 1. विद्यापति 2.रहीम 3.रसखान 4.गोपाल मिश्र का अध्ययन किया जाएगा, जिनमें से किन्दी दो पर लघु उत्तरीय प्रश्न पूछे जाएंगे।

अंक विभाजन

3 व्याख्याएं	अंक–21
2 आलोचनात्मक प्रश्न	अंक–24
3 लघु उत्तरीय प्रश्न	अंक–15
15 वस्तुनिष्ठ प्रश्न	अंक–15

कुल–75 अंक

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इकाई विभाजन :

इकाई एक – व्याख्या	18 कालखण्ड
इकाई दो– कबीर, जायसी	18 कालखण्ड
इकाई तीन – सूर, तुलसी, घनानंद	18 कालखण्ड
इकाई चार – द्रुत पाठ के कवि– विद्यापति, रहीम, रसखान, गोपाल मिश्र	18 कालखण्ड
इकाई पॉच – वस्तुनिष्ठ प्रश्न (सम्पूर्ण इकाई से)	18 कालखण्ड

पाठ्यक्रम अध्ययन की परिलब्धियॉ (CLO)

1. विद्यार्थियों को हिंदी साहित्य की प्रारंभिक काव्य परंपरा एवं रचना शिल्प से परिचित कराना।
2. प्राचीन हिंदी काव्य के अंतर्गत आदिकाल, भक्तिकाल एवं रीतिकाल के प्रतिनिधि कवियों के साहित्य के प्रति मूलभूत समझ विकसित करना।
3. साहित्य के माध्यम से विद्यार्थियों में प्रेम, सद्भाव एवं जीवन मूल्यों का विकास करना।
4. छत्तीसगढ़ प्रदेश के कवियों एवं उनके साहित्यिक अवदान के प्रति विद्यार्थियों में अभिरूचि जागृत करना।

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बी.ए. भाग–1
(हिंदी साहित्य) द्वितीय प्रश्नपत्र
हिंदी कथा साहित्य

पूर्णांक: 75
क्रेडिट–5, 90 कालखण्ड

उद्देश्य एवं प्रस्तावना : गद्य की प्रमुख विधाओं का द्रुत विकास इनकी लोकप्रियता का प्रमाण प्रस्तुत करता है। इसमें आधुनिक जीवन, अपनी विविध कमियों के साथ यथार्थ रूप में अभिव्यंजित हुआ है। जीवन की अनुभूतियां, संवेदनाओं तथा विविध परिस्थितियों के साक्षात्कार के लिए इनका अध्ययन सर्वथा अपेक्षित है।

पाठ्य विषय : व्याख्या एवं आलोचनात्मक प्रश्नों के लिए एक उपन्यास एवं आठ कहानीकारों की एक–एक प्रतिनिधि कहानी का अध्ययन आवश्यक है।

उपन्यास :

1. गबन – मुंशी प्रेमचंद

कहानी :

1. पूस की रात – मुंशी प्रेमचंद
2. आकाशदीप – जयशंकर प्रसाद
3. परदा – यशपाल
4. लाल पान की बेगम – फणीश्वरनाथ रेणु
5. मलबे का मालिक – मोहन राकेश
6. चीफ की दावत – भीष्म साहनी
7. जली हुई रस्सी – गुलशेर खां शानी
8. नकेली हीरे – मन्नू भंडारी

द्रुतपाठ के लिए निम्नांकित चार कथाकारों का अध्ययन अपेक्षित है, जिनमें से किन्ही दो पर लघु उत्तरीय प्रश्न पूछे जाएंगे।

1. उपेन्द्रनाथ अश्क 2. बालशौरि रेड्डी 3. शिवानी 4. पदुमलाल पुन्नालाल बख्शी

अंक विभाजन

3 व्याख्याएं	अंक – 21
2 आलोचनात्मक प्रश्न	अंक – 24
3 लघु उत्तरीय प्रश्न	अंक – 15
15 वस्तुनिष्ठ प्रश्न	अंक – 15
	कुल – 75 अंक

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इकाई विभाजन :

इकाई एक – व्याख्या 18 कालखण्ड

इकाई दो– गबन (उपन्यास), पूस की रात, आकाशदीप, परदा (कहानियॉ) 18 कालखण्ड

इकाई तीन –लाल पान की बेगम, मलबे का मालिक, चीफ की दावत, जली हुई रस्सी, नकली हीरे 18 कालखण्ड

इकाई चार –(क)द्रुत पाठ के कथाकार– उपेन्द्रनाथ अश्क, बालशौरि रेड्डी, शिवानी, पदुमलाल पुन्नालाल बख्शी

(ख)हिंदी कथा साहित्य का विकास 18 कालखण्ड

इकाई पॉच – वस्तुनिष्ठ प्रश्न/अतिलघुउत्तरीय प्रश्न (सम्पूर्ण पाठ्यक्रम से) 18 कालखण्ड

पाठ्यक्रम अध्ययन की परिलब्धियॉ (CLO)

1. विद्यार्थियों को हिंदी उपन्यास एवं हिन्दी कहानी की विकास यात्रा से परिचित कराना।
2. उपन्यास एवं कहानी विधा की शिल्पगत विशेषताओं से अवगत कराना।
3. मुंशी प्रेमचंद एवं सुप्रसिद्ध कहानीकारों के व्यक्तित्व, कृतित्व एवं साहित्यिक अवदान से विद्यार्थियों को परिचित कराना।
4. छत्तीसगढ़ प्रदेश के साहित्यकारों के रचनात्मक कौशल एवं हिंदी कथा साहित्य की अंतर्वस्तु की समझ विकसित करना।

08/08/2023

B.A. Part - I
English Literature
Paper-I
Literature in English-1550-1750

(i) Unit - 1 of Annotation is compulSory, and passages to be set from Units (II to V) at least one from each unit, 3 to be attempted. 3x5=15

(ii) Multiple choice/objective type questions to be set Unit vii, I5 to be set 10 be attempted. 1x10=10

(iii) From Unit-il to Vi- 8 questions to be set at least one from each unit - 5 to be attempted. 10x5=10

Word Limit for each answer 300 to 400 words.

UNIT-I ANNOTATIONS

UNIT- II POETRY

(a) William Shakespeare - Sonnet No. 1 From Fairest Creatures,
Sonnet No. 55 Not Marble nor the Glided Monuments

(b) John Milton - How Soon Hath Time the subtle of Youth....

(c) John Donne - Death Be not Proud, The Good Morrow

UNI-III POETRY

(a) John Dryden - Portrait of Shadwell.

(b) Alexander Pope - From An Essay on Criticism (True ease in writing ... And the world's victor stood subdu'd by sound!)

UNIT-IV PROSE

(a) Francis Bacon - Of Studies, Of Health, Of Friendship

(b) Joseph Addison – - Sir Roger at Home

(c) Richard Steele - Of the Club.

UNIT-V DRAMA

William Shakespeare - The Tempest

UNIT-VI FICTIOIN

Jonathan Swift - Gulliver's Travels

UNIT- 7 LITERARY TOPICS

(i) Poetic Forms :- Lyric, Sonnet, Ode, Elegy, Ballads, Epic, Objective and Subjective Poetry.

(ii) Dramatic Forms :- Mystery and Miracle Plays, Morality Plays, Tragedy, Comedy, Poetic Drama, Interlude, Melodrama, Farce, Masque.

(iii) Prose Forms :- Objective and Subjective Essays, Novels, Autobiography, Travel Writing.

(iv) Dramatic Devices :- Plot, S oliloquy, Aside, Characterization, Dramatic Irony

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BOOKS RECOMMENDED FOR UNIT VII TN PAPERS I AND II

1. Edward Albeft - A History of English Literature
2. Ifor Evans - A short History of English Literature.
3. Hudson - An Outline History of English Literatur
4 B. Prasad - A Background Study of English Literature.

CREDIT & PERIOD DETAILS

S.No.	Unit	Periods	Credit(Point)
1	2	15	1.0
2	3	11	0.73
3	4	15	1.0
4	5	15	1.0
5	6	10	0.67
6	7	09	0.60
		75	5.00

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B.A. Part I
English Literature
Paper -I (Literature in English :1550-1750)
Course outcome

After completing the Course the students will able to demonstrate:

co 01- a comprehensive knowledge of the literary works in English produced by the British writers this knowledge will include the various literary forms fictional as well as non- fictional employed by the British writers and Historical and LiterarY topics as well.

co 02- a critical understanding of the poets tike shakespeare' Milton and John Donne,JohnDrydenandAlexanderPope,playwrightslikeshakespeare'non fictional writers like Bacon, Addison, and Steele and the novelists like Swift.

co 03- a capacity to compare and contrast the different fiterary qualities of the writers and critically rank them in evaluative terms.

co 04- a critical inclination to read literature as a socio-cultural document'

co 05- a research tendency to go for innovative studies like English Literature in the postcolonial light of the latest research insights.

co 06- a socio- political sense of responsibility to stand up against colonizing human tendencies.

co 07- a visibre riterary- criticar bent towards understanding rife through literature.

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B.A. Part - I
English Literature
Paper -II (Literature in English: 1750-1900)

Note- (i) Unit - 1 of Annotation is compulsory, 6 Passages be set from Units (II to IV) at least one from each unit, 3 to be attempted 3x5=15
(ii) Multiple choice/objective type questions to be set from unit- VII, 25 to be set 10 to be attempted . 1x10=10
(iii)From Unit-II to VI-8 questions to be set at least one from each unit- 5 to be attempted. 10x5=50
Word Limit for each answer 300 to 400 words.

UNIT-I ANNOTATIONS

UNI-II POETRY

(a) William Blake - Tyger, Tyger Burning Bright.
(b) William Wordsworth - Daffodils, Upon Westminster Bridge.
(c) S.T. Coleridge - Frost at Midnight.

UNIT-III POETRY

(a) P.B. Shelley - Ode to the West Wind
(b) John Keats - Ode to Autumn.
(c) Alfred Tennyson - Crossing the Bar.
(d) Robert Browning - Prospice

UNIT-IV PROSE

(a) Charles Lamb - Dream Children: A Reverie
(b) William Hazlitt - On Going a Journey - On Going a Journey

UNIT-V FICTTON

Jane Austen - Pride and Prejudice.

UNIT-VI FICTION

Charles Dickens - A Tale of Two Cities

UNIT-7 LITERARY TOPICS

(1) Simile
(2) Metaphor
(3) Alliteration
(4) Paradox
(5) Metonymy
(6) Oxymoron
(7) Synecdoche
(8) Exaggeration or Hyperbole
(9) Antithesis
(10) Personification
(11) Apostrophe
(12) Onomatopoeia

(13) Dramatic Monologue

(14) Couplet

(15) Blank Verse

BOOKS RECOMMENDED FOR UNIT VII TN PAPERS I AND II

1. Edward Albeft - A History of English Literature
2. Ifor Evans - A short History of English Literature.
3. Hudson - An Outline History of English Literatur
4 B. Prasad - A Background Study of English Literature.

CREDIT & PERIOD DETAILS

S.No.	Unit	Periods	Credit(Point)
1	2	15	1.0
2	3	15	1.0
3	4	15	1.0
4	5	10	0.67
5	6	11	0.73
6	7	09	0.60
		75	5.00

B.A. part I
English Literature
Paper -II (Literature in English : 1750-1900)
Course outcome

After completing the Course the students will able to demonstrate: -

Co 01- a Comprehensive knowledge of the literary works in English produced by British writers this knowledge will include the various literary forms fictional as well as non- fictional employed by the British writers and Historical and Literary topics as well.

Co 02- a critical understanding of the poets like Blake, Wordsworth, Coleridge, Shelley, Keats, Tennyson and Browning and non fictional writers like Lamb and Hazlit and the novelists like Jane Austen and charles Dickens.

Co 03- a capacity to compare and contrast the different literary qualities of the writers with the criticaily rank them in evaluative terms.

Co 04- a critical inclination to read literature as a socio-cultural document.

Co 05- a research tendency to go for innovative studies like English Literature in the postcolonial light of the latest research insights.

Co 06- a socio- political sense of responsibility to stand up against colonizing human tendencies.

Co 07- avisible literary- critical bent towards understanding life through literature .

B.A.I

PSYCHOLOGY

Paper	Name of the Paper	Max Marks	Duration
I	Basic Psychological Processes	50	3Hrs
II	Psychopathology	50	3Hrs
III	Practicum	50	4Hrs

PAPER -I

BASIC PSYCHOLOGICAL PROCESSES (PaperCode-0119) M.M.:50

Note: This paper consists of five units. From each unit a minimum of two questions would be set and the candidates would be required to attempt one from the each unit

UNIT-1 Introduction: Definition and Goals of Psychology: Perspectives of Psychology: Behavioristic, Cognitive and Humanistic, Cross-cultural. Methods of Study -Experimental, Observational, Interview, Questionnaire and Case study. 1 Credit

UNIT-2 Biological Basis of Behavior and Positive Psychology: Genes and Behavior. The Nervous System: The Central Nervous System (C.N.S.), the Autonomic Nervous System (A.N.S.) and the Peripheral Nervous System (P.N.S.). Positive Psychology: Basic Concepts. Emotional Intelligence and Social Intelligence.1 Credit

UNIT-3 Sensory and Perceptual Processes. Nature and Types of Sensation. Perception and Attention: Process, Definition, Types and Determinants; Principles of Perceptual Organization; Illusion: Nature and Types. 1 Credit

UNIT-4 Learning and Memory: Classical and Operant Conditioning- Basic Processes: Verbal and Observational Learning: Memory: Sensory Memory (S.M.). Short-Term Memory (S.T.M.) and Long - term Memory (LTM.); Forgetting: Process and Theories. 1/2 Credit

UNIT-5 Cognitive and Non-Cognitive Processes: Intelligence: Nature and Types. Motivation: Biogenic and Sociogenic Motives: Personality: Nature and Determinants: Approaches to study Personality: Trait and Type, Approaches: Assessment of personality. Reasoning- Inductive and Deductive Reasoning, Problem Solving.1/2 Credit

Books Recommended-

1.सिंहअरुणकुमारसामान्यमनोविज्ञानबनारसप्रकाशन

2.वर्माप्रीतिआधुनिकसामान्यमनोविज्ञान

3. Baron, R.A. & Byrne, D. A. Understanding Behavior, Tokyo: Halt Sounders.

4. Zimbardo, P.G. Psychology. New York: Haper Collings College publisher.

5. Lefton, L. A. (1985) Psychology. Bosten-Allyn Publisher.

6. Walser, A.L. (1997)

Bhutia 26.5.22

26-5-22

B. A. –I

PSYCHOLOGY

PAPER- II

PSYCHOPATHOLOGY (Paper Code-0120) M.M.:50

Note: This paper consists of five units. From each unit a minimum of two questions would be set and the candidates would be required to attempt one from the each unit.

UNIT-1 Introduction: The concept of Normality and Abnormality. Models of Psychopathology: Psychodynamic, Behavioral and Cognitive. 1 Credit

UNIT-2 Assessment of Psychopathology: Diagnostic Tests, Rating Scales, Clinical Interview and Projective Tests. 1 Credit

U NIT-3 Anxiety Disorders: Panic Disorder, Phobias, Obsessive Compulsive Disorder (OCD) and Generalized Anxiety Disorder (GAD). 1 Credit

UNIT-4 Mood Disorders: Manic- Depressive Episode and Dysthymia; Personality Disorders: Paranoid, Schizoid and Dependent Personality Disorder. Dissociative Disorder and Obesity

1/2 Credit

U NIT-5 Community Psychology: Role of Community Psychology . Behavior therapy, CBT, Psychosocial Therapy, Group Therapy, Counseling Technique, Psychoanalysis

1/2 Credit

26.5.22

26.5.22

Books Recommended-

1. Lamm, A. (1997). Introduction to Psychopathology. NY: Sage
2. Buss, A. H.(999). Psychopathology. NY: John Wiley
3. सिंहएवंतिवारी।असामान्यमनोविज्ञान।आगराविनोदपुस्तकभंडार।
4. कपिलएच. के.असमानमनोविज्ञान।आगराहरप्रसाद।

B. A.I

PSYCHOLOGY

PAPER- III

PRACTIUM M.M.:50

Note: This paper consists of two parts

Part-A

(a) Comprises of Laboratory Experiments

(b) Comprises of Psychological **Testing** and understanding of self and other

(a) Experiments- (Any Four of the following)

(i) Effect of Set on Perception

(ii) Effect of Frustration on Performance.

(iii) Division of Attention

(iv) Problem Solving

(v) Proactive Inhibition

(vi) STM

(vii)Concept Formation

(viii) Muller Lyer Illusion

Part-B

b) **Psychological Tests** (Any four of the following)

i) Verbal Nonverbal Intelligence Test/ Performance Tests.

(ii) Big Five Factor Personality Test

(iii) Happiness Scale

(iv)Emotional Intelligence

(v) Achievement Motivation

EXPERIMENT AND TEST 1 CREDIT

Part-C

Workshop/Value Added Personality Development- 30 Hours.

Anecdotal Record: Each student will be required to observe the behavior of pupil in different setting and select an anecdote to understand, Judge and narrate it as objectively as possible, so as to reveal his/ her psychological insight existing in that anecdotal behavior. This record constitutes a part of psychological assessment of the students. Introduction to the measures of central tendency and graphical presentation of the ungrouped data.

Distribution of Marks

A. Conduction of Psychological Experiment and Reporting -10 Marks

B. Administration of one Psychological Test and Reporting-10 Marks

C. Evaluation of Practical notebook and Anecdotal record-10 Marks

D. Viva-Voce -10 Marks

E. Workshop/Value Added - 10 Marks

Note: No candidate will be allowed to appear in the practical examination unless his /her day-to-day practical work and the report are found satisfactory -1 Credit

Books Recommended:

Choubey. A. (2015). Psycho-lab- Experiment and Test. Raipur Vaibhav Praksha

प्रोग्राम – प्रमाणपत्र पाठ्यक्रम इतिहास	कक्षा– बी.ए. प्रथम वर्ष प्रश्नपत्र – प्रथम	सत्र – 2022.2023

विषय – इतिहास

1	कोर्स कोड	CCHS1
2	पाठ्यक्रम का शीर्षक	भारत का इतिहास (प्रारंभ से 1206 ई. तक)
3	कोर्स का प्रकार	मूल पाठ्क्रम
4	पूर्वापेक्षा (यदि कोई हो)	12 वीं उत्तीर्ण विद्यार्थी इस पाठ्यक्रम में प्रवेश ले सकते हैं।
5	पाठ्यक्रम सीखने का परिणाम	विद्यार्थी, प्रागैतिहासिक युग, आद्यैतिहासिक युग और ऐतिहासिक युग में मानव के क्रमिक विकास के विभिन्न चरणों का विश्लेषण कर सकेंगे। भारत की प्राचीन सभ्यताओं जैसे सिन्धु–सरस्वती, वैदिक सभ्यता और उत्तर वैदिक सभ्यता आदि के विषय में गहन जानकारी प्राप्त कर पायेंगे। मौर्य काल और गुप्त काल में भारत के स्वर्णिम अतीत, उनकी दिग्विजय, कला, वास्तुकलाएवं साहित्य आदि को विस्तार से समझ पायेंगे।
6	क्रेडिट वेल्यू	5
7	कुल अंक	अधिकतम अंक : 75 न्यूनतम अंक 25

पाठ्यक्रम की सामग्री

इकाई	विषय	क्रेडिट
1	1. भारत की भौगोलिक विशेषताएं 2. प्राचीन भारतीय इतिहास के स्त्रोतों का सर्वेक्षण 3. पाषाण कालीन संस्कृति 4. हड़प्पा सभ्यता नवीन पुरातात्विक स्त्रोतों के आलोक में (लोथल, कालीबंगा, बनावली, सूरकोतड़ा, धौलावीरा और राखीगढ़ी)	1
2	5. वैदिक सभ्यता और संस्कृति 6. महाजनपद काल 7. धार्मिक क्रांति – जैन धर्म और बौध्द धर्म की भारतीय संस्कृति को देन 8. सिकंदर का आक्रमण और उसका प्रभाव	1
3	9. मगध का उत्कर्ष 10. मौर्य साम्राज्य एवं अशोक 11. मौर्येत्तर काल – शुंग, कुषाण, सातवहन 12. संगम युग – साहित्य, संस्कृति, चोल एवं पाण्ड्य राज्य	1
4	13. गुप्त साम्राज्य – प्रशासन, आर्थिक एवं सांस्कृतिक दशा 14. राजपूतों की उत्पत्ति – प्राशासनिक एवं सामाजिक व्यवस्था 15. वृहत्तर भारत की अवधारणा तथा भारतीय संस्कृति का विस्तारीकरण (दक्षिण पूर्व एशिया और □□□लंका से संबंध) 16. पूर्व मध्यकाल में अरबी और तुर्की आक्रमण	1
5	17. छत्तीसगढ़ का परिचय एवं नामकरण 18. छत्तीसगढ़ का इतिहास प्रागैतिहासिक काल से गुप्त काल तक 19. छत्तीसगढ़ के प्रमुख राजवंश – राजर्षितुल्य, नल, शरभपुरी, सोमवंश, पाण्डु वंश, छिन्दक नाग वंश 20. छत्तीसगढ़ के प्रमुख शैलाश्रय केन्द्र – रामगढ़, कबरा पहाड़, सिंघनपुर, करमागढ़ सोंठीघाट	1

RK Pandey 23/2/23

Dr. ANIL KUMAR PANDEY 23/2/23

23.02.23

अध्यक्ष

केंद्रीय अध्ययन मण्डल

इतिहास

संदर्भ ग्रंथ सूची–

1. Majumdar R.C.: The History and Culture of Indian People Vol. I, Vedic Age,
2. Majumdar R.C.: The History and Culture of Indian People Vol. II, The Age of Imperial Unity,
3. Majumdar R.C.: The History and Culture of Indian People Vol. III, The Classical Age,
4. Majumdar R.C.: The History and Culture of Indian People Vol. IV, The Age Imperial Kanauj,
5. Majumdar R.C.: The History and Culture of Indian People Vol. V, The struggle for Empire,
6. Jayaswal, Vidula : Bhartiya Itihas ke Adi Charan ki Rooprekha,
7. Pandey Rajbali : Prachin Bharat,
8. Raychaudhary, H.C.: Political History of Ancient India,
9. Sankalia, H.D.: Prehistory and Prohistory of India and Pakistan,
10. Sastri, K.A. Nilakanta: A history of South India from Prehistoric Time to the
11. Singh Kripa Shankar: Rigveda, Harrappa Sabhyata aur Sanskritic Nirantarta.
12. Singh Upinder : A History of Ancient and Early Medieval India,
13. Thapar Romila: Early India from the Beginning to 1300 ,
14. Tripathi R.S.: History of Ancient India,
15. श्रीवास्तव, के.सी. : प्राचीन भारत का इतिहास तथा संस्कृति,
16. नहर रविभानु सिंह : प्राचीन भारत का राजनीतिक एवं सांस्कृतिक इतिहास,
17. श्रीवास्तव, बी.के. : प्राचीन भारत का इतिहास
18. गुप्त ि विकुमार : प्राचीन भारत का इतिहास,
19. पाण्डेय श्रीनेत्र : प्राचीन भारत का राजनीतिक एवं सांस्कृतिक इतिहास
20. पाण्डेय विमल चन्द : प्राचीन भारत का राजनीतिक एवं सांस्कृतिक इतिहास
21. राजपुरोहित भगवती लाल : राजा भोज, विक्रमादित्य

23-2-23

Program: **Certificate Course in History**		Class: **B.A. I Year Paper - First**	Session: **2022-2023**
1	Course Code	CCHS1	
2	Course Title	History of India (Beginning to 1206 A.D.)	
3	Course Type	Core Course	
4	Pre-requisite (if any)	12th. Pass students can take admission in this course.	
5	Course Learning Outcomes (CLO)	By studying this course a student will be able to develop the ability to analyze the various stages of the evolution of human life from the prehistoric era to the historical era of ancient India. Students will be able to study political, administrative, economic, religious and social issues relevant from Vedic era to Rajput period. The study of the gradual development of regional history, civilization and culture is important from the point of view of competitive examination.	
6	Credit Value	Theory : 5	
7	Total Marks	Maximum Marks: 75	Minimum Passing Marks : 25

Unit	Topics	Credit
I	1. Geographical features of India. 2. A survey of the sources of ancient Indian History. 3. Stone age culture. 4. Harappa Civilization – In the light of new archeological sources – Lothal, Kalibanga, Banavali, Surkotada , Dholavira, Rakhigarhi,.	1
II	5. Vedic civilization and culture. 6. Mahajanpada Period. 7. Religious Movement - Contribution of Jainism and Buddhism to Indian culture. 8. Alexander's Invasion and its impact.	1
III	9. Rise of Magadh. 10. Mauryan Dynasty and Ashoka. 11. Post Mauryan Period – Shung, Kushan and Saatvahana. 12. Sangam Period – Literature and culture, Chola and Pandya Dynasty.	1
IV	13. Gupta Dynasty – Administration, economic and cultural condition. 14. Origin of Rajputs- Administration and social system. 15. Concept of Greater India and expansion of Indian culture (in relation with South -East Asia and Sri Lanka) 16. Arabic and Turkish invasion in the Early Medieval period.	1
V	17. Introduction to Chhattisgarh and nomenclature. 18. History of Chhattisgarh – from Prehistoric to Gupta periods. 19. Important dynasty of Chhattisgarh - Rajarshitulya, Nal Dynasty, Sharabhpuri Dynasty, Somvansh Dynasty, Panduvansh Dynasty, and Chhindak Nag Dynasty. 20. Important Rock Shelters of Chhattisgarh – Ramgarh, Kabra Pahad, Singhanpur, Karmagarh and Sonthighat.	1

23.02.23

Text Books, Reference Books, Other resources

1. Majumdar R.C.: The History and Culture of Indian People Vol. I, Vedic Age,
2. Majumdar R.C.: The History and Culture of Indian People Vol. II, The Age of Imperial Unity,
3. Majumdar R.C.: The History and Culture of Indian People Vol. III, The Classical Age,
4. Majumdar R.C.: The History and Culture of Indian People Vol. IV, The Age Imperial Kanauj,
5. Majumdar R.C.: The History and Culture of Indian People Vol. V, The struggle for Empire,
6. Jayaswal, Vidula : Bhartiya Itihas ke Adi Charan ki Rooprekha,
7. Pandey Rajbali : Prachin Bharat,
8. Raychaudhary, H.C.: Political History of Ancient India,
9. Sankalia, H.D.: Prehistory and Prohistory of India and Pakistan,
10. Sastri, K.A. Nilakanta: A history of South India from Prehistoric Time to the
11. Singh Kripa Shankar: Rigveda, Harrappa Sabhyata aur Sanskritic Nirantarta.
12. Singh Upinder : A History of Ancient and Early Medieval India,
13. Thapar Romila: Early India from the Beginning to 1300 ,
14. Tripathi R.S.: History of Ancient India,
15. श्रीवास्तव, के.सी. : प्राचीन भारत का इतिहास तथा संस्कृति,
16. नहर रविभानु सिंह : प्राचीन भारत का राजनीतिक एवं सांस्कृतिक इतिहास,
17. श्रीवास्तव, बी.के. : प्राचीन भारत का इतिहास
18. गुप्त ि ावकुमार : प्राचीन भारत का इतिहास,
19. पाण्डेय श्रीनेत्र : प्राचीन भारत का राजनीतिक एवं सांस्कृतिक इतिहास
20. पाण्डेय विमल चन्द : प्राचीन भारत का राजनीतिक एवं सांस्कृतिक इतिहास

23.02.23

प्रोग्राम – प्रमाणपत्र पाठ्यक्रम इतिहास		कक्षा– बी.ए. प्रथम वर्ष प्रश्नपत्र – द्वितीय	सत्र – 2022.2023
विषय – इतिहास			
1	कोर्स कोड	CCHS2	
2	पाठ्यक्रम का शीर्षक	विश्व का इतिहास (1453 से 1871 ई. तक)	
3	कोर्स का प्रकार	मूल पाठ्क्रम	
4	पूर्वापेक्षा (यदि कोई हो)	12 वीं उत्तीर्ण विद्यार्थी इस पाठ्यक्रम में प्रवेश ले सकते हैं।	
5	पाठ्यक्रम सीखने का परिणाम	विद्यार्थी, प्रस्तुत पाठ्क्रम के अध्ययन से विश्व की प्रमुख ऐतिहासिक घटनाओं की जानकारी प्राप्त करेंगे एवं भारतीय इतिहास में होने वाली घटनाओं से उनका अंर्तसंबंध स्थापित कर पायेंगे। विश्व में होने वाली राजनैतिक, आर्थिक एवं औद्योगिक क्रांति के बाद होने वाले परिवर्तन का अध्ययन करते हुए विद्यार्थी वैश्विक परिदृश्य में भारतीय इतिहास का तुलनात्मक अध्ययन करने में सक्षम होंगे।	
6	क्रेडिट वेल्यू	5	
7	कुल अंक	अधिकतम अंक : 75 न्यूनतम अंक 25	

पाठ्यक्रम की सामग्री		
इकाई	विषय	क्रेडिट
1	1. यूरोप में सामंतवाद का पतन एवं आधुनिक युग का प्रारंभ 2. पुनर्जागरण 3. धर्मसुधार आंदोलन एवं प्रतिधर्म सुधार आंदोलन 4. राष्ट्रीय राज्यों □□उदय : कारण एवं परिणाम	1
2	5. वाणिज्यवाद 6. औद्योगिक क्रांति 7. उपनिवेशवाद 8. गौरवपूर्ण क्रांति (1688)	1
3	9. अमेरिका का स्वतंत्रता संग्राम 10. फ्रांस की क्रांति के कारण एवं परिणाम 11. नेपोलियन युग 12. विएना कांग्रेस	1
4	13. मेटरनिख युग – विदेश नीति 14. यूरोप में 1830 की क्रांति 15. यूरोप में 1848 की क्रांति 16. इंग्लैण्ड में उदारवाद – 1832 एवं 1867 का सुधार अधिनियम	1
5	17. पूर्वी समस्या – क्रीमिया युध्द तक 18. अफ्रीका का विभाजन 19. इटली का एकीकरण 20. जर्मनी का एकीकरण	1

23.02.23

संदर्भ ग्रंथ सूची–

1. मेहता, बी.एन.पाल: आधुनिक यूरोप (1453–1919)
2. वर्मा, एस.आर.,: यूरोप का इतिहास (1450–1789)
3. Khuranan K.L.: modern Europe (1453-1789)
4. श्रीवास्तव, बी.के.: वि व का इतिहास (1453–1890)
5. जैन माथुर : आधुनिक वि व का इतिहास, पुनर्जागरण से भीत युद्ध तक
6. माथुर, बी.एस.: संयुक्त राज्य अमेरिका का इतिहास,
7. काम्बले, जे.आर. : अमेरिका का इतिहास
8. Shinde manik manohar : History of modern Europe
9. भार्मा एल.पी. : इंग्लैण्ड का इतिहास,
10. भार्मा मथुरालाल : यूरोप का इतिहास (1789–1870)
11. भार्मा पार्थसारथी : ब्रिटेन का इतिहास.
12. सक्सेना बनारसीप्रसाद : अमेरिका का इतिहास

25.02.23

SYLLABUS: ECONOMICS

PART-A, INTRODUCTION			
PROGRAM: Certificate	CLASS: B.A. I[st] Year	YEAR:2024	SESSION:2023-24

SUBJECT: ECONOMICS			
1	PROGRAM CODE:	A1-ECO-CER	
2	COURSE CODE:	A1-ECO-CER-DSC-1	
3	COURSE TITLE:	PRINCIPLES OF MICRO ECONOMICS (Core Course)	
4	COURSE LEARNING OUTCOME:	Student after passing this course will understand rational behavior of microeconomics. Students will know about the production process. Along with it, they will also be able to explain the markets and their compositions. The students will have knowledge of welfare, which is a pivot to equality and justice. Study of Microeconomics helps the students to know and judge the basics of buying and selling and product pricing.	
5	TOTAL MARKS=100	MAX MARKS: 100	MIN PASS MARKS:34

PART-B, CONTENT OF THE COURSE

UNIT	TOPICS	
UNIT I- Introduction of Economics	1.Definition, Nature and Scope of Economics, 2.Utility analysis- Cardinal and Ordinal approach 3.Indifference curve analysis 4. Consumer's Equilibrium & consumer surplus 5. Law of demand, Elasticity of demand. 6. Demand and supply relationship	
UNIT II- Production	1. Theory of Production 2. Law of variable proportion 3. Production function 4. Economies of scale 5. Iso Productive curves 6. MRTS 7. Returns to scale 8. Cost and revenue concepts 9. Equilibrium of the firm.	
UNIT III- Market and Price determination	1. Meaning of various markets 2. Perfect competition and price output determination 3. Monopoly and price- output determination 4. Monopolistic competition and price-output determination	
UNIT IV- Theory of factor pricing	1. Marginal productivity theory of distribution 2. Wage theories 3. Rent theories 4. Interest theories 5. Profit theories	

UNIT V- Welfare Economics	1. Concept of welfare economics 2. Value Judgment 3. Pigou's welfare economics 4. Pareto's Optimum Theory.	

PART-C, LEARNING RESOURCES (BOOKS RECOMMENDED)

AUTHOR	TITLE	PUBLISHER
Jhingan, M.L.	Micro Economic Theories (Hindi & English)	Vrinda Publications
Ahuja, H.L.	Principles of Micro Economics (Hindi & English)	S Chand & Co
Seth, M.L.	Micro Economics (Hindi & English)	L.N Agrawal
Koutsoyiannis, A.	Modern Micro Economics	Mcmillan
Dhingra, I. C., V. K. Garg	Principles of Micro Economics	Sultan Chand & Sons
Bose, D., A. Marimuthu	An Introduction to Micro Economics	Himalaya Publishing House
Vengedasalam, Deviga, Karunagaran Madhavan	Principles of Economics	Oxford University Press
सिन्हा, बी.सी., पुष्पा सिन्हा	व्यष्टि अर्थशास्त्र	SBPD
पंत जे॰सी॰ एवं मिश्रा	सूक्ष्म अर्थशास्त्र	साहित्य भवन
जैन, के. पी.	आधुनिक माइक्रो अर्थशास्त्र	रतन प्रकाशन मंदिर

SUGGESTED DIGITAL PLATFORM

1	https://www.swayamprabha.gov.in/index.php
2	https://vidyamitra.inflibnet.ac.in/index.php
3	https://epgp.inflibnet.ac.in/Home/ViewSubject

PART-D ASSESSMENT & EVALUATION

Recommended Continuous Evaluation Methods:
Maximum Marks: 100
University Exam (UE):100 marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE):NIL	Class Test Assignment/Presentation	0 Marks 0 Marks
External Assessment: University Exam Section:100 Time: 3 hrs.	10 questions (02 from each unit). Attempt one question from each unit.	20 marks each

SYLLABUS: ECONOMICS

PART-A INTRODUCTION			
PROGRAM: CERTIFICATE	CLASS: B.A. I[st] year	YEAR: 2024	SESSION: 2023-24

SUBJECT: ECONOMICS			
1.	PROGRAM CODE	A1-ECO-CER	
2.	COURSE CODE	A1-ECO-CER-DSC-2	
3.	COURSE TITLE	**INDIAN ECONOMY(Core Course)**	
4.	COURSE LEARNING OUTCOME	• The students learn about the state of Indian economy pre and post-independence. • The students learn about the planning process and its achievements in Indian economy. • The students come across with the new economic reforms introduced in Indian economy in the year 1991 and its role in India's development. • The students will come to know about some social problems like overpopulation, education, health & malnutrition, poverty, unemployment etc. • The students learn the problems and prospects of agriculture sector in India. • The students learn various aspects of industrial development and reforms process in the industrial economy. • The students learn the role of foreign trade on Indian economy. They will also learn various aspects of foreign trade in India. • The students learn the state income of Chhattisgarh in the form of GSDP, Per capita income, sectorial contribution etc. • The students also learn about the importance of agriculture in Chhattisgarh's economy. • The students learn about various crops their production and productivity. • The students learn about various industries and infrastructure facilities in Chhattisgarh.	
5.	TOTAL MARKS: =100	MAXIMUM MARKS: 100	MINIMUM PASSING MARKS: 34

PART B- CONTENT OF COURSE

UNIT	TOPICS	
UNIT-I AN INTRODUCTION TO INDIAN ECONOMY	1. INDIAN ECONOMY AT THE TIME OF INDEPENDENCE 2. POST INDEPENDENCE INDIAN ECONOMY 3. DEVELOPMENT THROUGH FIVE YEAR PLANS 4. NITI AAYOG 5. NEW ECONOMIC REFORMS 6. IMPACT OF NEW ECONOMIC REFORMS IN ECONOMIC DEVELOPMENT	

UNIT-II DEMOGRAPHY	1. DEMOGRAPHIC TRENDS OF INDIA 2. ISSUES OF EDUCATION, HEALTH, MALNUTRITION AND MIGRATION , POVERTY AND INEQUALITY 3. UNEMPLOYMENT & OCCUPATIONAL DISTRIBUTION 4. MUDRA YOJANA 5. INTERNATIONAL COMPARISON IN POVERTY & HUMAN DEVELOPMENT	
UNIT-III AGRICULTURE	1. NATURE & IMPORTANCE OF AGRICULTURE 2. AGRICULTURE PRODUCTION & PRODUCTIVITY 3. MAJOR PROBLEMS IN INDIAN AGRICULTURE 4. LAND USE PATTERN & LAND REFORMS 5. NEW AGRICULTURE STRATIGIES & GREEN REVOLUTION 6. RURAL CREDIT 7. AGRICULTURE MARKETING	
UNIT-IV INDUSTRY & FOREIGN TRADE	1. INDUSTRIAL GROWTH & PRODUCTIVITY 2. INDUSTRIAL POLICY & ECONOMIC REFORMS 3. MICRO, SMALL & MEDIUM INDUSTRIES (MSME) 4. PROBLEMS OF SMALL SCALE INDUSTRIES 5. PUBLIC ENTERPRIZES IN INDIA 6. ROLE OF FOREIGN TRADE IN INDIA'S DEVELOPMENT 7. TRENDS OF IMPORT & EXPORT 8. DIRECTION & COMPOSITION OF INDIA'S FOREIGN TRADE	
UNIT-V CHHATTISGARH'S ECONOMY	1. GROSS STATE DOMESTIC PRODUCT OF CG, PER CAPITA INCOME, SECTORAL CONTRIBUTION IN GSDP 2. AGRICULTURE IN CHHATTISGARH: IMPORTANT CROP, AGRICULTURE PRODUCTION & PRODUCTIVITY, LAND USE, IRRIGATION FACILITIES, LAND HOLDING 3. INDUSTRY IN CHHATTISGARH: MAJOR INDUSTRIES, INDUSTRIAL PROGRESS, DEVELOPMENT PROSPECTS OF MINERAL BASED INDUSTRIES IN CG. 4. INFRASTRUCTURE IN CHHATTISGARH:ENERGY, TRANSPORTATION AND COMMUNICATION	

PART C: LEARNING RESOURCES (BOOKS RECOMMENDED)

AUTHOR	TITLE	PUBLISHER
Uma Kapila	India Economy: Performance & Policies	Academic Foundation
Datt, Ruddar & K.P.M. Sundharam	Indian Economy	S. Chand & Co. new Delhi
Mishra & Puri	Indian Economy	Himalaya Publishing House

Govt. of India	Economic Survey (Various Issues)	Govt. of India
Brahmanand, P.R. & V.R. Panchmukhi (Eds)	The development process of the Indian Economy	Himalaya Publishing, Mumbai
मिश्रा एवं पुरी	भारतीय अर्थव्यवस्था	हिमालया पब्लिशिंग हाउस
अग्रवाल, ए. एन.	भारतीय अर्थव्यवस्था	न्यू ऐज इंटरनेशनल पब्लिशर्स
मिश्र, जे. पी.	भारतीय अर्थव्यवस्था	साहित्य भवन पब्लिकेशन, आगरा
छत्तीसगढ़ सरकार	आर्थिक सर्वेक्षण	आर्थिक एवं सांख्यिकीय संचालनालय, रायपुर

SUGGESTED DIGITAL PLATFORM

1.	https://epgp.inflibnet.ac.in
2.	https;//vidyamitra.inflibnet.ac.in
3.	https://vidyamitra.inflibnet.ac.in/index.php/search
4.	https://www.swayamprabha.gov.in
5.	https://www.rbi.org.in/
6.	http://descg.gov.in
7.	https://www.indiabudget.gov.in/economicsurvey/
8.	https://www.cso.ie/en/index.html

PART-D ASSESSMENT & EVALUATION

Recommended Continuous Evaluation Methods:
Maximum Marks: 100
Continuous Comprehensive Evaluation (CCE): 0 Marks, University Exam (UE):100
marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE):0	Class Test Assignment/Presentation	0 Marks 0 Marks
External Assessment: University Exam Section:100 Time: 3 hrs.	10 questions (02 from each unit). Attempt one question from each unit.	20 marks each

संशोधित पाठ्यक्रम Reviews Syllabus			
विषय : दर्शन शास्त्र Philosophy			
सर्टिफिकेट कोर्स Certificate Course	कक्षा : बी.ए. प्रथम वर्ष Class : B.A. First Year	वर्ष : 2023 Year : 2023	सत्र : 2023–24 session : 2023-24

सर्टिफिकेट कोर्स के लिए दो अनिवार्य सैद्धांतिक प्रश्न–पत्र होगें।

1	कोर्स कोड	
2	कोर्स शीर्षक Course Title	भारतीय दर्शन Indian Philosophy
3	कोर्स का प्रकार Course Type	सैद्धांतिक – प्रथम पेपर Theory Paper First
4	पूर्व आवश्यकता	सभी के लिए
5	पाठ्यक्रम अध्ययन की परिलब्धियां CLO	इस पाठ्यक्रम को पूरा करने के बाद छात्र इस स्थिति में होगा कि– 1 भारतीय दर्शन की स्थिति को समझ सके। 2 दर्शन शास्त्र के काल कम की जानकारी होगी। 3 विषय से संबंधित विभिन्न अध्ययन पद्धतियों से परिचित होगा। **Learning Outcome** (Subject Outcome): After studying this subject/paper the student will be able to:- 1. Understand the status of Indian Philosophy. 2. Understand the phases of Indian Philosophy. 3. Become familiar with various methods of studying the subject.
6	प्रस्तावित व्याख्यान Proposed Lecture	75 75
7	केडिट मूल्य Credit value	सैद्धांतिक – 5 Theoretical-5
8	कुल अंक Total Marks	अधिकतम अंक – 80 Maximum marks 80

22-02-2023

22/02/23

Ravipur
22-2-23

बी.ए भाग - एक ब : पाठ्यक्रम का प्रारूप

इकाई	विषय वस्तु	प्रस्तावित व्याख्यान–75
1	1. भारतीय दर्शन : परिचय एवं विशेषताएं 2. वेद, उपनिषद : ब्रह्म, आत्मा 3. चार्वाक दर्शन : तत्वमीमांसा	20
2	1. जैन दर्शन : स्याद्वाद, जीव 2. बौद्ध दर्शन : चार आर्यसत्य, अनात्मवाद	20
3	1. न्याय दर्शन : प्रत्यक्ष, अनुमान 2. योग दर्शन : अष्टांग योग, ईश्वर	15
4	1. शंकराचार्य : ब्रह्म, माया, आत्मा 2. रामानुजाचार्य : ब्रह्म, जीव, मोक्ष	20

कोर्स आउटकम : भारतीय दर्शन मूलरूप से ज्ञानमीमांसा, तत्वमीमांसा, नीतिशास्त्र और धर्म दर्शन का विश्लेषण करता है लेकिन इसका मुख्य संबंध मनुष्य के सर्वांगीण सामाजिक विकास से है।

22.03.2023

22/3/23

22-3-23

Unit	Subject Matter	Proposed Lectures
1	1. Indian Philosophy : Introduction and Characteristics 2. Veda Upanishad : Brahma,Soul 3.Charvaka Philosophy : Metaphysics	20
2	1. Jain Philosophy : Syadvada, Jiva 2. Buddhism: Four Noble Truth, Anatmavada	20
3	1. Nyaya Philosophy : Precption & infrence 2. Yoga Philosophy : Ashtang Yoga ,God	15
4	1.Shankaracharya : Brahman, Maya, Atma 2. Ramanujacharya: Brahman,Jiva, Liberation	20

Course Outcome :- Indian Philosophy primary concern is to analyse the fundamental concept of Epistemology, Metaphysics, Ethics & Religion, its ultimate concern is the social well being of individuals.

संदर्भ ग्रंथ –

1. भारतीय दर्शन – डॉ. केदारनाथ सिंह, शशिभूषण सिंह
2. भारतीय दर्शन – डॉ. चन्द्रधर शर्मा
3. भारतीय दर्शन – डॉ. हरेन्द्र प्रसाद
4. भारतीय दर्शन – दत्त एवं चटर्जी
5. भारतीय दर्शन – डॉ. शोभा निगम
6. भारतीय दर्शन – डॉ. एन. के. देवराज
7. An Introduction to Indian Philosophy- Satish Chandra Chaterjee & Dhirendra Mohan Datta.
8. A Critical Survey of Indian Philosophy- Chandradhar Sharma
9. Outlines of Indian Philosophy - M. Hriyanna
10. A History of Indian Philosophy- Surendranath Dasgupta

22-02-2023 22/02/23 22-2-23

संशोधित पाठ्यक्रम Reviews Syllabus			
विषय : दर्शन शास्त्र Philosophy			
सर्टिफिकेट कोर्स Certificate Course	कक्षा : बी.ए. प्रथम वर्ष Class : B.A. First Year	वर्ष : 2023 Year : 2023	सत्र : 2023–24 session : 2023-24

सर्टिफिकेट कोर्स के लिए दो अनिवार्य सैद्धांतिक प्रश्न–पत्र होगें।

1	कोर्स कोड	
2	कोर्स शीर्षक Course Title	नीति शास्त्र Ethics
3	कोर्स का प्रकार Course Type	सैद्धांतिक – द्वितीय पेपर Theory Paper -Second
4	पूर्व आवश्यकता	सभी के लिए
5	पाठ्यकम अध्ययन की परिलब्धियां CLO	इस पाठ्यकम को पूरा करने के बाद छात्र इस स्थिति में होगा कि– 1 नैतिक व्यक्तित्व का निर्माण। **Learning Outcome** (Subject Outcome): After studying this subject/paper the student will be able to:- 1. Building a moral personality .
6	प्रस्तावित व्याख्यान Proposed Lecture	75 75
7	क्रेडिट मूल्य Credit value	सैद्धांतिक – 5 Theoretical-5
8	कुल अंक Total Marks	अधिकतम अंक – 80 Maximum marks 80

22.02.2023 22/02/23 Review 22-2-23

बी.ए. भाग - एक ब : पाठ्यक्रम का प्रारूप

इकाई	विषय वस्तु	प्रस्तावित व्याख्यान–75
1	1. नीति शास्त्र : अर्थ, परिभाषा व महत्व 2. नैतिक मूल्य एवं अन्य मूल्य 3. कर्म का सिद्धांत 4. पुरूषार्थ साधना	20
2	1. बौद्ध दर्शन : अष्टांग पथ 2. जैन दर्शन : पंच महाव्रत 3. चार्वाक दर्शन : नैतिक विचार	20
3	1. नियतिवाद एवं अनियतिवाद 2. दण्ड का सिद्धांत 3. सद्गुण : सुकरात	15
4	1. सुखवाद – बेंथम, मिल 2. "कर्त्तव्य के लिए कर्त्तव्य" – कांट 3. गीता – निष्काम कर्म, लोक संग्रह	20

कोर्स आउटकम : नैतिक अवधारणाओं, मूल्यों का अध्ययन

Unit	Subject Matter	Proposed Lectures
1	1 Ethics : Meaning, definition and importance 2 Moral values and Other values 3 Theory of karma, Rebirth, Immortality of Soul 4 Purushartha Sadhana	20
2	1- Buddhist Philosophy: Astanga path 2- Jain Philosophy : Panch Mahavrata 3- Charwak Philosohy - Moral Views	20
3	1- Determinism and Indeterminism 2- Theory of Punishment 3- Virtue : Socrates	15
4	1- Hedonism -Bentham and Mill" 2- "Duty for the Sake of duty" - Kant 3- Geeta - Nishkam Karma, Lok Sangarha	20

Course Outcome :- The study of Ethical Concepts and values.

22-02-2023 22/02/23 22-2-23

संदर्भ ग्रंथ –

1. नीति शास्त्र – डॉ. हृदय नारायण मिश्र
2. नीति शास्त्र – डॉ. नित्यानन्द मिश्र
3. नीति शास्त्र के मूल सिद्धांत – डॉ. वेद प्रकाश वर्मा
4. नीति शास्त्र का सर्वेक्षण – संगम लाल पाण्डेय
5. नीति शास्त्र – डॉ. बी.एन. सिंह
6. नीति शास्त्र की भूमिका – डॉ. सत्य पाल त्रिवेदी
7. नीति शास्त्र : श्याम किशोर सेठ, नीलिमा मिश्र
8. नीति प्रवेशिका : जे.एस. मेकेंजी
   अनु. डॉ. गोवर्धन भट्ट, श्री गंगारत्न पांडेय,
   श्रीमती शशि प्रभा त्रिपाठी
9. नीतिविज्ञान के मूल सिद्धांत – डॉ. लक्ष्मी सक्सेना
10. नीतिशास्त्र की रूपरेखा– अशोक कुमार वर्मा
11. नीतिशास्त्र – शांति जोशी
12. नीति शास्त्र – कृष्ण कुमार
13. An Introduction to Ethics- William Lillie
14- A Manual of Ethics - J.S. Mackenzie

22.02.2023 22/02/23 22-2-23

त्रिवर्षीय स्नातक पाठयक्रम

विषय – संस्कृत

(राष्ट्रीय शिक्षा नीति 2020 पर आधारित प्रस्तावित पाठ्यक्रम)

स्नातक प्रथम वर्ष, द्वितीय वर्ष एवं तृतीयवर्ष हेतु संस्कृत विषय के दो-दो प्रश्नपत्र 75 अंकों के होंगे, जिनमें 60 अंकों की लिखित परीक्षा होगी और आन्तरिकमूल्यांकन(सतत व्यापक मूल्यांकन) 15 अंकों का होगा। प्रत्येक प्रश्नपत्र पाँच इकाइयों में विभक्त होगा और प्रत्येक इकाई 12 अंकों की होगी।

ProgrammeOutcome
छात्रों में लेखन एवं वाचन में भाषागत कौशल का विकास होगा। भाषिक ज्ञान के साथ अभिव्यक्ति क्षमता का विकास होगा। प्राचीन भारतीय विद्या की जानकारीपूर्वक राष्ट्रगौरव की चेतना विकसित होगी। भारतीय सांस्कृतिक परम्परा से अवगत होकर विश्वमानवता के भाव में प्रतिष्ठित होंगे। नैतिक तथा मानवीय मूल्यों को आत्मसात् कर राष्ट्रोन्नति में एक सक्षम मानव संसाधन सिद्ध होंगे।

Programme Specific Outcome
विश्व की सर्वाधिक वैज्ञानिक भाषा संस्कृत के स्वर्णिम अतीत तथा वर्तमान युग में उसकी प्रासंगिकता का अवबोध होगा। संस्कृतभाषा में रचित अनेक शास्त्रों के अनुशीलन से शास्त्रीय ज्ञान सह तर्कपूर्ण मौलिक चिन्तन की क्षमता निर्मित होगी। संस्कृत काव्य की विविध विधाओं से परिचय के फलस्वरूप भाषामर्मज्ञता का विस्तार होगा। संस्कृत व्याकरण के अध्ययन से उच्चारण-लेखन की भाषिक दक्षता प्राप्त होगी। भारतीय मनीषा द्वारा विश्व को प्रदत्त ज्ञानावदान की जानकारी राष्ट्रगौरवानुभूतिपूर्वक मौलिक चिन्तन-सर्जन की प्रेरणा प्रदान करेगी।

Course Outcome
प्राचीन नाट्य साहित्य के अनुशीलन से तत्कालीन समाज तथा लोक-व्यवहार एवं भाषा आदि का ज्ञान होगा। मानवीय जीवनमूल्य, संवेदनाओं तथा गुणों को आत्मसात् करने की प्रेरणा मिलेगी। विश्वस्वीकृत सर्वश्रेष्ठ व्याकरणशास्त्र की विशेषताओं से परिचय होगा। वर्णमाला की गहन जानकारीपूर्वक शब्दों के योग तथा विच्छेद का ज्ञान प्राप्त होगा। शब्दों के आधिकारिक ज्ञान के साथ संभाषण एवं लेखन में दक्षता प्राप्त होगी।

बी.ए. प्रथम वर्ष

प्रथम प्रश्नपत्र - नाटक, व्याकरण और भाषाकौशल Paper Code- Y101

पूर्णांक– 60

प्रस्तावित व्याख्यान 90 — 6 Credit

इकाई	पाठ्यविषय	व्याख्यान-संख्या
1	स्वप्नवासवदत्तम् – प्रथम से चतुर्थ अंक पर्यन्त। (व्याख्या तथा समीक्षात्मक प्रश्न)	20
2	स्वप्नवासवदत्तम् – पंचम अंक से समाप्तिपर्यन्त। (व्याख्या तथा समीक्षात्मक प्रश्न)	15
3	**संस्कृत संभाषण तथा लेखन –** (निम्नलिखित अनुसार शिक्षण केन्द्रित होगा।) सुबन्त (शब्दरूप) - देव, गति, भानु, पितृ, करिन्, भवत्, कर्तृ, आत्मन्,लता, मति, नदी, मातृ, फल, सर्व, तद्, एतद्, यद्, इदम्, अस्मद्, युष्मद्, एक, द्वि, त्रि, चतुर्। तिङन्त (धातुरूप) - परस्मैपदी - भू, पठ्, गम्, अस्, पा, स्था, दृश्, दा, कृ, तुद्, चुर्, दिव्। आत्मनेपदी - सेव्, रम्, रुच्, मुद्, लभ्, जन्, वृत्, वृध्। अव्यय - अत्र, यत्र, तत्र, कुत्र, अन्यत्र, सर्वत्र, एकत्र, अधुना, इदानीम्, अद्य, श्वः, परश्वः, ह्यः, परह्यः, आम्, न, पुरतः, पृष्ठतः, वामतः, दक्षिणतः, उपरि, अधः, यदा, तदा, कदा, सदा, सर्वदा, किम्, कुतः, कति, किमर्थम्, अतः।	15

4	सन्धि - अच्, हल् तथा विसर्ग सन्धि (लघुसिद्धान्तकौमुदी से अध्येतव्य))	20
5	प्रत्याहार, संज्ञा और विभक्त्यर्थ प्रकरण (लघुसिद्धान्तकौमुदी से अध्येतव्य)	20

अनुशंसितग्रन्थ –

1. स्वप्नवासवदत्तम् –श्री तारिणीश झा, प्रकाशक -रामनारायण बेनीमाधव, इलाहाबाद
2. स्वप्नवासवदत्तम्–वासुदेव कृष्ण चतुर्वेदी, प्रकाशक -महालक्ष्मी प्रकाशन, आगरा
3. प्रारम्भिक रचनानुवादकौमुदी – डा. कपिलदेवद्विवेदी, प्रकाशक– विश्वविद्यालय प्रकाशन, वाराणसी
4. रचनानुवादकौमुदी – डा. कपिलदेवद्विवेदी, प्रकाशक– विश्वविद्यालय प्रकाशन, वाराणसी
5. अनुवाद चन्द्रिका –डा. यदुनन्दन मिश्र,प्रकाशक -चौखम्बा ओरियन्टालिया, दिल्ली
6. संस्कृतमेंअनुवादकैसेकरें – उमाकान्तमिश्रशास्त्री, प्रकाशक - भारतीभवन
7. लघुसिद्धान्तकौमुदी – श्रीमहेशसिंहकुशवाहा, प्रकाशक – चौखम्बाविद्याभवन, वाराणसी
8. लघुसिद्धान्तकौमुदी – रामविलास चौधरी, प्रकाशक – मोतीलाल बनारसीदास, वाराणसी
9. रूपचन्द्रिका – ब्रह्मानन्द त्रिपाठी, प्रकाशक –चौखम्बाविद्याभवन, वाराणसी
10. संस्कृतस्यव्यावहारिकस्वरूपम् – डा. नरेन्द्र, प्रकाशक –श्रीअरविन्दआश्रम

मूल्यांकन योजना		(अधिकतम अंक 75)
विश्वविद्यालयीन परीक्षा	पाँचों इकाई से पाठ्य-विषय अनुसार विकल्प सहित 12-12 अंकों के प्रश्न पूछे जायेंगे । 5 x12 = 60	60 अंक
आन्तरिक (सतत व्यापक मूल्यांकन)	पाठ्यक्रम सम्बन्धित–परियोजना /असाइनमेंट / पेपर प्रेजेटेशन / आवधिक परीक्षण 10 अंक संस्कृत संभाषण (मौखिकी) 5 अंक	15 अंक

Course Outcome
विश्व के प्राचीनतम, तथा भारत के ज्ञानागारभूत ग्रन्थऋग्वेद तथा अन्य वैदिक, पौराणिक साहित्य के अनुशीलन से प्राचीन ज्ञान-सम्पदा का बोध होगा। वैदिक साहित्य में प्रतिपादित विश्वबन्धुत्व, सर्वात्मभाव तथा समत्वचिन्तन के उच्च आदर्शों से मानवीय सद्गुणों का आधान एवं विकास होगा। उपदेशात्मक ग्रन्थ से नैतिक एवं व्यावहारिक ज्ञान की लब्धि होगी। ज्ञानार्जन के साथ उच्चारण एवं भाषिक क्षमता में अभिवृद्धि होगी। आधुनिक युग की संस्कृत रचनाओं की जानकारी प्राप्त होगी।

बी.ए. प्रथम वर्ष

द्वितीय प्रश्नपत्र - प्राचीन एवं आधुनिक साहित्य Paper Code - Y102

पूर्णांक – 60

6 Credit

प्रस्तावित व्याख्या 90

इकाई	पाठ्यविषय	व्याख्यान-संख्या
1	वैदिक एवं पौराणिकसाहित्य - वेद, ब्राह्मण,आरण्यक, उपनिषद्, वेदांगों एवं पुराणों का संक्षिप्त परिचय	20
2	वैदिक साहित्य में विश्वबन्धुत्व, सर्वात्मभाव एवं समत्वचिन्तन। ऋग्वेद, संज्ञानसूक्त(10.191) के मन्त्र सं. – 2,3,4 ऋग्वेद, पुरुषसूक्त का मन्त्र सं.– 2 ऋग्वेद, विश्वेदेवासःसूक्त (1.89) के मन्त्र सं. –6,8 यजुर्वेद 31 वें अध्याय का मन्त्र सं.- 19 यजुर्वेद 36 वें अध्याय का मन्त्र सं.– 18 कठोपनिषद् का शान्तिमन्त्र तथा द्वितीय अध्याय, द्वितीय वल्ली के श्लोक सं. – 9, 10, 12. मुण्डकोपनिषद् का श्लोक सं. 3.1.3 छान्दोग्योपनिषद् का श्लोक सं. 3.14.1	15
3	शुकनासोपदेश– व्याख्या तथा समीक्षात्मक प्रश्न	15

4	हितोपदेशः (मित्रलाभः) – व्याख्या तथा समीक्षात्मक प्रश्न	20
5	आधुनिक संस्कृत कवि-परिचय – अप्पाशास्त्रीराशिवडेकर,पण्डिता क्षमा राव,जगन्नाथ पाठक, श्रीनिवासरथ, जानकीवल्लभ शास्त्री, वेंकटरामराघवन, अभिराजराजेन्द्र मिश्र, डा. राधावल्लभ त्रिपाठी, हर्षदेव माधव, डा. रेवा प्रसाद द्विवेदी, डा.पुष्पा दीक्षित,डा. कामता प्रसाद त्रिपाठी.	20

अनुशंसितग्रन्थ –

1. ऋक्सूक्तसंग्रह – तारिणीश झा, प्रकाशक – प्रकाशन केन्द्र, लखनऊ
2. ऋग्वेदसंहिता - श्रीमन्मोक्षमूलर भट्ट, प्रकाशक –कृष्णदास अकादमी, वाराणसी
3. शुक्लयजुर्वेद संहिता - श्रीरामकृष्ण शास्त्री, प्रकाशक –चौखम्बा विद्याभवन वारासी
4. पुराण-विमर्श - आचार्यबलदेवउपाध्याय, प्रकाशक–चौखम्बाविद्याभवन, वाराणसी
5. वैदिकसाहित्यस्येतिहासः – डा. राजधर मिश्रः, प्रकाशक–श्याम प्रकाशन, जयपुर
6. वैदिकसाहित्यऔरसंस्कृति – आचार्यबलदेवउपाध्याय, प्रकाशक– शारदा मन्दिर, काशी
7. वैदिकसाहित्यऔरसंस्कृति – वाचस्पति गैरोला, प्रकाशक -चौखम्बा संस्कृत प्रतिष्ठान, वाराणसी
8. संस्कृतसाहित्यकाइतिहास–आचार्यबलदेवउपाध्याय, शारदा निकेतन, वाराणसी
9. संस्कृतसाहित्यकासमीक्षात्मक इतिहास– डा. कपिलदेव द्विवेदी
10. कठोपनिषद् , प्रकाशक -गीताप्रेस, गोरखपुर
11. माण्डूक्योपनिषद् , प्रकाशक -गीताप्रेस, गोरखपुर
12. छान्दोग्योपनिषद् , प्रकाशक -गीताप्रेस, गोरखपुर
13. शुकनासोपदेश – प्रकाशक–मोतीलालबनारसीदास, वाराणसी
14. हितोपदेश (मित्रलाभ) - प्रकाशक–मोतीलालबनारसीदास, वाराणसी

15. हितोपदेश (मित्रलाभ) -आचार्य श्रीशेषराज शर्मा रेग्मी,प्रकाशक – चौखम्बा सुरभारती प्रकाशन, वाराणसी

16. हितोपदेश- नारायणराम आचार्य तीर्थ, प्रकाशक -चौखम्बाविद्याभवन, वाराणसी

17. नवस्पन्द सम्पादक – डा. राधावल्लभ त्रिपाठी, प्रकाशक - मध्यप्रदेश हिन्दी ग्रन्थ अकादमी, भोपाल

मूल्यांकन योजना		(अधिकतम अंक 75)
विश्वविद्यालयीन परीक्षा	पाँचों इकाई से पाठ्य-विषय अनुसार विकल्प सहित 12-12 अंकों के प्रश्न पूछे जायेंगे। 5 x12 = 60	60 अंक
आन्तरिक (सतत व्यापक मूल्यांकन)	पाठ्यक्रम सम्बन्धित–परियोजना /असाइनमेंट / पेपर प्रेजेटेशन / आवधिक परीक्षण 10 अंक इकाई 2 (वैदिक साहित्य में विश्वबन्धुत्व, सर्वात्मभाव एवं समत्वचिन्तन) से मौखिकी 5 अंक	15 अंक

कार्य वृत :–दिनांक 03/03/2023 को पूर्वान्ह 12:00 बजे केन्दीय अध्ययन मंडल, भूगोल की बैठक भूगोल अध्ययनशाला, पं. रविशंकर शुक्ल वि.वि., रायपुर में आयोजित हुई जिसमें निम्नानुसार अनुशंसा की गई :–

कार्य सूची – 1 के संदर्भ में सदस्यों द्वारा बी.ए./बी. एस. सी – प्रथम, द्वितीय एवं तृतीय वर्ष, 2023–24 के पाठ्यक्रम के विषय में चर्चा की गई तथा बी.ए./बी. एस. सी. – प्रथम, द्वितीय एवं तृतीय वर्ष, 2022–23 के पाठ्यक्रम में संशोधन कर निम्नलिखित संशोधित पाठ्यक्रम अनुशंसित किया गया –

Brief Summary
3 Year Integrated UG Courses (B.A./B. Sc.) in Geography

B.A. /B.Sc. Part I

The B.A. /B.Sc. Part-I Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows:

Paper - I	Physical Geography
Paper - II	Human Geography
Paper - III	Practical Geography

B.A. /B.Sc. Part-II

The B.A./B.Sc. Part-II Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows:

Paper-I	Economic and Resources Geography
Paper-II	Regional Geography of India
Paper-III	Practical Geography

B.A. /B.Sc. Part III

The B.A. /B.Sc. Part III Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows

Paper – I	Remote Sensing and GIS
Paper - II	Geography of Chhattisgarh
Paper - III	Practical Geography

(Dr. C.P. NAND) (A. BECK) (Dr. S Ambekar)

(Dr. Sheela Shirdey)

Program: B.A./B.Sc.	Class: I Year.	Session : 2023-24

Paper I: Physical Geography (UGeo-0101)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability to: 1. Understand the internal structure of the earth, rocks that compose it and forces within the earth that act to deform it. 2. Analyze how the natural and anthropogenic operating factors affect the development of land forms. 3. Understand about the denudation processes that unceasingly act at the earth's surface to shape land forms and reduce relief. 4. Assess the role of structure, stage and time in shaping the land forms. 5. Identify the Atmospheric pressure, winds humidity, concept of precipitation, its types and understand the Air Masses and Fronts and the Weather Forecasting. 6. Identify the relief of the ocean bottom, temperature, salinity of ocean water, tide, currents coral reef and oceanic resources.

Content of the Course

Unit	Topic
1.	Origin of the Earth, Geological Time Scale, Earth's Interior, Continental Drift Theory (Wegner), Plate Tectonics, Isostasy.
2.	Earth movements: Earthquakes and Volcanoes, Rocks, Weathering, Erosion and Normal cycle of erosion, Evolution of landscapes: Fluvial, Aeolian (Arid and Semi Arid), Glacial, Karst.
3.	Elements of Weather and Climate, Composition and Structure of the Atmosphere. World patterns of Atmospheric Temperature, Pressure, and Winds.
4.	Atmospheric Humidity and Disturbances, Climatic Classification of Koppen, Geographical account of world climate patterns: Equatorial, Monsoon, Desert and Tundra.
5.	Bottom relief of Ocean, Distribution of Temperature and Salinity of Oceans and Seas, Currents and Tides, Ocean Deposition. Law of the Sea.

Learning Resources: Text Books, Reference Books, Other Resources

Suggested Readings:

1. Ahnned, E.: Coastal Geomorphology of India.
2. Chorley, R.. J.: Spatial Analysis in Geomorphology, Methuen, London, 1972.
3. Dayal, P. : A Text book of Geomorphology, R.K. Books, New Delhi.
4. Gautam, Alka : Geomorphology, Sharda Pustak Bhawan, Allahabad.
5. Holms, A.: Principles of Physical Geology, Thomas Nelson, London.
6. Jha, V.C. : Geomorphology, Vasundhara Publication, Gorakhpur.
7. Sparks, B.W. Geomorphology, Longman, London, 1960.
8. Sharma, H.S. (cd.): Perspective in Geomorphology, Concept, New Delhi, 1980.
9. Singh, S : Geomorphology, Prayag Publication, Allahabad, 1998.
10. Steers, J.A. : The Unstable Earth Methuen, London.
11. Thornbury, W.I.). Principles of Geomorphology, John Wiloy, New York, 1960.
12. Strahler, A.N.: Physical Geography, Willey, New York.
13. सिंह.एम.बी.(2001) : भौतिक भूगोल, तारा बुक ऐजेन्सी, वारणासी।
14. सिंह, सविन्द्र (2016) : भौतिक भूगोल, प्रयाग पुस्तक भवन, इलाहाबाद।
15. दयाल, परमे वर (2012) : भौतिक भूगोल, पंच ाील प्रका ान, जयपुर।
16. हुसैन, माजिद (2008) : भौतिक भूगोल, रावत पब्लिके ान, जयपुर।

Suggested equivalent online course: 1. epgp.inflibnet.ac.in 2. virtual lectures available on youtube

Dr. Sheela Shirley

Program: B.A./B.Sc.	Class: I Year.	Session : 2023-24

Paper II: Human Geography (UGeo-0102)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability to: 1. Discuss and describe the major concepts and key principles of Human Geography including place, space, scale and landscape. 2. Appreciate the diversity of the cultural backgrounds and places. 3. Problem solving from a geographic perspective by understanding the role location plays.

Content of the Course

Unit	Topic
1.	Meaning, Definition, Nature and Scope of Human Geography, Man - environment relationship: Determinism, Possibilism, Determinism, Neo-Determinism and Probabilism; Human Development Index (HDI).
2.	Human Races: Formation and Evolution, Characteristics, Classification and Distribution. Human adaptation to environment: Eskimos, Bushman, Pigmy and Masai.
3.	Growth, Density and Distribution of World Population and factors influencing spatial distribution. Over, Under, and Optimum Population; Migration of Population.
4.	Rural Settlements: Characteristics, Types and Regional Pattern, Rural Houses in India, Urban Settlement- Types and Pattern.
5.	Environmental Issues: Global Warming, Climate Change, Acid rain, Deforestation, Desertification, Air, Water and Soil Pollution.

Learning Resources :Text Books, Reference Books, Other Resources

Suggested Readings:

1. Chisholm, M. (1985): Human Geography, 2nd edition, Penguin Books, London.
2. De Blij, H.J.(1996): Human Geography: Culture, Society and Space,. 2nd edition. John Wiley and Sons, New York,
3. Fellman, J. D., Arthur, G., Judith, G., Hopkins, J. and Dan, S. (2007): Human Geography: Landscapes of Human Activities. McGraw-Hill, New York. 10th edition.
4. Haggett, P. (2004): Geography: A Modern Synthesis. 8th edition, Harper and Row, New York.
5. Huggett, R. J. (1998): Fundamentals of Biogeography, Routledge, London.
6. Hussain, M. (1994): Human Geography, Rawat Publications, Jaipur.
7. Johnston, R. J., Gregory, D., Pratt, G. and Watts, M. (2009): The Dictionary of Human Geography. 5th edition, Basil Blackwell Publishers, Oxford.
8. Norton, W. (2008): Human Geography, Oxford University Press, New York. 5th ed.
9. Singh, K. N. and Singh, J. (2001): *Manav Bhugol.* Gyanodaya Prakashan, Gorakhpur. 2nd edition.
10. Singh, L.R. (2005): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad
11. Smith, D. M.(1977): Human Geography- A Welfare Approach, Edward Arnold (Publishers) Ltd., London

Suggested equivalent online course:
epgp.inflibnet.ac.in 2. virtual lectures available on YouTube

Program: B.A./B.Sc.	Class: I Year.	Session : 2023-24

Paper III :Practical Geography (UGeo-0103)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability to: 1. Develop hands on skills in diagrammatic representation of data. 2. Comprehend thematic mapping techniques, its cartographic representation and interpretation. 3. Take up Cartography as a profession.

Content of the Course

Unit	Topic
Section A: Cartography And Statistical Methods	**MM- 25**
1.	Basic concept of Latitude and Longitude. Identification of tropic of Cancer, Capricorn and equator on map, name of country and state. Northern hemisphere and southern hemisphere. Practice on world and India map.
2.	Scale: Statement Scale, Representative Fraction (R.F.), Linear scale – Simple, Diagonal, Comparative, and Time Scales.
3.	Methods of showing relief; Meaning of contour, basic features of Contours line, Hachures; Representation of different landforms by Contours; Conical hill, Plateau, V and U shape valley, Waterfall.
4.	Graphs and Diagram: Triangular graph, Bar Diagram (Simple and Composite and multiple), Circle Diagram, Pie Diagram.
5.	Statistical Technique: Mean Median, Mode
Section B: Surveying	**MM-15**
6.	Chain and Tape Survey. Triangulation method, Open Traverse and Closed Traverse
Section C: Practical Record And Viva Voce	**MM-10**

Learning Resources: Text Books, Reference Books, Other Resources

Suggested Readings:

1. Davis, R.E. and Foote, F.S. (1953): Surveying, 4th edition, McGraw Hill Publication, New York
2. Jones, P.A.(1968): Fieldwork in Geography, Longmans, Green and Company Ltd., First Publication, London
3. Monkhouse, F. J. and Wilkinson, F.J. (1985): Maps and Diagrams. Methuen, London
4. Natrajan, V. (1976): Advanced Surveying, B.I. Publications., Mumbai
5. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5th edition.
6. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.
7. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi,.
8. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
9. Venkatramaiah, C. (1997): A Text Book of Surveying, Universities Press, Hyderabad.
10. षर्मा,जे.पी. (2001) : प्रायोगिक भूगोल, रस्तोगी पब्लिकेषन, मेटूरं
11. मिश्रा, आर.एन.एवं पी.के.षर्मा (2019) : प्रायोगिक भूगोल, रावत पब्लिकेषन्स, जयपुरं
12. तिवारी,आर.सी.एवं सुधाकर त्रिपाठी (2009) : अभिनव प्रायोगात्मक भूगोल, प्रयाग पुस्तक भवनं
13. मॉक हाऊस तथा विल्किन्सन (अनुवाद प्रो. प्रेमचन्द्र अग्रवाल) : मानचित्र तथा आरेख, मध्यप्रदेष हिंदी इलाहबाद ग्रंथ अकादमी भोपालं

Suggested equivalent online course:
1. epgp.inflibnet.ac.in 2. virtual lectures available on you tube

SOCIOLOGY

B.A. PART-I

Paper – I

INTRODUCTION TO SOCIOLOGY

(Paper Code – SO-105)

Maxi. Marks- 75

UNIT-I **Sociology**: Meaning, Nature, Scope, Subject Matter and Significance.
Basic concept: Society, Community, institution, Association, group, Status and role.

UNIT-II **Social Institutions**: Family, Marriage and Kinship.
Culture and Society: Culture, Socialization, The individual and society, social control, norms, values.

UNIT-III **Social Stratification**: Mobility - Meaning forms and theories.
Social Mobility: Meaning forms and theories.

UNIT-IV **Social change**: Meaning and Pattern, types, factors, evolution and progress.

UNIT-V **Social Systems and Processes**: Social System – Meaning, characteristics and elements.
Social process: Meaning, elements, characteristics and types.

Recommended Books:

1 Bottomore T.B., Sociology- A guide to Problems and Literature, Bombay. George Allen and unwin(India) 1972.
2 Inkeles, Alex, What is Sociology ? New Delhi, Prentice Hall of India 1987.
3 Jayram, N- Introdutory Sociology, Madras MaCmillan India 1988.
4 Johnson Harry, M., Sociology of systematic Introduction New Delhi Allied Publishers 1995.

22.2.23
22.2.23
Dr. Preeti Mishra
22.02.2023
(Dr. Nisteer Kaur)
Sushila
Dr. J.L. Patel
22.2.23
22.02.2023
(N.S. EKKA)

SOCIOLOGY
B.A. PART-I
PAPER-II
CONTEMPORARY INDIAN SOCIETY
(Paper Code- SO-106)

Maxi. Marks- 75

UNIT-I **Classical View about Indian Society** :: Verna, Ashram, Karma, Dharma and Purusharth

UNIT-II **The Structure and composition of Indian Society.**
Structure: Village, Towns, Cities and Rural – Urban Linkage.
Compositions: Tribes, Dalits, Women and Minorities.

UNIT-III **Basic Institutions of Indian Society**
Caste system, Joint Family, Marriage and Changing dimensions.

UNIT-IV **Familial Problems:** Dowry, Domestic violence, Divorce, Intra-intergenerational conflict, problem of elderly.

UNIT-V **Folk Culture of Chhattisgarh**- A. Customs, B. Traditions, C. Food Habits and D. Festivals

Recommended Books:

1. Dube, S.C. 1995. Society in India, New Delhi: National Book Trust.
2. Mandelbaum, D.G. 1970. Society in India, Bombay : Popular Prakashan.
3. Shrinivas, M.N. 1973. Social Change in Modern India, California : University of California Press.
4. Shrinivas, M.N. 1973. Social Change Structure, New Delhi : Hindustan Publishing Corporation.
5. Uberoi Patricia, 1993. Familly and Marriage in India, New Delhi : Oxford University press.

Abeda Begum, head of the department . Govt . Kamla devi rathi Girls PG College Rajnandgaon

Head Board of Studies political science hemchand Yadav University.

Head Board of Studies political science Atal Bihari Vajpayee University Bilaspur Chhattisgarh .

Head Board of Studies political science Shahid Mahendra Karma University Jagdalpur Chhattisgarh .

Head Board of Studies political science Sant gahira Guru University Ambikapur Surguja.

Chhattisgarh head of the department political science government EV PG College Korba Chhattisgarh.

Head department political science Government Girls PG College Ambikapur. Chhattisgarh.

Head of the department political science Government Girls College Jagdalpur Chhattisgarh .

Head of the department of political science PG College Surajpur Chhattisgarh.

Professor Anupam Sharma head of the department political science Indira Gandhi tribal University Amarkantak Madhya Pradesh.

Dr. Kamlesh Dube political science Government PG College ramanujganj.

Mrs Anamika Jha assistant professor political science government Kakatiya PG College Jagdalpur Chhattisgarh.

Dr D S Jagat joint director Higher Education Department new Raipur Chhattisgarh.

Business transacted :

1. Members of the Central Board of Studies for Political Science prepared the Syllabus of B.A. The Political Science program consists of three year annual undergraduate program which includes.

B.A - Bachelor of arts

Syllabus is as per the notifications 969/academic/2023/ dated 11/1/23 and 971/academic/2023/ dated 11/1/23 / of the university.

2. **first year students** shall have

- Paper 1st :- Political theory राजनीतिक सिद्धान्त
- Papet 2nd - Indian government and politics भारतीय शासन एवं राजनीति

3- **second year students** shall have

- Paper 1st :- Political thought राजनीतिक चिन्तन
- Papet 2nd - Comparative government and politics ~~भारतीय~~ शासन एवं राजनीति
  - तुलनात्मक

4- **Third year** students shall have

- Paper 1st :- International Politics and foreign policy of India अन्तर्राष्ट्रीय राजनीति एवं भारत की विदेश नीति
- Papet 2nd - Public Administration लोक प्रशासन

बी. ए. प्रथम, प्रश्न पत्र प्रथम **B. A. First Paper 1st** पूर्णांक 75

राजनीतिक सिद्धान्त Political Theory

COURSE OUTCOMES

Theory is the starting point of any social sciences that is why political theory is almost universal in BA part one syllabus of political science.Therefore it is pertinent to make students acquainted with proposed course to the students with fundamental theories of political science.Basic Knowledge of important concepts such as Liberty, Justice, Citizenship, Representation, rule of law . Role of political theory to understand political science and political life as well.

	COURSE SPECIFIC OUTCOMES **After completion of the course, the student shall have a fair idea about**
CSO 1	The meaning of nature and scope and scientific instinct of political science .
CSO 2	The state as a core concept of political science . Its evolution theories and relation with individuals .
CSO 3	The role of liberty and the question of equality in democracy . Evolution of democracy and its theories .
CSO 4	The concept of constitution, separation of powers and theory of representation.
CSO 5	The functional machinery of electoral democracy like political party system and pressure groups. Role of State as welfare agency , and as an agency of social change .

इकाई 1

राजनीति विज्ञान का अर्थ परिभाषाएं - पारम्परिक एवं आधुनिक ,अध्ययन का महत्व । शक्ति, सता - अर्थ, विशेषताएं प्रकार वैधता- अवधारणा , शक्ति सत्ता एवं वैधता का सम्बन्ध । राजनीति विज्ञान की अध्ययन पध्दतियां - परम्परागत एवं आधुनिक । व्यवहारवाद एवं उत्तर व्यवहारवाद ।

Unit 1

Meaning definitions of political science - traditional and modern, importance of the study of political science. Power, Authority - meaning, characteristics, types . Legitimacy - concept, relationship of power, authority and legitimacy. Study methods of political science Traditional and modern. Behaviouralism and post-behaviouralism.

इकाई 2

राज्य : अवधारणा, राज्य का विकास, आवश्यक तत्व | राज्योत्पत्ति के विभिन्न सिद्धान्त, राज्य के सिद्धान्त मार्क्सवादी सिद्धान्त उदारवादी, नव उदारवादी , बहुलवादी, नारीवादी,। राज्य की भूमिका - लोक कल्याणकारी राज्य ।

Unit 2

State: Concept, Development of State, Essential Elements. Various theories of state origin, Theories of state, Marxist, liberal, neo-liberal, pluralist, feminist. Role of the state - Public welfare state.

इकाई 3

सम्प्रभुता : अर्थ,परिभाषा,विशेषताएं , सम्प्रभुता के सिद्धान्त : एकलवादी एवं बहुलवादी । बहुलवाद - अर्थ विशेषताएं । अधिकार : अर्थ,प्रकार, सिद्धान्त । कर्तव्य । स्वतन्त्रता : अर्थ प्रकार, स्वतंत्रता का सकारात्मक एवं नकारात्मक सिद्धान्त | समानता: अर्थ,प्रकार एवं स्वतन्त्रता से सम्बंध । प्रजातन्त्र : अर्थ ,परिभाषाएं प्रजातंत्र के सिद्धान्त ,सफलता के लिए आवश्यक दशाएं,। प्रजातंत्र के समक्ष प्रमुख चुनौतियां । गुण-दोष । प्रत्यक्ष प्रजातन्त्र ।

Unit 3

Sovereignty: Meaning, Definition, Characteristics, Principles of Sovereignty: Legal or Monistic and Pluralist. Pluralism : Meaning ,Features . Rights : Meaning, types major Theories, Duties. Freedom: Meaning Types, Positive and Negative Theory of Freedom. Equality : Meaning type and relation to freedom. Democracy : Meaning definitions Principles of democracy. Necessary conditions for the success of Democracy. Major challenges before democracy. Merits and demerits . Direct democracy.

इकाई 4

शासन के प्रकार एकात्मक व संघात्मक संसदीय व अध्यक्षात्मक, तानाशाही । शासन के अंग कार्यपालिका, व्यवस्थापिका न्यायपालिका शक्ति पृथक्करण का सिद्धान्त व नियंत्रण संतुलन का सिद्धान्त । संविधान अर्थ एवं प्रकार प्रतिनिधित्व के सिद्धान्त एवं निर्वाचन प्रणालियां । फासीवाद, सर्वसतावाद ।

Unit 4

Forms of Government: Unitary and Federal, Parliamentary and Presidential. Dictatorship. Organs of Government : Legislature, Executive and Judiciary. Theory of Separation of Powers and Checks and Balances. Constitution : meaning and kinds. Theories of representation and Electoral Process. Fascism, Totalitarianism .

इकाई 5

लोककल्याणकारी राज्य । दल पद्धति अर्थ प्रकार, प्रमुख सिद्धान्त , गुंण दोष। दबाव समूह अर्थ प्रकार तकनीक । सामाजिक परिवर्तन : अर्थ, विशेषताएं प्रमुख सिद्धान्त । नारीवाद - अवधारणा, प्रमुख दृष्टिकोंण । राष्ट्रवाद : अवधारणा, प्रमुख आयाम ।

Unit 5

Public Welfare State. Party System: meaning, kinds, major theories, merits and demerits. Pressure Groups: meaning, kinds and technique. Social Change : meaning, characteristics, theories. Feminis. Concept, main approaches to feminism. Nationalism: concept, major dimensions .

Suggested readings

1. M.P. Jain (1985) Political Theory, Liberal and Marxian, Authors Guild Publications, Delhi.

2. S.P. Verma (1992) Modern Political Theory, Vikas Publishing House, Pvt. Ltd., New Delhi.

3. R.C. Vermani (1997) An Introduction to Political Theory, Gitanjali Publishing House, New Delhi.

4. Rajeev Bhargava and Ashok Acharya (eds) (2017) Political Theory: An Introduction, Pearson, New Delhi.

5. C. McKinnon (ed.) (2008) Issues in Political Theory Oxford University Press, New York.

6. A. Swift (2001) Political Philosophy: A Beginners Guide for Students and Politicians, Cambridge Press.

7. R. Dahl, I. Shapiro and A.J.Cheibub (eds.) (2003) The Democracy SourceBook, MassaChusetts: MIT Press, Cambridge.

8. O.P. Gauba (2014) An Introduction to Political Theory, MacMillan Publishers, Delhi.

9. Andrew Heywood (2015) Political Theory: An Introduction, Palgrave Macmillan, London.

10. Andrew Shorten (2016) Contemporary Political Theory, Palgrave Macmillan, London.

11. David Held (ed.) (1991) Political Theory Today, Stanford University Press.

12. Sushila Ramaswamy (2015) Political Theory: Ideas & Concepts, PHI Learning Private Limited, Delhi.

13. Adi H. Doctor (1985) Issues in Political Theory, Sterling Publishers Pvt. Ltd. New Delhi

14. A. C. Kapoor (2009) Principles of Political Science, S. Chand Publishing, Delhi.

15. Eddy Asirvatham & K.K. Mishra (2010) Political Theory, S. Chand Publishing Delhi.

16. Vidya Dhar Mahajan (2013) Political Theory (Principles of Political Science), S. Chand Publishing, Delhi.

आशीर्वादम (1985) : राजनीतिक सिद्धांत - एस चन्द एण्ड कम्पनी । नई दिल्ली ।

अंबादत्त पंत हरिमोहन जैन मदन गोपाल (1985) : राजनीतिक सिद्धांत - । सेन्ट्रल पब्लिशिंग हाउस। इलाहाबाद । उ.प्र.

शकील हुसैन (2018) : राजनीतिक सिद्धांत : अवधारणात्मक परिचय । छ.ग. राज्य हिन्दी ग्रन्थ अकादमी . रायपुर, छ. ग

https://youtu.be/o05gcwF3_Mk

Note: Students may consult online Research Articles from JSTOR, swayam, mooc google scholar, google website and other related online websites.

बी. ए. प्रथम प्रश्न पत्र द्वितीय B. A. FIRST PAPER 2nd पूर्णांक 75

भारतीय शासन एवं राजनीति
Indian Government and Politics

COURSE OUTCOMES

Proposed course acquaints the students with values and the struggle of national movement . Explains constitutional development as backdrop of Indian constitution . This course makes students familiar with knowledge and execution of the Indian constitution and political system .

COURSE SPECIFIC OUTCOMES	
After completion of the course, the student shall have a fair idea about	
CSO 1	The values and importance of freedom struggle and constitutional development in the making of Indian constitution and evolution of our democratic system and substantive democracy .

CSO 2	The basic features , fundamental rights , directive principles of state and amendment process of the constitution.
CSO 3	The constitutional provisions and functioning of the union executive and legislature.
CSO 4	The constitutional plan of the Judicial system of the country and state executive.
CSO 5	State legislature to the election commission of India, electoral democratic processes like caste-politics interaction , communalism etc .

इकाई 1

असहयोग आन्दोलन, सविनय अवज्ञा आन्दोलन, भारत छोड़ो आन्दोलन । भारत का संविधानिक विकास , 1909 1919 और 1935 का अधिनियम ।

Unit 1

Non-cooperation Movement, Civil Disobedience Movement, Quit India Movement. Constitutional Development of India Acts of 1909, 1919 and 1935.

इकाई 2

भारतीय संविधान : प्रस्तावना, विशेषताएं, स्रोत, । मौलिक अधिकार, मूल कर्तव्य, नीति निर्देशक तत्व । संविधान संशोधन प्रक्रिया ।

Unit 2:

Constitution of India :Preamble, features, Sources. Schedules,citizenship.Fundamental Rights and Duties, Directive Principles of State Policy. Constitution Amendment Process.

इकाई 3

राष्ट्रपति, उपराष्ट्रपति , मन्त्रिपरिषद् और प्रधानमन्त्री । संसद - लोकसभा और राज्यसभा । सर्वोच्च न्यायालय संगठन कार्य अधिकार , न्यायिक पुरावलोकन । नियंत्रक एवं महालेखा परीक्षक । निर्वाचन आयोग ।

Unit 3:

President, Vice President, Council of Ministers and Prime Minister. Federal Parliament Lok Sabha and Rajya Sabha. Supreme court - Organization Functions, Powers, Judicial Review. Judicial Activism. Election, comptroller and auditor general .

इकाई 4

राज्य विधायिका, राज्यपाल मन्त्रिपरिषद् और मुख्यमन्त्री । राज्य उच्च न्यायालय - संगठन , कार्य अधिकार ।

Unit 4:

Legislature, Executive: Governor, Council of Ministers and Chief Minister. State High Court - Organization , Functions, Rights.

इकाई 5:

केंद्र राज्य संबंध: विधायी, वित्तीय प्रशासकीय । संघ एवं राज्य लोक सेवा आयोग । भारतीय राजनीति के प्रमुख मुद्दे जाति, धर्म, धर्मनिरपेक्षता । पंचायती राज व्यवस्था ।

Unit 5:

Center State Relations: Legislative, Financial, Administrative Comptroller and Auditor General. Union and State Public Service Commission. Major issues of Indian politics Caste, religion, Panchayati Raj system. secularism.

Suggested Readings

1. Rajni Kothari (2011) Politics in India, Orient Black Swan, New Delhi.
2. Rajni Kothari (2013) Caste in Indian Politics (Revised Edition) Orient Black Swan, New Delhi.
3. Bipan Chandra (2000) India after Independence, Penguin Books, New Delhi.
4. Bipan Chandra, Mridula Mukherjee and Aditya Mukherjee (2007) India Since Independence, Penguin Books New Delhi.
5. J.C. Johari (1981) Indian Politics, Vishal Publication, New Delhi.
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B.A. SECOND PAPER 1st बी. ए. द्वितीय प्रश्न पत्र प्रथम

Political Thought राजनीतिक चिन्तन पूर्णांक-75

COURSE OUTCOMES

बी.ए. प्रथम वर्ष

प्रश्न पत्र – प्रथम–सैद्धांतिक

भाग–अ परिचय		
कक्षा : बी.ए. प्रथम वर्ष		सत्रः 2023–24
विषय – संगीत (गायन/वादन –तारवाद्य)		
1	पाठ्यक्रम का कोड	
2	पाठ्यक्रम का शीर्षक	**भारतीय संगीत का इतिहास**
3	पाठ्यक्रम का प्रकार : (कोर कोर्स/इलेक्टीव/जेनेरिक/वोकेशनल)	**कोर कोर्स**
4	पूर्वापेक्षा (Prerequisite) (यदि कोई हो)	इस कोर्स का अध्ययन करने के लिए, छात्र/छात्रा ने कक्षा 12वीं पास किया हो। (सभी संकाय के छात्र/छात्राएँ)
5	पाठ्यक्रम अध्ययन की परिलब्धियाँ (कोर्स लर्निंग आउटकम) (CLO)	भरतीय संगीत भारत की समृद्धशाली सांस्कृतिक परंपरा का विशेष अंग है। यह प्राचीन संगीत मंदिरों एवं राज्याश्रय में पुष्पित–पल्लवित हुआ है जो राजाओं एवं राज्यों के संरक्षण में समृद्ध होकर सम्पूर्ण विश्व में प्रतिष्ठित है। यह पाठ्यक्रम भारत के इस क्षेत्र के विद्यार्थियों को प्राचीन संस्कृति से अवगत करायेगा। छात्रों का बौद्धिक एवं शारीरिक विकास होगा साथ ही विद्यार्थी संस्कारित भी होंगे। निम्न बिन्दुओं के माध्यम से पाठ्यक्रम का ज्ञान होगा – • प्राचीन भारतीय संस्कृति से परिचय। • संस्कृत में श्लोकों को बोलने एवं लिखने की क्षमता का विकास। • संगीत का आधारभूत ज्ञान । • स्थानीय संगीत कला का परिचय । • संगीत के विविध आयामों का ज्ञान ।
6	क्रेडिट अंक	**03**
7	कुल अंक	**50** (न्यूनतम – 17)
8	पाठ्यक्रम संख्या	**45 व्याख्यान** **(15 कालखण्ड = 01 क्रेडिट अंक)**

	भाग – ब पाठ्यक्रम की सामग्री		
अध्याय सं0	अध्याय का नाम		अध्याय की सामग्री
1	पारिभाषिक शब्द एवं स्पष्टीकरण		1) नाद 2) श्रुति 3) स्वर 4) सप्तक 5) थाट 6) राग 7) पकड़ 8) अलंकार 9) वादी स्वर 10) संवादी स्वर 11) अनुवादी स्वर 12) विवादी स्वर।
2	स्वरलिपि पद्धतियों का अध्ययन		1) स्वरलिपि की परिभाषा, आवश्यकता 2) भातखण्डे स्वरलिपि पद्धति का अध्ययन। 3) पलुस्कर स्वरलिपि पद्धति का अध्ययन।

3	संगीतज्ञों का संक्षिप्त जीवन परिचय एवं सांगीतिक योगदान		1) पण्डित विष्णु नारायण भातखण्डे। 2) पण्डित विष्णु दिगम्बर पलुस्कर। 3) स्वामी हरिदास 4) तानसेन 5) बैजु 6) अमीर खुसरो
4	अ) पाठ्यक्रम के रागों का शास्त्रीय वर्णन		अ) पाठ्यक्रम के निर्धारित रागों का संपूर्ण परिचय, दोहा, आरोह, अवरोह, पकड़ सहित – 1. राग–यमन 2. राग – बिलावल 3. राग – खमाज 4) राग – काफी 5) राग – भूपाली 6) राग – भैरव।
	ब) पाठ्यक्रम के तालों का ठाह तथा दुगुन लय में लेखन		ब) निर्धारित तालों का ताललिपि में लेखन – 1. ताल – दादरा 2. ताल – कहरवा 3. ताल – त्रिताल 4) ताल – रूपक 5) ताल – झपताल।
5	छत्तीसगढ़ के लोक संगीत का सामान्य अध्ययन		1) छत्तीसगढ़ का लोक संगीत एवं विशेषताएँ। 2) ददरिया एवं सुवा गीत का परिचय एवं विशेषताएँ।

भाग –स

अनुशंसित अध्ययन सामग्री/संसाधन

पाठ्य पुस्तकें/संदर्भ पुस्तकें/ग्रंथ/अन्य पाठ्य संसाधन/अनुशंसित सहायक पुस्तकें/पाठ्य सामग्री

1. हिन्दुस्तानी संगीत क्रमिक पुस्तकमालिका (भाग –1 एवं भाग 2) ले0 –पं0 वि0 ना0 भातखण्डे, (हाथरस)
2. संगीत विशारद – वसंत, (हाथरस)
3. संगीत शास्त्र दर्पण (भाग 1 एंव 2) ले0 – शांति गोवर्धन
4. राग परिचय (भाग 1 एवं 2) ले0 – हरिशचन्द्र श्रीवास्तव
5. अभिनवगीतांजली (भाग 1 एवं 2) ले0 – पं0 रामाश्रय झा
6. संगीतमणी (भाग 1 एवं 2) ले0 – महारानी शर्मा
7. रागबोध (भाग 1, 2 एवं 3) ले0 – बी0 आर0 देवधर
8. भारतीय संगीत का इतिहास ले0 – उमेश जोशी – डॉ0 एस0 एस0 परांजपे
9. संगीत शास्त्र (भाग 1, 2 एवं 3) ले0 – महेश नारायण शर्मा
10. सितार मालिका ले0 – भगवतशरण शर्मा
11. ताल प्रकाश ले0 – भगवतशरण शर्मा
12. हमारे संगीत रत्न – संपादक – लक्ष्मीनारायण गर्ग

Suggested Links :-

1. Arambhika on Facebook live
2. Swaranjali Kala Sadhak, Gwalior
3. Swar Sanskar live on Facebook

भाग – द

अनुशंसित मूल्याँकन विधियाँ

अनुशंसित सतत् मूल्याँकन विधियाँ अधिकतम अंक : 50 सतत् व्यापक मूल्याँकन (CCE) अंक : 05 विश्वविद्यालय परीक्षा (UE) अंक : 45		
आंतरिक मूल्याँकन	क्लास टेस्ट	5
सतत् व्यापक मूल्याँकन (CCE)		45
कुल अंक		50
समय – 3:00 घण्टे		

बी.ए. प्रथम वर्ष

प्रश्न पत्र : द्वितीय–सैद्धांतिक

भाग– अ परिचय		
कक्षा : बी.ए. प्रथम वर्ष		सत्रः 2023–24
विषय : संगीत (गायन/वादन–तारवाद्य)		
1	पाठ्यक्रम का कोड	
2	पाठ्यक्रम का शीर्षक	भारतीय संगीत के सिद्धान्त
3	पाठ्यक्रम का प्रकार : (कोर कोर्स/इलेक्टिव/जेनेरिक/वोकेशनल)	कोर कोर्स
4	पूर्वापेक्षा (Prerequisite) (यदि कोई हो)	इस कोर्स का अध्ययन करने के लिए, छात्र/छात्रा ने कक्षा 12वीं पास किया हो। (सभी संकाय के छात्र/छात्राएँ)
5	पाठ्यक्रम अध्ययन की परिलब्धियाँ (कोर्स लर्निंग आउटकम) (CLO)	• प्रस्तुत पाठ्यक्रम का उद्देश्य विद्यार्थियों में संगीत के प्रति रूचि एवं जागरूकता तथा तकनीकि सामान्य ज्ञान में वृद्धि करना है। • शास्त्रीय संगीत के सामान्य तकनीकी सिद्धांतों से परिचय। • स्थानीय संगीत का सामान्य परिचय। • स्वर, लय एवं ताल का ज्ञान।
6	क्रेडिट अंक	03
7	कुल अंक	50 (न्यूनतम–17)
8	पाठ्यक्रम संख्या	45 व्याख्यान (15 कालखण्ड = 01 क्रेडिट अंक)

भाग – ब

पाठ्यक्रम की सामग्री

अध्याय संख्या	अध्याय का नाम		अध्याय की सामग्री
1	अ) पारिभाषिक शब्द एवं स्पष्टीकरण ब) गायकों के गुण–दोष		1) तिहाई 2) आलाप 3) तान 4) आश्रय राग 5) गमक 6) मीण्ड 7) सूत 8) वक्र स्वर 9) वर्ज्य स्वर संगीत शास्त्र ग्रंथों के अनुसार गायकों के गुण–अवगुणों का वर्णन।
2	राग समय सिद्धांत		1) राग समय सिद्धांत की व्याख्या 2) स्वर वर्ग के आधार पर राग गायन–वादन का समय निर्धारण 3) पूर्वांग – उत्तरांग, पूर्व राग – उत्तर राग 4) संधि प्रकाश राग 5) परमेल प्रवेशक राग।

3	राग रचना विधि		1) सम्पूर्ण जाति से राग निर्माण विधि 2) षाडव जाति से राग निर्माण विधि 3) औडव जाति से राग निर्माण विधि।
4	अ) ताल के तकनीकी अवयवों का सामान्य अध्ययन ब) लय का सामान्य अध्ययन		1) ताल की परिभाषा 2) मात्रा 3) बोल 4) विभाग 5) सम 6) ताली 7) खाली 8) आर्वतन। लय की परिभाषा, लय के प्रकार – मध्य लय, विलंबित लय, द्रुत लय।
5	छत्तीसगढ़ का लोक संगीत		1) छत्तीसगढ़ के लोक संगीत का सामान्य परिचयं 2) डण्डा गीत एवं राऊत नाचा –गीत का सामान्य अध्ययन एवं विशेषताएँ।

भाग – स

अनुशंसित अध्ययन संसाधन

पाठ्य पुस्तकें/संदर्भ पुस्तकें/ग्रंथ/अन्य पाठ्य संसाधन/अनुशंसित सहायक पुस्तकें/पाठ्य सामग्री

1. हिन्दुस्तानी संगीत क्रमिक पुस्तक मालिका (भाग –1 एवं भाग 2) ले0 –पं0 वि0 ना0 भातखण्डे, (हाथरस)
2. संगीत विशारद – वसंत, (हाथरस)
3. संगीत शास्त्र दर्पण (भाग 1 एंव 2) ले0 – शांति गोवर्धन
4. राग परिचय (भाग 1 एवं 2) ले0 – हरिशचन्द्र श्रीवास्तव
5. अभिनवगीतांजली (भाग 1 एवं 2) ले0 – पं0 रामाश्रय झा
6. संगीतमणी (भाग 1 एवं 2) ले0 – महारानी शर्मा
7. रागबोध (भाग 1, 2 एवं 3) ले0 – बी0 आर0 देवधर
8. भारतीय संगीत का इतिहास ले0 – उमेश जोशी – डॉ0 एस0 एस0 परांजपे
9. संगीत शास्त्र (भाग 1, 2 एवं 3) ले0 – महेश नारायण शर्मा
10. सितार मालिका ले0 – भगवतशरण शर्मा
11. ताल प्रकाश ले0 – भगवतशरण शर्मा
12. हमारे संगीत रत्न – संपादक – लक्ष्मीनारायण गर्ग

भाग – द

अनुशंसित मूल्याँकन विधियाँ

अनुशंसित सतत् मूल्याँकन विधियाँ अधिकतम अंक : 50 सतत् व्यापक मूल्याँकन (CCE) अंक : 05 विश्वविद्यालय परीक्षा (UE) अंक : 45		
आंतरिक मूल्याँकन	क्लास टेस्ट	5
सतत् व्यापक मूल्याँकन (CCE)		45
कुल अंक		50
समय – 3:00 घण्टे		

बी.ए. प्रथम वर्ष

प्रश्न पत्र : प्रायोगिक

भाग– अ परिचय		
कक्षा : बी.ए. प्रथम वर्ष		सत्रः 2023–24
विषय – संगीत (गायन/वादन–तारवाद्य)		
1	पाठ्यक्रम का कोड	
2	पाठ्यक्रम का शीर्षक	क्रियात्मक संगीत
3	पाठ्यक्रम का प्रकार : (कोर कोर्स/इलेक्टिव/जेनेरिक/इलेक्टिव/वोकेशनल)	कोर कोर्स
4	पूर्वापेक्षा (Prerequisite) (यदि कोई हो)	इस कोर्स का अध्ययन करने के लिए, छात्र/छात्रा ने कक्षा 12वीं पास किया हो। (सभी संकाय के छात्र/छात्राएँ)
5	पाठ्यक्रम अध्ययन की परिलब्धियाँ (कोर्स लर्निंग आउटकम) (CLO)	• पाठ्यक्रम के निर्धारित रागों एवं तालों का परिचय। • स्वरलिपियों के तकनीकी पक्ष की जानकारी। • हिन्दुस्तानी संगीत पद्धति के 10 थाटों एवं स्वरों का परिचय। • अपने वाद्ययंत्र की संपूर्ण जानकारी, रखरखाव एवं स्वर मिलाने की तकनीक से परिचय।
6	क्रेडिट अंक	04 (60 कालखण्ड)
7	कुल अंक	50 न्यूनतम अंक : 17

भाग – ब – पाठ्यक्रम की सामग्री	
क्रम संख्या	विषय
1	पाठ्यक्रम के निर्धारित रागों का अध्ययन – 1) राग –यमन 2) राग – बिलावल 3) राग –खमाज 4) राग – काफी 5) राग– भूपाली 6) राग – भैरव।
2	पाठ्यक्रम के निर्धारित ताल का अध्ययन – 1) ताल – दादरा 2) ताल – कहरवा 3) ताल–त्रिताल 4) ताल – रूपक 5) ताल – झपताल
3	राग यमन, राग बिलावल, राग खमाज, राग काफी, राग भूपाली, राग भैरव में 10–10 अलंकारों का अभ्यास।
4	निर्धारित रागों में सरगम एवं लक्षणगीतों का गायन/वादन अभ्यास।
5	निर्धारित रागों में मध्यलय खयाल/रजाखानी गत का गायन/वादन अभ्यास।
6	निर्धारित रागों के मध्यलय अथवा गत के 3–3 आलाप एवं तानों का गायन/वादन अभ्यास।
7	पाठ्यक्रम के किसी एक राग में तराना/द्रुतलय का गायन/वादन दुगुनलयकारी सहित।
8	निर्धारित तालों का हाथ पर ताली–खाली के प्रदर्शन का दुगुनलयकारी सहित अभ्यास।
9	अपने क्षेत्र में गाए जाने वाले लोक संगीत के किसी एक शैली के लोकगीत की प्रस्तुति (गायन/वादन)
10	राष्ट्रगीत, राष्ट्रगान एवं एक भजन का गायन अथवा वादन।
11	छत्तीसगढ़ के राज्य गीत "अरपा पैरी के धार....." का गायन/वादन।

B.A. First Year

Paper-I Theory

PART- 'A' INTRODUCTION		
Class – B.A. – I Year		**Session : 2023–24**
Subject - Music (Vocal/ Instrumental - String Instruments)		
1	**Course Code**	
2	**Course Title**	**History of Indian Music**
3	**Course Type: (Core Course/Elective/Generic/Vocational)**	**Core course**
4	**Prerequisite (Prerequisite) (if any)**	To study this course, the student must have passed class 12th. (Students of all Faculties)
5	**Course Learning Outcome (CLO)**	Indian music is a special part of India's rich cultural tradition. It has flourished in ancient musical temples and kingdoms, which is rich in the patronage of kings and kingdoms and is reputed in the whole world. This course will make the students of this region of India aware of the ancient culture. There will be intellectual and physical development of the students as well as the students will be cultured. The knowledge of the curriculum will be through the following points- • Introduction to ancient Indian culture. • Development of ability to speak and write verses in Sanskrit. • Basic knowledge of music. • Introduction to local music. Knowledge of various dimensions of music.
6	**Creadit Marks**	**03**
7	**Total Marks**	**Max. - 50 Min.marks- 17**
8	**Course Number**	**45 Lacture** **(15 Period = 01 credit marks)**
	PART – B **Course Content**	

Unit	Chapter Name		Chapter Contents
1	Defination and Explanations		1) Naad 2) Shruti 3) Swara 4) Saptak 5) Thata 6) Raga 7) Pakad 8) Alankar 9) Vaadi Swar 10) Samvadi Swar 11) Anuvadi Swar 12) Vivadi Swar.
2	study of Notation systems		1) Definition, need of notation 2) Study of Bhatkhande Notation system 3) Study of Paluskar Notation system.
3	Short biography and musical contribution of musicians		1) Pandit Vishnu Narayan Bhatkhande. 2) Pandit Vishnu Digambar Paluskar. 3) Swami Haridas 4) Tansen 5) Baiju 6) Ameer Khusaro.
4	a) Classical description of the ragas of the course		a) Complete introduction of the prescribed ragas of the course, along with Doha, Aroh, Avaroh, Pakad - 1. Raga Yaman 2. Raga Bilaval 3. Raga Khamaj 4) Raga Kafi 5) Raga Bhupali 6) Raga Bhairava.

	b) Writting of prescribed Talas in Taallipi with Dugun layakari		B) Writing the prescribed talas in taallipi- 1. Taal Dadra 2. Taal Kaharwa 3. Taal Trital 4) Taal Rupak 5) Taal Jhaptal.
5	General Studies of Folk Music of Chhattisgarh		1) Chhattisgarhi folk music and characteristics. 2) Introduction and characteristics of Dadria and Suva geet.

PART – C
Recommended Study Material/Resources Text Books / Reference Books / Texts / Other Text Resources / Recommended Support Books / Text Materials

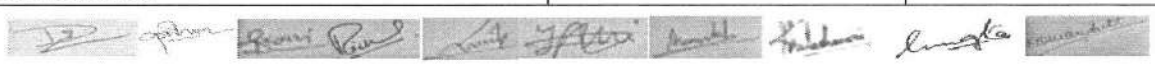
1. Hindustani Sangeet Kramik Pustak malika (Part-1 & Part 2) by -Pt.V.N.Bhatkhande, (Hathras)
2. Sangeet visharad-Vasant, (Hathras)
3. Sangeet Shastra Darpan (Part 1 & 2) by – Shantib Govardhan
4. Raag Parichay (Part 1 and 2) by - Harishchandra Shrivastava
5. Abhinvageetanjali (Part 1 & 2) by - Pt. Ramashray Jha
6. Sangeetmani (Part 1 & 2) by -Maharani Sharma
7. Ragabodh (Part 1, 2 and 3) by - B. R. Deodhar
8. History of Indian Music by –Umesh Joshi- Dr. S.S. Paranjpe
9. Sangeet Shastra (Part 1, 2 & 3) by-Maheshnarayan Sharma
10. Sitar Malika by - Bhagwatsharan Sharma
11. Talprakash by - Bhagwatsharan Sharma
12. Hamare Sangeet Ratna – editor- Laxminarayan Garg

Suggested Links :-

1. Arambhika on Facebook live
2. Swaranjali Kala Sadhak, Gwalior
3. SwarSanskar live on Facebook

PART- D
Recommended Evaluation Methods

Recommended Continuous Evaluation Methods Maximum Marks: 50 Continuous comprehensive evaluation (CCE) Marks : 05 University Exam (UE) Marks : 45		
Internal assessment	Class Test	05
Continuous Comprehensive Evaluation (CCE)		45
Total Marks		50
Time : 3.00 hrs.		



B.A. FIRST YEAR

Paper II - Theory

PART – 'A' Introduction		
Class – B.A.-I Year		Session : 2023–24
Subject - Music (Vocal/ Instrumental - String Instruments)		
1	**Course Code**	
2	**Course Title**	**Theory of Indian Music**
3	**Course Type: (Core Course/Elective/Generic/Vocational)**	**Core course**
4	**Prerequisite (Prerequisite) (if any)**	To study this course, the student must have passed class 12th. (Students of all Faculties)
5	**Course Learning Outcome (CLO)**	• The objective of the present course is to increase the interest and awareness of music and technical general knowledge in the students. • Introduction to the general technical principles of classical music. • General introduction to local music. • Knowledge of tone, rhythm and taal.
6	**Creadit Marks**	**03**
7	**Total Marks**	**Max. Marks 50 Min. Marks - 17**
8	**Course Number**	**45 Lecture** **(15 period = 01 Credit marks)**

PART – B

Course Content

Unit	Chapter Name		Chapter Contents
1	a) Definations and Explanations. b) Merit & De-merits of singers		a) 1) Tihai 2) Aalap 3) Taan 4) Ashray Raga 5) Gamak 6) Meend 7) Soot 8) Vakra Swar 9) Varjya Swar b) Merit & De-merits of singers according to the Sangeet Shastragranthas.
2	Time theory of Ragas		1) Illustration of Raga Time theory 2) Determination of Raga Gayan-Vadana on the basis of swara category 3) Purvanga-Uttrang, Poorva raga-Uttar raga 4) Sandhi-Prakash raag 5) Paramelpraveshak raga.
3	Process of Raga Formation		1) Raga Formation from Sampoorna Jati 2) Raga Formation from Shadja jati 3) Raga Formation from Audva jati.

4	a) General study of the technical components of Taala b) General study of laya		A.1) Definition of Taal 2) Matra 3) Bol 4) Vibhag 5) Sam 6) Tali 7) Khali 8) Avartana. B) Definition of laya, types of layas- Madhya laya, vilambit laya, Drut laya.
5	Folk music of chhattisgarh		1) General Introduction to the Folk Music of Chhattisgarh 2) General study and characteristics of Danda Geet and Rautnacha-Geet.

PART – C

Recommended Study Material/Resources Text Books / Reference Books / Texts / Other Text Resources / Recommended Support Books / Text Materials

1. Hindustani Kramik Pustak malika (Part-1 & Part 2) by - Pt.V.N.Bhatkhande, (Hathras)
2. Sangeet visharad-Vasant, (Hathras)
3. Sangeet Shastra Darpan (Part 1 & 2) By – Shanti Govardhan
4. Raag Parichay (Part 1 and 2) By - Harishchandra Shrivastava
5. Abhinavgeetanjali (Part 1 & 2) By - Pt. Ramashray Jha
6. Sangeet Shastra Darpan (Part 1 & 2) By – Shanti Govardhan
8. Sangeetmani (Part 1 & 2) By-Maharani Sharma
9. Ragabodh (Part 1, 2 & 3) By - B. R. Deodhar
10. History of Indian Music By-Umesh Joshi- Dr. S.S. Paranjpe
11. Sangeet Shastra (Part 1, 2 & 3) By-Maheshnarayan Sharma
12. Sitar Malika By-Bhagvatsharan Sharma
13. Talprakash By-Bhagvatsharan Sharma
14. Hamare Sangeet Ratna - editor- Laxminarayan Garg

PART- D

Recommended Evaluation Methods

Recommended Continuous Evaluation Methods Maximum Marks: 50 Continuous comprehensive evaluation (CCE) Marks : 05 University Exam (UE) Marks : 45		
Internal assessment	Class Test	05
Continuous Comprehensive Evaluation (CCE)		45
Total Marks		50
Time : 3.00 hrs.		

B.A. First Year
Paper : Practical

PART – 'A' Introduction		
Class – B.A.-I Year		Session : 2023–24
Subject: Music (Vocal/Instrumental-String Instruments)		
1	**Course Code**	
2	**Course Title**	**Practical Music**
3	**Course Type: (Core Course/Elective/Generic/Vocational)**	**Core course**
4	**Prerequisite (if any)**	To study this course, the student must have passed class 12th. (Students of all Faculties)
5	**Course Learning Outcome (CLO)**	• Introduction to the prescribed chords and locks of the course. • Knowledge of technical aspects of scripts. • Introduction to 10 Thaats and Swaras of Hindustani Music System. • Familiarity with your instrument's thorough knowledge, maintenance and tuning techniques.
6	**Creadit Marks**	**04 (60 Period)**
7	**Total Marks**	**Max. Marks -50 Min. marks - 17**
		15 periods = 1 credit marks

PART B - COURSE CONTENT	
S.No.	**Subject**
1	Study of Prescribed Ragas 1) Raga Yaman 2) Raga Bilaval 3) Raga Khamaj 4) Ra a-Kafi 5) Raga Bhupali 6) Raga Bhairava.
2	Study o Prescribed Talas- 1) Taal Dadra 2) Taal Kaharwa 3) Taal Trital 4) Taal Rupak 5) Taal Jhaptal
3	Practice of 10-10 Alankars in Raga Yaman, Raga Bilawal, Raga Khamaj, Raag kafi, Raga Bhupali, Raga Bhairava.
4	Sargam and lakshan geet in above prescribed ragas.
5	Madhyalay Khayal / Razakhanigat in above prescribed ragas.
6	3-3 aalaps and taanas/Todas of Madhyalay Khayal and Madhyalaya gat in above prescribed ragas.
7	Practice of prescribed Talas (Tali-Khali) on hand and writing of Talas in tallipi with Dugunlayakari.
8	Presentation of one local folk song of one genre of folk music sung in your area
9	Singing or playing of National anthem, National Song and Bhajan.
10	Singing/Playing of state song "Arpa pairi ke dhar..."
11	Any one Tarana/Dhrutgat of any one raga of prescribed course with dugunlayakari.

PART – 'C'

Discipline Study Resources Textbooks/ Reference Books/Other Resources

1. Bhatkhande Sangeet Shastra, By.-V. N. Bhatkhande, Sangeet Karyalaya, Hathras (U.P.)
2. Tan-Malika, By-Rajabhaiyya Punchhwale. (Part 1,2,3,4 & 5)
3. Hindustani Sangeet Kramik Pustak malika (Part-1, 2, 3, 4, 5 & 6) By-Pt. V. N. Bhatkhande, (Hathras)
4. Sangeet Visharad-Vasant, (Hathras)
5. Sangeet Shastra Darpan (Part 1, 2 & 3) By – Shanti Govardhan
6. Raagparichay (Part 1, 2 and 3) By - Harishchandra Shrivastava
7. Abhinavgeetanjali (Part 1, 2 & 3) By - Pt. Ramashray Jha
8. Sangeetmani (Part 1, 2 & 3) By-Maharani Sharma
9. Ragabodh (Part-1, 2, 3 & 4) By – B.R. Deodhar
10. History of Indian Music By-Umesh Joshi- Dr. S.S. Paranjpe
11. Sangeet Shastra (Part-1, 2, 3 & 4) By-Maheshnarayan Sharma
12. Sitar Malika By-Bhagvatsharan Sharma
13. Talprakash By-Bhagvatsharan Sharma
14. Hamare Sangeet Ratna - editor Laxminarayan Garg

Suggested Links :-

1. Arambhika on Facebook live
2. Swaranjali Kala Sadhak, Gwalior
3. SwarSanskar live on Facebook

Part – 'D' **Discipline Study Resources**			
RecommendedContinuous Evaluation Methods Highest Marks: 50 Minimum: 17 Continuous Comprehensive Assessment (CCE) Marks: 05 University Examination (UE) Marks: 45			
Internal assessment	Marks	External assessment	
ClassTest & Oral/Performance	05	Experimental Oral, Demonstration (Vocal/Playing)	40
Attendance / Projectwork / Assignment	05		
Total marks	10	Total marks (10+40)	50

Part A : Introduction

Programme Certificate Course	Class B.A./B.Sc. 1st Year	Year 2023	Session

1. Course Code : **ANTH-01T**
2. Course Title : **INTRODUCTION TO BIOLOGICAL ANTHROPOLOGY**
3. Course Type : **THEORY**
4. Course Objective : The Course is designed to teach basics and fundamentals of biological anthropology and its scope. The course aims to sharpen the skills of the student so that they can explain biological diversity observed in human species. The students will learn about primate and human evolution, primate behavior and social diversity amongst the human populations. Related practical are an integral part of this Course.
5. Course Learning Outcome :
   - The students will learn about various theories related to human evolution and variation. They will learn about history of Physical Anthropology and its applications.
   - They will learn about relationship between non-human and human primates. They will learn about the origin of hominoid group, distribution and characteristics of extinct hominids and the process of hominization.
   - Some basic knowledge of genetics is also imparted through this paper.
   - From the practical components they will understand Craniometric measurements, study various parts of human body which is useful in studying evolutionary changes in modern humans.

1. Credit Value : Theory-04
2. Total Marks : Maximum Marks 50 Minimum Marks 17

Part B : Content of the Course

1. Total Units : 05
2. Total Lectures : 60

Unit	Topics	No. of Lectures
Units I, II, III, IV & V	Syllabus	12 Lectures each unit

Unit – I

- History, meaning, aims, scope of Physical Anthropology and its applications.
- Organic evolution : Meaning and evidences of organic evolution.
- Theories of Organic evolution : Lamarckism, Neo-Lamarckism, Darwinism, Neo-Darwinism and synthetic theory.

Unit – II

- Man's position in animal kingdom.

- Classification and characteristics of living primates (Prosimi and Anthropoidea).
- Comparative anatomy and behavior of human and non human primates.

Unit - III

- Miocene Hominoids : Ramapithecus.
- Pleistocene Hominoids : Australopithecus, Homo erecuts (Pithecanthropus & Sinanthropus), Neanderthal, Homo sapiens (Cromagnon, Grimaldi and Chancelade).

Unit – IV :

- Concept of Race : Meaning and definition.
- Race Formation.
- Criteria of racial classification (Anthrosopic, Anthropometric and genetical traits).
- UNESCO statement, Racisim.
- Major races of the world and their distribution (Caucasoid, Negroid & Mongoloid)
- Racial Classification of Indian population : Risley and B.S. Guha.

Unit – V

- Mendelism.
- Chromosome : Types and morphology of human chromosome.
- Structure of DNA & RNA.
- Types of inheritance : Autosomal (Dominant and recessive), Sex linked (Dominate and recessive).

Part C : Learning Resources

1. Ashley, Montague, Concept of Race.
2. Barnouw, V. 1979, Anthropology : A General Introduction, The DOrsey Press Illionis.
3. Das, B.M. 1985, Outlines of Physical Anthropology, Kitab Mahal, New Delhi.
4. Harrison, G.A., Weiner, J.S. Tanner, J.M. and Barnicot, N.A. Human Biology : An Introduction to Human Evolution, Variation and Growth, Clarenden Press, Oxford.
5. Hooton, E.A. Up from the Ape, The Macmillan Co., New York.
6. M. Ember and Ember. Anthropology
7. Sarkar S.S. Aboriginal races of India.
8. Sarkar, R.M. 1976, Fundamentals of Physical Anthropology, Blackie (India).
9. Shrivastav, A.R.N. 1994, Sharirik Manav Vigyan (in Hindi), Gyandeep Prakashan, Allabhabad.
10. Shukla, B.R.K. and Rastogi, S. Physical Anthropology and Human Genetics : An Introduction, Palka Prakashan, Delhi.ettner-Janusch, J. Origins of Man, Wiley Eastern Pvt. Ltd. New Delhi.

Part D : Assessment and Evaluation

University Exam. (UE) : Max. Marks : 50 Marks

Part A : Introduction

Programme Certificate Course	Class B.A./B.Sc. 1st Year	Year 2023	Session

1. Course Code : **ANTH-02T**
2. Course Title : **INTRODUCTION TO SOCIAL-CULTURAL ANTHROPOLOGY**
3. Course Type : **THEORY**
4. Course Objective : The Course introduces ideas about "Culture" and "Society" in order to understand their meaning and what role they play in shaping human lives. Explores some basic concept, methods and characteristics of social-cultural Anthropology. Understand nature and meaning of social, religious, political and economic institution. The objective of the paper is to introduce the students about foundation of social-cultural Anthropology and also to familiarize the students with basic categories which have emerged due to comparison of groups and institution in the global context particularly the simpler societies.
5. Course Learning Outcome :
   - The Students will learn about the scope and relevance of Social-Cultural Anthropology in relationship with other branches of anthropology.
   - The Students will learn about concept of society, culture and social institutions.
   - They will also learn about economic social and political organization.
   - Understand and describe basic concepts and methods of social-cultural Anthropology, along with its past and future.
   - Comparative study of culture and society of different ethnic groups.

1. Credit Value : Theory-04
2. Total Marks : Maximum Marks 50 Minimum Marks 17

Part B : Content of the Course

1. Total Units : 05
2. Total Lectures : 60

Unit	Topics	No. of Lectures
Units I, II, III, IV & V	Syllabus	12 Lectures each unit

Unit – I

- Meaning, aims and scope of social-cultural Anthropology.
- Social Anthropology : Definition, scope and importance.
- Ethnology : Definition, scope and importance.
- Linguistics Anthropology : Definition, Structure and Linguistic Family

- Relation of Social-Cultural Anthropology with sociallogy, psychology, history, economics and demography.

Unit – II

- Culture : Definition, characteristics and component of culture.
- Society : Definition, characteristics, importance and types of society.
- Community : Definition, characteristics, importance.
- Institution : Definition, characteristics, importance.

Unit - III

- Marriage : Meaning, aims and types of marriage, marriage rules, preferential marriage and ways of acquiring mates.
- Family : Definition, Characteristics, types and function of family.
- Kinship : Definition, types, kinship terminology, degree of kinship. kinship usage.
- Status and Role : Definition and Types.

Unit – IV :

- Religion : Definition, Characteristics and function.
- Magic : Definition, types and elements of magic.
- Custom : Definition, origins, and role.
- Mythology : Definition, characteristics and importance.

Unit – V

- Economic organization: Characteristics of simple economy, stages of economic development. Barter and ceremonial exchange.
- Political organization: State and stateless society, primitive law and justice.

Part C : Learning Resources

1. A. N. Sharma. Bharatiya Manav Vigyan.
2. Davis, K. 1981. Human society, new delhi : Surjeet publications.
3. Durkheim, E. 2013. The rules of sociallogical method and selected texts on sociallogy and its method edited by steven luke (Second Edition). Pulgrave macmillan. 20-49, 78-100.
4. Ember, C.R. et. al. 2011. Anthropology, New Delhi, Dorling Kindersley.
5. Long, G. 1956. Concept of Status and role in Anthropology. Their definition and use. The American catholic sociallogical Review. 17 (3) : 206-218.
6. Makhan Jha : Samajik Manav Vigyan.
7. Nadeem Hasnain. Indian Anthropology.
8. Vandana Sharma & Ramesh Choubey : Samajik Sanskritik Manav Vigyan.

Part D : Assessment and Evaluation

University Exam. (UE) : Max. Marks : 50 Marks

Part A : Introduction

Programme Certificate Course	Class B.A./B.Sc. 1st Year	Year 2023	Session

1. Course Code : **ANTH-01P**
2. Course Title : **PRACTICAL IN HUMAN ANATOMY AND ANTHROPOMETRY**
3. Course Objectives : The objective of this practical course is to introduce the student with the human skeleton system and its importance and to learn anthropometric techniques used in living and non-living human for assessment of ethnic variation. This will be helpful to make student skill-full for further anthropological study and research.
4. Course Type : Practical

1. Credit Value : Practical - 02
2. Total Marks : Maximum Marks 50 Minimum Marks 17

Part B : Content of the Course

1. Total Units :
2. Total Lectures : 30

Unit	Topics	No. of Lectures
-	Syllabus	30 Lectures

Part – I : Craniology and Osteology :

- Overview of bones of human Skeleton.
- Sketching and labeling of various norm's of skull.
- Identification and description of pectoral girdle, pelvic girdle and long bones of human Skeleton.

Part – II : Craniometry :

- Maximum Cranial length.
- Maximum Cranial Breadth.
- Maximum frontal Breadth.
- Bizygomatic Breadth.
- Nasal Height.
- Nasal Breadth
- Minimum frontal breadth

- Bimaxillary Breadth.
- Biorbital Breadth
- Length of foramen magnum.

Part – III : Somatometry :

- Maximum head length
- Maximum head breadth
- Maximum Frontal breadth
- Maximum bizygomatic breadth
- Bigonial breadth.
- Nasal height
- Nasal length
- Nasal breadth
- Physiognomic facial height
- Morphological facial height

Part – IV : Craniometric indices

- Cranial Index
- Nasal Index

Part C : Learning Resources

1. Das, B.M. 2013. Outlines of Physical Anthropology. Allahabad : Kitab Mahal.
2. Jurmain, R., Kilgore, L., Trevathan, W., Ciochon, R.L. 2012. Introduction to Physical Anthropology. Oxford & IBH Publishing Co. Molnar, Stephen. 1975. Human Variations : Race Types and Ethnic Groups. London : Routledge.
3. Seth, P.K. and Seth, S. 1986. The Primates. New Delhi : Northern Book Centre.
4. Singh, I.P. and Bhasin, M.K. 1989. Anthropometry : A Laboratory Manual on Biological Anthropology. Delhi : Kamla-Raj Enterprises.

Part D : Assessment and Evaluation

University Exam. (UE) : Max. Marks : 50 Marks

Part A: Introduction				
Program: Certificate Course		Class: B. A. / B.Sc. Part I	Year: 2022	Session:2022-2023
1	Course Code	Paper – MATH- 1T		
2	Course Title	Calculus		
3	Course Type	Theory		
4	Pre-requisite (if any)	No		
5	Course Learning Outcome (CLO)	**This Course will enable the students to:** • Calculate the limit and examine the continuity and understand the geometrical interpretation of differentiability. • Understand the consequences of various mean value theorems. • Draw curves in cartesian and polar coordinate systems. • Understand conceptual variations while advancing from one variable to severalvariables in calculus. • Inter-relationship amongst the line integral, double and triple integral formulations. • Realize importance of Green, Gauss and Stokes' theorems in other branches ofmathematics.		
6	Credit Value	4		
7	Total Marks	Maximum Marks : 50	Minimum Passing Marks :	

Part B: Content of the Course Total Periods: 60		
Unit	Topics	No. of Periods
I	**Sequences, Continuity and Differentiability:** Notion of convergence of sequences and series of real numbers, ε-δ definition of limit and continuity of a real valued function; Differentiability and its geometrical interpretation; Rolle's theorem, Lagrange's mean value theorem, Cauchy's mean value theorem and their geometrical interpretations, Darboux's theorem.	12
II	**Expansion of Functions:** Successive differentiation and Leibnitz theorem. Maclaurin's and Taylor's theorems for expansion of a function, Taylor's theorem in finite form with Lagrange, Cauchy and Roche–Schlömilch forms of remainder.	12
III	**Curvature, Asymptotes and Curve Tracing:** Curvature; Asymptotes of general algebraic curves, parallel asymptotes, Asymptotes parallel to axes; symmetry, concavity and convexity, points of inflexion, Tangents at origin, Multiple points, Position and nature of double points; Tracing of	12

	cartesian, polar and parametric curves; Envelopes and Evolutes.	
IV	**Functions of Several Variables:** Limit, continuity and first order partial derivatives, Higher order partial derivatives, Change of variables, Euler's theorem for homogeneous functions, Taylor's theorem, Total differentiation and Jacobians.	12
V	**Double and Triple Integrals:** Double integration over rectangular and non-rectangular regions, Double integrals in polar co-ordinates, Triple integral over a parallelepiped and solid regions, Volume by triple integrals, Line integrals, Green's theorem, Area as a line integral, Surface integrals, Stokes' theorem, The Gauss divergence theorem.	12

Part C - Learning Resource

Text Books and Reference Books:

1. Howard Anton, I. Bivens & Stephan Davis. Calculus (10th edition). Wiley India. 2016
2. Gabriel Klambauer. Aspects of Calculus. Springer-Verlag. 1986
3. Wieslaw Krawcewicz & Bindhyachal Rai. Calculus with Maple Labs. Narosa. 2003
4. Gorakh Prasad Differential Calculus (19th edition). Pothishala Pvt. Ltd. 2016
5. George B. Thomas Jr., Joel Hass, Christopher Heil & Maurice D. Weir. Thomas' Calculus (14th edition). Pearson Education 2018
6. Jerrold Marsden, Anthony J. Tromba & Alan Weinstein. Basic Multivariable Calculus, Springer India Pvt. Limited.2009
7. James Stewart. Multivariable Calculus (7th edition). Brooks/Cole. Cengage 2012.
8. Monty J. Strauss, Gerald L. Bradley & Karl J. Smith. Calculus (3rd edition). Pearson Education. Dorling Kindersley (India) Pvt. Ltd. 2011

E- Resources :

1. Suggested Equivalent **online courses:** Web link NPTEL/ SWAYAM/ MOOCs
2. https://www.youtube.com/watch?v=tffrrtzUhmw&list=PL7oBzLzHZ1wXBSiJEgqz_iwVoLiY8qhbv
3. https://www.youtube.com/watch?v=XzaeYnZdK5o&list=PLtKWB-wrvn4nA2h8TFxzWL2zy8O9th_fy
4. https://www.youtube.com/watch?v=zxbHsPB8m-M&list=PLBCEh9iawVM75FaeqS-z7olBKTSLfAC4A

Part D: Assessment and Evaluation	
Suggested Continuous Evaluation Methods: Maximum Marks:	50 Marks

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Part A: Introduction				
Program: Certificate Course		Class: B. A. / B.Sc. Part I	Year: 2022	Session:2022-2023
1	Course Code	Paper – MATH-2T		
2	Course Title	Algebra		
3	Course Type	Theory		
4	Pre-requisite (if any)	No		
5	Course Learning Outcome (CLO)	**This Course will enable the students to:** • Employ De Moivre's theorem in a number of applications to solve numerical problems. • Learn about the fundamental concepts of groups, subgroups, normal subgroups, isomorphism theorems, cyclic and permutation groups. • Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix, using rank. • Find eigen values and corresponding eigen vectors for a square matrix. • Understand real vector spaces, subspaces, basis, dimension and their properties.		
6	Credit Value	4		
7	Total Marks	Maximum Marks : 50		Minimum Passing Marks : ....

Part B: Content of the Course Total Periods: 60		
Unit	Topics	No. of Periods
I	**Set Theory and Theory of Equations:** Sets, Relations, Equivalence relations, Equivalence classes; Finite, countable and uncountable sets; The division algorithm, Divisibility and the Euclidean algorithm, Modular arithmetic and basic properties of congruence's; Elementary theorems on the roots of polynomial equations, Imaginary roots, The fundamental theorem of algebra (statement only); The nth roots of unity, De Moivre's theorem for integer and rational indices and its applications.	12
II	**Groups, Subgroups, Normal Subgroups and Isomorphism Theorems :** Definition and properties of a group, Abelian groups, Examples of groups including D_n (dihedral groups), Q_8	12

	(quarternian group), $GL(n, \mathbb{R})$ (general linear groups) and $SL(n, \mathbb{R})$ (special linear groups); Subgroups and examples, Cosets and their properties, Lagrange's theorem and its applications, Normal subgroups and their properties, Simple groups, Factors groups; Group homomorphisms and isomorphisms with properties; First, second and third isomorphism theorems for groups.	
III	**Cyclic and Permutation Groups:** Cyclic groups and properties, Classifications of subgroup of cyclic groups, Cauchy theorem for finite abelian groups; Centralizer, Normalizer, Center of a group, Product of two subgroups, Permutation group and properties, Even and odd permutations, Cayley's theorem.	12
IV	**Row Echelon Form of Matrices and Applications:** Systems of linear equations, Row reduction and echelon forms, The rank of a matrix and its applications in solving system of linear equations; Matrix operations, Symmetric, skew- symmetric, self-adjoint, orthogonal, Hermition, skew-Hermition and unitary matrices; Determinant of a square matrix, The inverse of a square matrix, Eigen vectors and eigen values, The characteristic equation and the Cayley□Hamilton theorem, Applications of matrices to computer graphics and search engines.	12
V	**Vector Spaces and Linear Transformations:** Definitions of field and vector space with examples, Subspaces, Linear span, Quotient space and direct sum, Linearly independent and dependent sets, Bases and dimension, Linear transformation and matrix of a linear transformation, Change of coordinates, Rank and nullity of linear transformation, Rank-nullity theorem.	12

Part C - Learning Resource

Text Books and Reference Books

1. Michael Artin *Algebra* (2nd edition). Pearson 2014.
2. John B. Fraleigh. *A First Course in Abstract Algebra* (7th edition). Pearson 2007.
3. Stephen H. Friedberg, Arnold J.Insel& Lawrence E. Spence. *Linear Algebra* (4thedition). Prentice-Hall of India Pvt. Ltd. 2003
4. Joseph A. Gallian. *Contemporary Abstract Algebra* (9th edition). Cengage. 2017
5. Kenneth Hoffman & Ray Kunze. *Linear Algebra* (2nd edition). Prentice-Hall. 2015

6. I. N. Herstein. *Topics in Algebra* (2nd edition). Wiley India. 2006
7. Nathan Jacobson. *Basic Algebra* I (2nd edition). Dover Publications. 2009
8. Ramji Lal. *Algebra 1: Groups, Rings, Fields and Arithmetic*. Springer. 2017
9. I.S. Luthar & I.B.S. Passi. *Algebra: Volume 1: Groups*. Narosa. 2013

E- Resources

1. Suggested Equivalent **online courses:** Web link NPTEL/ SWAYAM/ MOOCs
2. Linear Algebra
   https://www.youtube.com/watch?v=9h_Q-R6sXbM&list=PL7oBzLzHZ1wXQvQ938Wg1-soq09GywgOw
3. Group theory
   https://www.youtube.com/watch?v=pMzcLG6s3z0&list=PLEAYkSg4uSQ1Yhxu2U-BxtRjZElrfVVcO

Part D: Assessment and Evaluation	
Suggested Continuous Evaluation Methods: Maximum Marks:	50 Marks

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Part A: Introduction				
Program: **Certificate Course**		Class: **B.A./ B.Sc. I Year**	Year: **2022**	Session: **2022-2023**
1	Course Code	**MATH-1P (I)**		
2	Course Title	I - Lab 01 - Calculus and Algebra		
3	Course Type	**Practical**		
4	Pre-requisite (if any)	No		
5	Course Learning Outcomes (CLO)	At the end of course, Students will be able to • Learn Free and Open Source Software (FOSS) tools for computer programming • Solve problems on Calculus and Algebra theories studied in Mathematics Paper 1and 2 by using FOSS softwares. • Acquire knowledge of applications of Calculus and Algebra through FOSS.		
6	**Credit Value**	2		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
	Total Periods: 30
Tentative Practical List	Mathematics practical with Free and Open Source Software (FOSS) tools forcomputer programs, such as GeoGebra/Maxima/Scilab/ Octave /Python/R. **Course Objectives:** • To learn Free and Open Source Software (FOSS) tools for computerprogramming • Acquire knowledge of applications of algebra and calculus through FOSS **List of Practicals:** (At least 15 practicals) • Programs to illustrate left hand and right hand limits for discontinuous functions. • Program to illustrate continuity of a function • Program to illustrate differentiability of a function • Program to verify Rolle's theorem • Program to verify Lagrange's theorem • Programs to verify Cauchy's mean value theorem and finding Taylor's theorem for a given function. • Program to illustrate nth derivative without Leibnitz rule.

	• Program to construct series using Maclaurin's expansion for functions of two variables. • Program to finding the asymptotes of curves. • Program to finding radius of curvature of cycloid. • Program to finding partial derivative of a given function. • Program to calculating the area under two curves. • Obtaining partial derivatives of some standard functions. • Evaluation of the line integral with constant limits. • Evaluation of the line integral with variable limits. • Evaluation of the double integral with constant limits. • Evaluation of the double integral with variable limits. • Evaluation of the triple integral with constant limits. • Evaluation of the triple integral with variable limits. • Programs for area and volume. • Verifying whether given operator is binary or not • To find identity element of a group • To find inverse element of a group. • To construct Cayley's table • Verification of a subgroup of a given subset of a group • Finding all possible subgroups of a finite group. • Examples to verify Lagrange's theorem. • To find the left and right cosets and index of a subgroup • To find all the cyclic subgroups of a given group • Verification of normality of a given subgroup of a group • Illustrating homomorphism and isomorphism of groups • Examples on different types of rings.

	• Examples on integral domains and fields. • Examples on subrings, ideals and subrings which are not ideals. • Homomorphism and isomorphism of rings- illustrative examples. • Solving polynomial equations. • Finding G.C.D of polynomials. • Finding product of two matrices • To test linear independency of a given set of a vectors in a vector space.

Part C - Learning Resource		
Text Books, Reference Books, Other Resources		
SUPPORT FROM THE GOVT FOR STUDENTS AND TEACHERS IN UNDERSTANDING AND LEARNING FOSS TOOLS: As a national level initiative towards learning FOSS tools, IIT Bombay for MHRD, government of India is giving free training to teachers interested in learning open source software's like scilab, maxima, octave, geogebra and others. (Website: http://spoken-tutorial.org;) (email: info@spokentutorial.org; contact@spoken-tutorial.org)		
Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): Not Applicable University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable

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Part A: Introduction				
Program: **Certificate Course**		Class: **B.A./B.Sc. I Year**	Year: **2022**	Session: **2022-2023**
1	Course Code	**MATH-1P (II)**		
2	Course Title	II - Project 01 - History of Mathematician		
3	Course Type	**Project**		
4	Pre-requisite (if any)	NIL		
5	Course Learning Outcomes (CLO)	Studying history of mathematicians help students: • Develop a deeper understanding of the mathematics they hare already studied by seeing how it was developed over time and in various places. • Know the rich intellectual heritage of the country. • Develop an appreciation of mathematics and build positive attitude towards mathematics increasing student's motivation decreasing anxiety related the subject. • To acquire knowledge about development of mathematics in ancient , medieval and modern period of history.		
6	**Credit Value**	**2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
	Total Periods: 30
Project List	**Course Objectives:** An elective course designed to acquire special / advance knowledge, such as supplement study / support study to a project work and a candidate will study such a course on his own with an advisory support a teacher / faculty member. **Project** Contributions and biographies of Indian Mathematicians- Bodhayan, Apasthambh, Katyayan and Mahaveeracharya, Brahmagupta, and Bhaskaracharya in special context of Leelavati and contributions of mathematicians involved in context of the paper of calculus and algebra. (10 Mathematicians)

Part C - Learning Resource		
Text Books, Reference Books, Other Resources		
Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): Not Applicable University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable

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Specific Program Outcome

B. A. (I, II, III) Year 2023-2026

- The UG programme in Linguistics aims at skill enhancement of enrolled students in field of language study and linguistic - analysis, so that they can develop awareness of the nature of language and its role in human society.
- The UG programme is designed to work for the holistic development of each student, concentrating on developing their depth of knowledge.
- The programme teaches the students to think in multiple directions with its interdisciplinary understanding and engagement with subjects like sociology, psychology, anthropology, history etc. while creating a first hand knowledge in core areas of Linguistics and paving the way for excellence in its specific areas and some of the significant applied areas of Linguistics.
- Derive basic linguistic knowledge, to identify, analyse and document specific linguistic characteristics of a chosen language.
- Enable the taking to delve into scientific study of linguistic field of their choice.
- Provide opportunities in a meaningful learning experiences that prepare the student to meet his/her goals after earning a linguistics degree.
- Help identify one's own analyses for understanding of language, people or society as a whole.
- The UG course in Linguistics equips the students with the aptitude to undertake PG course of Linguistics.

बी. ए. प्रथम वर्ष– 2023–2024

B.A. Part I Year - 2023-2024

भाषाविज्ञान

Linguistics

प्रथम प्रश्न पत्र

Paper -I

भाषा एवं भाषाविज्ञान : अर्थ, प्रकृति एवं व्याप्ति

Language and Linguistics :Meaning, Nature and Scope

Max. Marks -75 Qualifying Marks -26

Paper I	**Marks**	**Periods**	**Credit**
Unit –I	2x5 = 10	10	1
Unit-II	10x2 = 20	20	1
Unit-III	5x2 = 10	10	1
Unit-IV	15x1 = 15	10	1
Unit-V	10x2 = 20	25	1
Total	**75**	**75**	**5**

Sheel Sharma

बी. ए. प्रथम वर्ष– 2023–2024

B.A. Part I Year - 2023-2024

भाषाविज्ञान

Linguistics

प्रथम प्रश्न पत्र

Paper -I

भाषा एवं भाषाविज्ञान : अर्थ, प्रकृति एवं व्याप्ति

Language and Linguistics:Meaning, Nature and Scope

पूर्णांक – 75	क्रेडिट – 5	कालखण्ड – 75
Max. Marks- 75	Credit – 05	Periods - 75

इकाई विभाजन

1. भाषा– मानव एवं मानवेतर संप्रेषण, परिभाषा, विभोषताएँ, भाषाविज्ञान की उपयोगिता, भाषाविज्ञान की विभिन्न शाखाएँ, भाषाविज्ञान का अन्य विषयों के साथ संबंध।

   Language - Human and non-Human Communication, Definition, Characteristics, Utility of linguistics, different Branches of Linguistics, Relation of Linguistics with other disciplines

2. भाषा सीखने की प्रक्रिया – मौखिक एवं लिखित भाषा के विविध रूप, भाषा बोली में अंतर, बोली के भाषा बन जाने के कारण, भाषाई परिवर्तन के प्रकार एवं कारण ।

   Process of language Learning - Various forms of oraland written languages, Difference between dialect and language, Reasons of Dialect to become a language.Types and Reasons of language change. ..

3 भारतीय एवं पाश्चात्य भाषा चिंतन परंपरा ।

Indian and western Linguistic Tradition.

भारतीय भाषा चिंतक – यास्क, पाणिनि, पतंजलि, कैयट, नागेश, जयादित्य तथा भट्टोजिदीक्षित

Indian Linguists -Yask, Panini, Patanjali, Kayyat, Nagesh, Jayaditya and Vaman, Bhattoji Dixit

पाश्चात्य भाशा चिंतक – सुकरात, अरस्तु और प्लेटो , सर विलियम जोंस, डब्लू हम्बोल्ट, रैस्मस रास्क, (Rasmus Rask) याकोब ग्रिम, आग्सट भलाइखर, मैक्समूलर, एफ.डी. सस्यूर (F.de Saussure) ब्लूम फ़ील्ड, चॉम्स्की, फ़िलमोर

Western Linguists -Sukarat (Socrates), Arastu (Aristotle) and Plato,Sir William Jones, W. Hambolt, Rasmus Rask, Jacob Grimm, August Schleicher, Max Muller, F.D. Saussure, Bloomfield, Chomsky, Fillmore

4. भाषा एवं विचार – भाषा सामर्थ्य एवं भाषा व्यवहार; सहजात परिकल्पना, निश्चयवाद अनुभववाद।

   Language and Thought - Linguistic Competence and Linguistic Performance; Innate hypothesis, Determinism, Experientialism.

Shewlsharma

5 छत्तीसगढ़ी का उद्भव और विकास छत्तीसगढ़ी के क्षेत्रीय भेद।

Origin and Development of Chattisgarhi, Regionalvarieties of Chattisgarhi.

निर्धारित पुस्तकें –

1. भाषाविज्ञान – भोलानाथ तिवारी
2 भाषाविज्ञान सैद्धांतिक चिंतन– रवीन्द्रनाथ श्रीवास्तव
3. Philosophy of Langunge & S. Chopman Routledge (London)
4 An Introduction to Language A- Almajian-
5. छत्तीसगढ़ की भाषाएँ– डॉ. चित्तरंजन कर
6. छत्तीसगढ़ी का उद्भव और विकास : नरेन्द्र देव वर्मा

Course Outcome

B. A. Part - I

Paper - I

Language and Linguistics

- Students will develop a comprehensive understanding of the concepts of linguistic competence and Linguistic performance, innate hypothesis, determinism, Experientialism along with the primary knowledge of Language and Linguistics.
- Students will understand the origin and development of Chhattisgarhi and its regional varieties.

Shail Sharma

बी. ए. प्रथम वर्ष–2023–2024

B.A. Part I Year - 2023-2024

भाषाविज्ञान

Linguistics

द्वितीय प्रश्न पत्र

Paper -II

उच्चारण एवं वर्तनी

Max. Marks -75 Qualifying Marks -26

Paper II	Marks	Periods	Credit
Unit –I	3x5 = 15	15	1
Unit-II	10x2 = 20	20	1
Unit-III	10x2 = 20	20	1
Unit-IV	2x5 = 10	10	1
Unit-V	2x5 = 10	10	1
Total	75	75	5

बी. ए. प्रथम वर्ष–2023–2024

B.A. Part I Year - 2023-2024

भाषाविज्ञान

Linguistics

द्वितीय प्रश्न पत्र

Paper -II

उच्चारण एवं वर्तनी

Pronunciation and Spelling

पूर्णांक – 75	क्रेडिट – 5	कालखण्ड – 75
Max. Marks- 75	**Credit – 05**	**Periods - 75**

इकाई विभाजन

1. वाग्ध्वनियों का वर्गीकरण; स्वर तथा व्यंजन की परिभाषा एवं अंतर ।

   Classification of speech Sounds, vowels and consonants,Definition and differences.

2. स्वर–वर्गीकरण के आधार; लघु स्वर, दीर्घस्वर एवं संध्यक्षर (संयुक्त स्वर)।

   Basis of classification of vowels; short vowels, long vowels and Diphthongs

3. व्यंजन–वर्गीकरण के आधार; संयुक्त व्यंजन।
   Basis of classification of consonants; compoundconsonants.

4. विराम–चिह्न एवं उनका प्रयोग; विराम–चिह्नों का महत्त्व ।
   Punctuation marks and their use; importance of punctuation marks.

5. वर्तनी– शब्द–शुद्धि, वाक्य–शुद्धि (लिंग, वचन, कारक)।
   Spelling - correction of errors in words andSentences (gender, number, case)

निर्धारित पुस्तकें –

1 ध्वनिविज्ञान – गोलोक बिहारी धल

2 भाषाविज्ञान–भोलानाथ तिवारी

3 हिंदी भाषा एवं व्याकरण – वासुदेवनंदन प्रसाद

4. हिंदी व्याकरण : कामता प्रसाद गुरु

5. मानक हिंदी का शुद्धिपरक व्याकरण: रमेश चंद्र महरोत्रा

Shail Sharma

Course Outcome
B. A. Part - I

Paper – II

- This would enrich the students in the learning of segmental features to facilitate easy learning of the intricacies of language with accuracy in usage and articulation.
- In addition, this would also add to error – free usage of language both spoken and written by extensive exercises in spellings, vocab, pronunciation and grammatical nuances.

Learning Objective

B. A.Part- I

- To instill curiosity, to explore language with its intricacies.
- Study evolution of language and the expanse of progress in language patterns.
- To identify the importance of language performance and its resultant – language competence.
- To provide basic learning of language components chiefly suprasegmental features.

बी.ए. प्रथम वर्ष
प्रश्न–पत्र प्रथम–सैद्धांतिक

कक्षा : बी.ए. प्रथम वर्ष		सत्रः 2023–24
विषय – नृत्य (भरत नाट्यम)		
1	पाठ्यक्रम का कोड	
2	पाठ्यक्रम का शीर्षक	नृत्य का इतिहास एवं सामान्य अध्ययन
3	पाठ्यक्रम का प्रकार : (कोर कोर्स / इलेक्टिव / जेनेरिक / इलेक्टिव / वोकेशनल)	कोर कोर्स
4	पूर्वापेक्षा (Prerequisite) (यदि कोई हो)	इस कोर्स का अध्ययन करने के लिए, छात्र ने कक्षा 12वीं पास किया हो। (सभी संकाय के छात्र / छात्राएँ)
5	पाठ्यक्रम अध्ययन की परिलब्धियाँ (कोर्स लर्निंग आउटकम) (CLO)	भरतनाट्यम दक्षिण भारत की सांस्कृतिक समृद्धशाली परंपरा का विशेष अंग है। यह प्राचीन नृत्यकला मंदिरों में पुष्पित, पल्लवित हुई है जो राजाओं एवं राज्यों के संरक्षण में समृद्ध होकर संपूर्ण विश्व में प्रतिस्थापित है। यह पाठ्यक्रम भारत के इस क्षेत्र के विद्यार्थियों को प्राचीन संस्कृति से अवगत करायेगा। छात्रों का बौद्धिक एवं शारीरिक विकास होगा– निम्न बिन्दुओं के माध्यम से पाठ्यक्रम का ज्ञान होगा। • प्राचीन भारतीय संस्कृति से अवगत होना। • संस्कृत में श्लोकों को लिखने की क्षमता • नृत्य के प्रतीकात्मक हस्तों का ज्ञान • स्थानीय कला का परिचय • भरतनाट्यम नृत्य का आधार ज्ञान
6	क्रेडिट अंक	03
7	कुल अंक	50 (न्यूनतम–17)
8	पाठ्यक्रम संख्या	45 व्याख्यान (15 कालखण्ड = 01 क्रेडिट अंक)

पाठ्यक्रम	विषय		
1	**नृत्य का इतिहास**	–	सिंधु सभ्यता, वैदिक काल, रामायण एवं महाभारत काल में नृत्य की स्थिति।
2	**पुराणों के आधार पर**	–	उमाशकर एवं नटवर श्री कृष्ण की नृत्य संबंधी कथायें–त्रिपुरडाह, उमा तांडव, मोहिनी–भस्मासुर, माखन लीला, कालिया दमन, रासलीला।
3	**नृत्यकला का परिचय**	–	भरतनाट्यम नृत्यशैली की विशेषतायें
4	**नाट्य की उत्पत्ति कथा**	–	भरत के नाट्यशास्त्र के प्रथम अध्याय में वर्णित।
5	**लोकधर्मी नाट्य परंपरा**	–	निम्न की संक्षिप्त जानकारी – 1. रामलीला 2. रासलीला 3. छत्तीसगढ़ी लोकनाट्य परम्परा–नाचा, पंडवानी

बी.ए. प्रथम वर्ष
प्रश्न–पत्र : द्वितीय–सैद्धांतिक

कक्षा : बी.ए. प्रथम वर्ष			सत्रः 2023–24
विषय – नृत्य (भरत नाट्यम)			
1	पाठ्यक्रम का कोड		
2	पाठ्यक्रम का शीर्षक		शास्त्रीय नृत्य सिद्धान्त
3	पाठ्यक्रम का प्रकार : (कोर कोर्स / इलेक्टिव / जेनेरिक / इलेक्टिव / वोकेशनल)		कोर कोर्स
4	पूर्वापेक्षा (Prerequisite)(यदि कोई हो)		इस कोर्स का अध्ययन करने के लिए, छात्र ने कक्षा 12वीं पास किया हो। (सभी संकाय के छात्र / छात्राएँ)
5	पाठ्यक्रम अध्ययन की परिलब्धियाँ (कोर्स लर्निंग आउटकम) (CLO)		भरतनाट्यम दक्षिण भारत की सांस्कृतिक समृद्धशाली परंपरा का विशेष अंग है। यह प्राचीन नृत्यकला मंदिरों में पुष्पित, पल्लवित हुई है जो राजाओं एवं राज्यों के संरक्षण में समृद्ध होकर संपूर्ण विश्व में प्रतिस्थापित है। यह पाठ्यक्रम भारत के इस क्षेत्र के विद्यार्थियों को प्राचीन संस्कृति से अवगत करायेगा। छात्रों का बौद्धिक एवं शारीरिक विकास होगा– निम्न बिन्दुओं के माध्यम से पाठ्यक्रम का ज्ञान होगा। • दक्षिण ताल पद्धति का सामान्य परिचय। • नृत्य के लाभ। • तकनीकी शब्दों का ज्ञान
6	क्रेडिट अंक		03
7	कुल अंक		50 (न्यूनतम–17)
8	पाठ्यक्रम संख्या		45 व्याख्यान (15 कालखण्ड = 01 क्रेडिट अंक)
पाठ्यक्रम	विषय		
1	**ताल की प्रांरभिक जानकारी**	–	1. ताल के दस प्राण। 2. लय– विलंबित, मध्य एवं द्रुत लय।
2	**संक्षिप्त जीवन परिचय**	–	भरत मुनि, आचार्य नंदिकेश्वर।
3	**नृत्य के अभ्यास से शारीरिक एवं मानसिक लाभ।**		
4	**भारतीय नाट्य परंपरा में गुरूवंदना का महत्व।**		
5	**छत्तीसगढ़ी नृत्यों का सामान्य परिचय**	–	करमा, ददरिया, सुआ, पंथी, राऊत नाचा

बी.ए. प्रथम वर्ष
प्रश्न–पत्र : प्रायोगिक

कक्षा : बी.ए. प्रथम वर्ष		सत्र : 2023–24
विषय – नृत्य (भरत नाट्यम)		
1	पाठ्यक्रम का कोड	
2	पाठ्यक्रम का शीर्षक	प्रायोगिक
3	पाठ्यक्रम का प्रकार : (कोर कोर्स / इलेक्टिव / जेनेरिक / इलेक्टिव / वोकेशनल)	कोर कोर्स
4	पूर्वापेक्षा (Prerequisite)(यदि कोई हो)	इस कोर्स का अध्ययन करने के लिए, छात्र ने कक्षा 12वीं पास किया हो। (सभी संकाय के छात्र / छात्राएँ)
5	पाठ्यक्रम अध्ययन की परिलब्धियाँ (कोर्स लर्निंग आउटकम) (CLO)	भरतनाट्यम दक्षिण भारत की सांस्कृतिक समृद्धशाली परंपरा का विशेष अंग है। यह प्राचीन नृत्यकला मंदिरों में पुष्पित, पल्लवित हुई है जो राजाओं एवं राज्यों के संरक्षण में समृद्ध होकर संपूर्ण विश्व में प्रतिस्थापित है। यह पाठ्यक्रम भारत के इस क्षेत्र के विद्यार्थियों को प्राचीन संस्कृति से अवगत करायेगा। छात्रों का बौद्धिक एवं शारीरिक विकास होगा– निम्न बिन्दुओं के माध्यम से पाठ्यक्रम का ज्ञान होगा। • शरीर के विभिन्न अवयवों का ताल, एवं लयात्मक संचालन • अड़तुओं का अभ्यास एवं प्रदर्शन • श्लोकों के बोलने का अभ्यास • हस्तमुद्राओं का अभ्यास
6	क्रेडिट अंक	04 (60 कालखण्ड)
7	मौखिक मुद्रा	(अभिनय दर्पण के अनुसार–मुद्रा एवं श्लोक वाचन) (1) शिावस्तुति (2) शिारोभेद (3) ग्रीवाभेद (4) दृष्टिभेद (5) असंयुक्त हस्त (6) संयुक्त हस्त
8	कार्यक्रम विभाग	(1) तकनीकी शब्दावली–अरमण्डी, मुरुमण्डी, नडय, सम, तत्कड़ी (2) आरंभिक –05 अड़ऊ भेद (पद + हस्त संचालन तीन काल में) तत् अड़वु, नाट्ट अड़वु, परवल अड़वु, पक्क अड़वु, कुदितमेट्ट अड़वु
9	प्रोजेक्ट कार्य	छत्तीसगढ़ के प्रमुख लोकनृत्य

अनुशंसित अध्ययन संसाधन
पाठ्य पुस्तकें, संदर्भ पुस्तकें, अन्य संसाधन

अनुशंसित सहायक पुस्तके / ग्रन्थ / अन्य पाठ्य संसाधन / पाठ्य सामग्री :–

1. वाचस्पति गैरोला–भारतीय नाट्य परंपरा और अभिनय दर्पण।
2. डॉ. पुरूदाधीच –भरतनाट्यम शिक्षा भाग–1
3. पी. मेदिनी हॉबल – वैश्विक नृत्य व नाट्य।
4. Understanding BHaratanatyam-Mrinalini Sarabhai
5. Bharat Natya and Other Dances of Tamil Nadu- E.Krishna Iyer
6. डॉ. पुरू दाधीच –कथक नृत्य शिक्षा भाग–1 एवं 2
7. डॉ. चेतना ब्यौहार – कथक कल्प द्रुम
8. डॉ. भगवान दास माणिक – कथक मध्यमा।
9. डॉ. ज्योति बक्शी– कथक अक्षरों के आरसी ।
10. बाबूलाल शास्त्री– नाट्य शास्त्र
11. The Dances of India – Enakshi Bhavanani
12. Classical Dances- Sonal Mansingh
13. Invitation to Indian Dances- Susheela Mishra

अनुशंसित मूल्यांकन विधियाँ

अनुशंसित सतत् मूल्यांकन विधियाँ:
अधिकतम अंक : 50 (प्रति प्रश्नपत्र)
सतत व्यापक मूल्यांकन (CCE)अंक : 5 विश्वविद्यालय परीक्षा (UE) अंक : 45

आंतरिक मूल्यांकन सतत व्यापक मूल्यांकन (CCE) :	क्लास टेस्ट	5
विश्वविद्यालयीन परीक्षा :		45
कुल अंक		50

B.A. FIRST YEAR
PAPER-FIRST - THEORY

Class : B.A. First Year			**Session : 2023-24**
Subject - Dance (Bharatnatyam)			
1	Code of Course		
2	Title of Course		History of dance & General study
3	Types of Course : (Core Course Elective/Generic/Elective/Vocational		Core Course
4	Prerequisite (If any)		To study this course, the student must have passed class 12th. (Students of all Faculties)
5	Course Learning Outcome (CLO)		Bharatanatyam is a special part of the rich cultural tradition of South India. This ancient dance form has flourished and flourished in the temples, which prospered under the patronage of kings and kingdoms and has been replaced all over the world. This course will make the students of this region of India aware of the ancient culture. There will be intellectual and physical development of the students- Knowledge of the curriculum will be done through the following points. • To be aware of ancient Indian culture. • Ability to write shlokas in Sanskrit • knowledge of the symbolic hand of dance • Introduction to Local Art • Basic knowledge of Bharatnatyam dance
6	Credit Number		03
7	Total Marks		50 (Minimum-17)
8	Number of Lectures		45 Lecturers (15 Periods=01 Credit Number)
Course	Subject		
1	History of dance	-	Status of dance in Indus civilization, Vedic period, Ramayana and Mahabharata period.
2	On the basis of Puranas	-	dance stories of Umashkar and Natwar Shri Krishna - Tripuradah, Uma Tandava, Mohini-Bhasmasura, Makhan Leela, Kaliya Daman, Rasleela.
3	Introduction of Dance Styles	-	Characteristics of Bharatnatyam Dance Style
4	Origin of Natya	-	Described in the first chapter of Bharata's Natyashastra.
5	Lokdharmi Natya Tradition	-	Brief information of the following - 1. Ramleela 2. Rasleela 3. Chattisgarhi Folk Natya Tradition - Dance, Pandwani

B.A. FIRST YEAR
PAPER-SECOND - THEORY

Class : B.A. First Year			**Session : 2023-24**
Subject - Dance (Bharatnatyam)			
1	Code of Course		
2	Title of Course		Theory of Classical Dance
3	Types of Course : (Core Course Elective/Generic/Elective/Vocational		Core Course
4	Prerequisite (If any)		To study this course, the student must have passed class 12th. (Students of all Faculties)
5	Course Learning Outcome (CLO)		Bharatanatyam is a special part of the rich cultural tradition of South India. This ancient dance form has flourished and flourished in the temples, which prospered under the patronage of kings and kingdoms and has been replaced all over the world. This course will make the students of this region of India aware of the ancient culture. There will be intellectual and physical development of the students- Knowledge of the curriculum will be done through the following points. • General Introduction to the South Indian Taal System. • Benefits of dance. • Knowledge of technical terms
6	Credit Number		03
7	Total Marks		50 (Minimum-17)
8	Number of Lecturers		45 Lecturers (15 Periods = 01 Credit Number)
Course	Subject		
1	Basic knowledge of rhythm/ Taal	-	1. The ten pranas of the Taal. 2. Laya – Delay(Vilambit), middle(Madhya) and fast (Drutam) rhythm .
2	Brief Biography	-	Bharat Muni, Acharya Nandikeshwar.
3	Physical and mental benefits from the practice of dance.		
4	Importance of Guruvandana in Indian Dance/theatrical tradition.		
5	General Introduction to Chhattisgarhi Dances	-	Karma, Dadriya, Sua, Panthi, Raut Nacha

B.A. FIRST YEAR
PRACTICAL

Class : B.A. First Year		Session : 2023-2024
Subject - Dance (Bharatnatyam)		
1	Code of Course	
2	Title of Course	Practical
3	Types of Course : (Core Course Elective/Generic/Elective/Vocational	Core Course
4	Prerequisite (If any)	To study this course, the student must have passed class 12th. (Students of all Faculties)
5	Course Learning Outcome (CLO)	Bharatanatyam is a special part of the rich cultural tradition of South India. This ancient dance form has flourished and flourished in the temples, which prospered under the patronage of kings and kingdoms and has been replaced all over the world. This course will make the students of this region of India aware of the ancient culture. There will be intellectual and physical development of the students- Knowledge of the curriculum will be done through the following points. • Knowledge of Rhythm, and its Physical Presentations by the students. • Practice and Demonstration of Adavus • Practice of shlokas • Practicing hand gestures
6	Credit Number	03
7	Viva and mudras	Mudras and shloka presentation according (according to Abhinay darpana) Shiv stuti,Shirobhed,Drishti bhed,Greeva bhed, Asamyut hastas,Samyut hastas
8	PRACTICAL	Technical words - Aramandi , Murumandi, Naday, Sama, Tattakadi First Five Adavus in three kalas (Hand and foot) Tatta adavu, Natta adavu, Parval adavu , Pakka adavu , Kuditmett Adavu
9	**Project work**	**Folk Dances of Chhattisgarh**

Recommended Study Resources
Text Books, Reference Books, Other Resources
Recommended Supporting Books/Texts/Other Text Resources/Textual Material:-
1. Vachaspati Gairola - Indian theatrical tradition and acting mirror. 2. Dr. Purudadhich - Bharatnatyam Education Part-1 3. P. Medini Hombal - Global Dance and Drama. 4. Understanding BHaratanatyam-Mrinalini Sarabhai 5. Bharat Natya and Other Dances of Tamil Nadu- E.Krishna Iyer 6. Dr. Puru Dadhich - Kathak Dance Education Part-1 & 2 7. Dr. Chetna Beauhar - Kathak Kalp Drum 8. Dr. Bhagwan Das Manik - Kathak Madhyama. 9. Dr. Jyoti Bakshi - RC of Kathak letters. 10. Babulal Shastri - Natya Shastra 11. The Dances of India – Enakshi Bhavanani 12. Classical Dances- Sonal Mansingh 13. Invitation to Indian Dances- Susheela Mishra

Recommended Assessment Methods		
Recommended Continuous Evaluation Methods: Maximum Marks: 50 (Per Paper) Continuous Comprehensive Evaluation (ii) Marks: 5 University Examination (ii) Marks: 45		
internal assessment Continuous Comprehensive Evaluation (CCE) :	Class test	5
University Examination		45
Total Marks		50

Part A: Introduction				
Program: **Certificate Course**		Class: **B.A. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	BAHSC-1T		
2	Course Title	Home Science- Paper 1(Anatomy Physiology and Hygiene)		
3	Course Type	Theory		
4	Pre-requisite(if any)	NO		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be enable to: • To understand Basic of Human Body Structure. • To understand Basic of Human Body Functioning. • To understand Basic of Primary Health care. • To understand Basic knowledge of First Aid. • To understand Basic knowledge of Home Nursing.		
6	Credit Value	**Theory: 4**		
7	Total Marks	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course		
Total No. of Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**Structure & functions**: of cellular organelles and inclusions, General introduction of Tissue and their functions: Epithelial, Connective, Osseous, Cartilage, Nervous tissue. Skeletal system: Types of bones: Dense and Spongy, Classification general structure & function of bones. Muscular system: General Structure types and function: Skeletal, Cardiac and Visceral.	12
II	**Circulatory system**: General structure of organs and functions, Heart, Artery, Vein, Capillary. Composition of blood & function: RBC, WBC and Platelets, Plasma. Respiratory system: General structure of organs and function, Lung, Alveoli, Diaphragm.	12
III	**Digestive system:** General introduction of Nutrients, Liver and spleen organs of digestion their general structure and function, Stomach, small and large intestine, Excretory system- Organs of excretion. Kidney: Nephron, Malpighian body, Urinary Tubules, Skin. Normal and abnormal, Composition of urine.	12

IV	**Nervous system:** Central nervous system structure and function, Brain and Spinal cord, Senses and Sensory organs: ear and eye structure & function, Endocrine Glands Thyroid Gland, Pituitary Gland, Pancreas, Reproductive System: Male and Female.	12
V	**Hygiene**: Personal Hygiene, Social Hygiene, Environmental and Industrial Hygiene. Water: its importance and purification. Air: its importance and purification. First Aid: Fire Injury, Drawing, Accident, Fractures, Poisoning	12
Keywords: Anatomy, Physiology, Cellular organelles, inclusions, Heart, Blood, Blood Pressure, Kidney, Urine, Reproductive system, Hygiene, First Aid		

Part C: Learning Resources

Text Books. Reference Books, Other Resources

Suggested Readings:

1. Anatomy, Physiology And Health Education- Rohini Agrawal,Neeraj Agrawal, 2016 Edition, CBS Publisher.
2. Concise Textbook of Physiology – Indu Khurana, Arushi Khurana, 3rd Editin,ELSEVIER.
3. Human Physiology- C.C. Chatterjee,12th Edition, CBS Publisher.
4. Principles of Physiology- Debasis Pramanik 6th Edition J. P. Brothers Medical Publishers.
5. Textbook of medical physiology- Guyton A.C.-Hall. J.E. 9th edition,Prism Books Private Limited Bangalore.
6. Human Physiology In Nutshell - Dr. A. K. Jain, 5th Edition,Arya Publications.
7. Human Anatomy and Physiology-Dr S H Rashid, 2nd Edition, SIA Publishers.
8. Text book of Human Physiology- H D Singh,3rd Edition,S Chand & Co. Ltd.
9. Anatomical knowledge for nurses- Catherine Arms Strong.

E-learning Resources:

1. Metabolic acidosis- renal tubular acidosis
   https://youtu.be/XFSV7Ugk8xQ
2. Physiology of Adrenal Medulla
   https://youtu.be/RDIvpo4KKxc
3. Physiology of Thyroid gland
   https://youtu.be/yv15bWx7a48
4. Cellular respiration
   https://youtu.be/KBesLBnx968
5. Calcium transporters
   https://youtu.be/lsTaWVyEhXk
6. Cardiac action potentials
   https://youtu.be/MVkcDIXj8Gc
7. cell membrane proteins
   https://youtu.be/DtSvgzVoD-A
8. Cell Membrane
   https://youtu.be/j1kuax7Kwzk
9. Membrane Transport : Ion channels- https://youtu.be/eSgVHvsRG7Q

Part D:Assessment and Evaluation
Suggested Continuous Evaluation Methods-: University Exam (UE): 50 Marks

आज दिनांक 31.05.2022 को केन्द्रीय अध्ययन मण्डल की मीटिंग गृहविज्ञान विभाग में आयोजित की गई जिसमें निम्नलिखित सदस्य उपस्थित हुए तथा विभिन्न गृहविज्ञान से संबंधित विषयों के पाठ्यक्रम संशोधित एवं अनुमोदित किये गये–

डॉ. सीमा मिश्रा, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – अध्यक्ष,

डॉ. बबीता दुबे – प्रतिनिधि, उच्च शिक्षा विभाग, नया रायपुर

डॉ. भारती सेठी, डॉ. खूबचंद बघेल शासकीय स्नातकोत्तर महाविद्यालय, भिलाई–3, दुर्ग – सदस्य

डॉ. संध्या वर्मा, शासकीय कला एवं वाणिज्य महावि. देवेन्द्र नगर, रायपुर – सदस्य

डॉ. संध्या मदन मोहन,प्राचार्य,भिलाई महिला महाविद्यालय, भिलाई, – सदस्य

एवं अध्यक्ष, अध्ययन मण्डल, हेमचंद यादव विश्वविद्यालय

डॉ. रश्मि निंज, दूधाधारी महिला महावि. रायपुर – सदस्य

डॉ. अल्का दुग्गल, वामन राव पाटनकर महिला महावि, दुर्ग – सदस्य

डॉ. निशा श्रीवास्तव, होलीक्रास महिला महावि. अंबिकापुर – सदस्य

डॉ. शिप्रा बनर्जी, दूधाधारी महिला महावि. रायपुर – सदस्य

श्रीमती ममता आर, देव, शासकीय कमलादेवी राठी महिला स्नातको. महावि. राजनांदगांव छ.ग. – सदस्य

सुश्री सुषमा घई, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – सदस्य

डॉ. दीपाली राव, शासकीय घनश्याम सिंह गुप्त स्नातको.महावि, बालोद – सदस्य

डॉ. अर्चना दीक्षित, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – सदस्य

डॉ. शोभा महिश्वर, शासकीय माता शबरी महावि. बिलासपुर – सदस्य

डॉ वर्षा डोंडिया, विषय विशेषज्ञ तथा शेष अन्य सदस्य ऑन लाइन उपस्थित रहे,

Part A: Introduction				
Program: **Certificate Course**		Class: **B.A. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	BAHSC-2T		
2	Course Title	Home Science- Paper 2 (Extension Education)		
3	Course Type	Theory		
4	Pre-requisite(if any)	NO		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be enable to: • To understand Basics Knowledge of Home Science Extension Education. • To understand Basic knowledge of Community Development and Role of Home Scientists. • To understand Basic knowledge of Teaching methods & aid. • To understand Basic knowledge of Attitude towards Home Science. • To understand Basic knowledge of Curriculum Planning in Home Science.		
6	Credit Value	**Theory: 4**		
7	Total Marks	**Max. Marks: 50**	**Min Passing Marks: 17**	

Part B: Content of the Course		
Total Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**Introduction of Home Science Extension Education:** Home Science: Concepts, goals and Areas of Home Science & their inter relationship with extension, Principles and methods of home science extension education general concepts of extension work, Objectives of extension education qualities to extension workers, extension education process.	12
II	**Community Development problems and Role of Home Scientists:** Principles of community development organization and function of community development, Role of home scientists in community development programmes of extension education for community. Programmes of community development at central, state, district, block and village level. Family planning programme, Community problems, child marriage, Dowry system, parda-pratha, rural indebtedness unemployment.	12
III	**Teaching methods &aids:** Methods of learning: Discussion, d4emonstration, observation and their application to home science teaching, Extension Methods: their scope advantages and application, Scope and use in Home Science teaching. Extension Methods- their scope advantages and application	12

IV	**Attitude towards Home Science:** Attitudes towards Home Science, Motivation towards Home science, Application of Home Science towards improvement in family living, Job opportunities in Home Science National and International agencies and their collaboration with Home Science, Official organization Home Science Association of India, W.H.O. FAG, CARE, ICAR ICDS, ICSSR, ICMR, IRDP, Adult education.	12
V	**Curriculum Planning in Home Science:** Basic concept of curriculum planning components of curriculum, planning Implementation evolution and improvement required in the existing System of Home Science, Education policy and its relevance to Home Science Programme planning concept, Principles objectives and steps in programme planning.	12
Keywords: Goals of Home Science Education, Planning for Home Science Education, Link of Various agencies for Home science, Curriculum Planning in Home Science.		

Part C: Learning Resources

Text Books. Reference Books, Other Resources

Suggested Readings:

1. Communication And Instructional Technology– Indu Grover, Sushma Kaushik,1st Edition Agrotech PublishingAcademy .
2. Extension communication &Management- G.L. Ray,1st Edition , Kalyani Publishers.
3. Communication And Extension Management- Dr. Jitendra Chauhan,2nd Edition, Kushal Publication.
4. Rural Development principles policies & management- Kartar Singh,3rd Edition , Sage Publications India Pvt Ltd.
5. Extension education & communication V.K. Dubey,Indira Bishnoi,1st Edition,New Age International Publishers.
6. Education and communication for Development by O P Dhama 2nd Edition , Oxford & Ibh Publishing
7. An Introduction To Extension Education- SV Supe, 2nd Eition , Oxford &Ibh Publishing.
8. A Study of Rural Economics - Systems Approach- Vasant Desai,Himalaya Publishing House, New Delhi.
9. SWAYAM portal based course Information and Communication technology- Dr. Aprajita Bhatt
10. SWAYAM portal based course Home science- Extension and Communication management level-1 course no.43.

E-Learning Resource:

1. https://youtu.be/-bW8gYwOlGM
2. https://youtu.be/c7fQOnlyV6s
3. https://youtu.be/6EI5S2wpBlk
4. https://youtu.be/oCJ4NIzch7w
5. https://youtu.be/vOVmKIgSCzs
6. https://youtu.be/NKQlQMVNZdQ

Part D:Assessment and Evaluation
Suggested Continuous Evaluation Methods-: University Exam (UE): 50

आज दिनांक 31.05.2022 को केन्द्रीय अध्ययन मण्डल की मीटिंग गृहविज्ञान विभाग में आयोजित की गई जिसमें निम्नलिखित सदस्य उपस्थित हुए तथा विभिन्न गृहविज्ञान से संबंधित विषयों के पाठ्यक्रम संशोधित एवं अनुमोदित किये गये–

डॉ. सीमा मिश्रा, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – अध्यक्ष,

डॉ. बबीता दुबे – प्रतिनिधि, उच्च शिक्षा विभाग, नया रायपुर

डॉ. भारती सेठी, डॉ. खूबचंद बघेल शासकीय स्नातकोत्तर महाविद्यालय, भिलाई–3, दुर्ग – सदस्य 31/5/22

डॉ. संध्या वर्मा, शासकीय कला एवं वाणिज्य महावि. देवेन्द्र नगर, रायपुर – सदस्य

डॉ. संध्या मदन मोहन,प्राचार्य,भिलाई महिला महाविद्यालय, भिलाई, – सदस्य

एवं अध्यक्ष, अध्ययन मण्डल, हेमचंद यादव विश्वविद्यालय

डॉ. रश्मि मिंज, दूधाधारी महिला महावि. रायपुर – सदस्य

डॉ. अल्का दुग्गल, वामन राव पाटनकर महिला महावि, दुर्ग – सदस्य 31.5.22

डॉ. निशा श्रीवास्तव, होलीक्रास महिला महावि. अंबिकापुर – सदस्य

डॉ. शिप्रा बनर्जी, दूधाधारी महिला महावि. रायपुर – सदस्य

श्रीमती ममता आर, देव, शासकीय कमलादेवी राठी महिला स्नातको. महावि. राजनांदगांव छ.ग. – सदस्य

सुश्री सुषमा घई, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – सदस्य

डॉ. दीपाली राव, शासकीय घनश्याम सिंह गुप्त स्नातको.महावि, बालोद – सदस्य

डॉ. अर्चना दीक्षित, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – सदस्य

डॉ. शोभा महिस्वर, शासकीय माता शबरी महावि. बिलासपुर – सदस्य

डॉ वर्षा डोडिया, विषय विशेषज्ञ तथा शेष अन्य सदस्य ऑन लाइन उपस्थित रहे,

Part A: Introduction				
Program: **Certificate Course**		Class: **B.A. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	BAHSC-1P		
2	Course Title	Home Science- Practical 1		
3	Course Type	Practical		
4	Pre-requisite(if any)	Theoretical knowledge of Human Physiology & Hygiene.		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be enable to: • To Understand Basic knowledge of First aid. • To Make First aid Box. • How to Prepare Therapeutic Diet. • Making and use of Audio-Visual aids- Chart, Poster. • Home Nursing technology.		
6	Credit Value	**Practical:2**		
7	Total Marks	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
	Total No. of Periods: 30
Tentative Practical List	**Note:** This is tentative list; the teacher concern can add more Experiments as Per Requirement. प्रयोग क्रमांक–1प्राथमिक उपचार पेटी (आवश्यक सामान) 1. घाव धोने एवं बांधने का सामान। 2. दर्द कम करने की दवाईयाँ। 3. अपाचन में प्रयुक्त दवाईयाँ। प्राथमिक उपचार पेटी छात्राएँ परीक्षा के समय अपना नाम एवं परिवार के सदस्यों की संख्या लिखकर प्रस्तुत करें प्रयोग क्रमांक–2 रोगी के लिये उपचारात्मक व्यंजनों का अध्यापक द्वारा करके बताना। 1. सब्जियों का सूप। 2. दाल का सूप। 3. उबला अंडा। 4. फटे दूध का पानी (व्हे वाटर)। 5. सब्जी एवं फलों का स्टू (vegetables and fruit stew) इन व्यंजनों की विधि एवं उपयोगिता नोटबुक मे अंकित की जावेगी। प्रयोग क्रमांक–3 प्राथमिक उपचार 1. विभिन्न प्रकार की पिट्टियाँ। 2. घाव की देखभाल। 3. कृत्रिम श्वसन। 4. हड्डी टूट की देखभाल। प्रयोगक्रमांक– 4 गृहपरिचर्चा 1. शरीर के तापमान का चार्ट। 2. गरम एवं ठंडे पानी की थैली तैयार करना। 3. बिस्तर लगाना/चद्दर बदलना। 4. रक्तचाप मापन। 5. ORS तैयारकरना। प्रयोग क्रमांक– 5 दृश्य श्रव्य यंत्र का बनाना। प्रयोग क्रमांक– 6 आंगनबाड़ी भ्रमण।

	संचालित योजनाओं की जानकारीप्राप्तकरना। प्रयोग क्रमांक–7 स्वच्छता, जागरूकता एवंप्रचार–प्रसार के लिए चार्ट/पोस्टर/ फ्लैशकार्ड बनाना। प्रयोगक्रमांक– 8 स्वास्थ्य, जागरूकता एवंप्रचार–प्रसार के लिए चार्ट/पोस्टर/ फ्लैशकार्ड बनाना। प्रोजेक्टवर्क–स्थानीय स्तर पर समाज में प्रचलित भोजन संबंधी भ्रंतियो का पता लगाना एवं उन्हे दूर करने के प्रयास करना (सैम्पल साईज 100, छात्रायें एक गुप्रमें 5) महत्वपूर्ण बातें–छात्राओं द्वारा प्रायोगिक नोटबुक में लिखकर एवं अध्यापक द्वारा प्रति हस्ताक्षरित/प्रमाणित करवाकर परीक्षा के समय प्रस्तुत की जावेगी।

Part C: Learning Resources

Text Books. Reference Books, Other Resources

Suggested Readings:

1. Anatomy, Physiology And Health Education- Rohini Agrawal, Neeraj Agrawal, 2016 Edition, CBS Publisher.
2. Concise Textbook of Physiology – Indu Khurana, Arushi Khurana, 3rd Editin, ELSEVIER.
3. Human Physiology- C.C. Chatterjee,12th Edition, CBS Publisher.
4. Principles of Physiology- Debasis Pramanik 6th Edition J. P. Brothers Medical Publishers.
5. Textbook of medical physiology- Guyton A.C.-Hall. J.E. 9th edition, Prism Books Private Limited Bangalore.
6. Human Physiology in Nutshell - Dr. A. K. Jain, 5th Edition, Arya Publications.
7. Human Anatomy and Physiology-Dr S H Rashid, 2nd Edition, SIA Publishers.
8. Text book of Human Physiology- H D Singh, 3rd Edition, S Chand & Co. Ltd.
9. Anatomical knowledge for nurses- Catherine Arms Strong.

E-learning Resources:

1. Audio Visual Aids https://www.google.com/search?q=audio+visual+aids&oq=audio+visual+aid&aqs=chrome.0.0i433i512j69i57j0i512l8.8257j0j9&sourceid=chrome&ie=UTF-8
2. First Aid Bok https://www.google.com/search?q=first+aid+box&oq=First+Aid&aqs=chrome.1.69i57j0i433i512j46i131i433i512j0i131i433i512j0i512l2j0i433i512j46i131i433j0i131i433i512j0i512.3909j0j9&sourceid=chrome&ie=UTF-8

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods-:

University Exam (UE): 50

आज दिनांक 31.05.2022 को केन्द्रीय अध्ययन मण्डल की मीटिंग गृहविज्ञान विभाग में आयोजित की गई जिसमें निम्नलिखित सदस्य उपस्थित हुए तथा विभिन्न गृहविज्ञान से संबंधित विषयों के पाठ्यक्रम संशोधित एवं अनुमोदित किये गये–

डॉ. सीमा मिश्रा, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – अध्यक्ष,

डॉ. बबीता दुबे – प्रतिनिधि, उच्च शिक्षा विभाग, नया रायपुर

डॉ. भारती सेठी, डॉ. खूबचंद बघेल शासकीय स्नातकोत्तर महाविद्यालय, भिलाई–3, दुर्ग – सदस्य 31/5/22

डॉ. संध्या वर्मा, शासकीय कला एवं वाणिज्य महावि. देवेन्द्र नगर, रायपुर – सदस्य

डॉ. संध्या मदन मोहन,प्राचार्य,भिलाई महिला महाविद्यालय, भिलाई, – सदस्य

एवं अध्यक्ष, अध्ययन मण्डल, हेमचंद यादव विश्वविद्यालय

डॉ. रश्मि मिंज, दूधाधारी महिला महावि. रायपुर – सदस्य

डॉ. अल्का दुग्गल, वामन राव पाटनकर महिला महावि, दुर्ग – सदस्य 31.5.22

डॉ. निशा श्रीवास्तव, छोलीकास महिला महावि. अंबिकापुर – सदस्य

डॉ. शिप्रा बनर्जी, दूधाधारी महिला महावि. रायपुर – सदस्य

श्रीमती ममता आर, देव, शासकीय कमलादेवी राठी महिला स्नातको. महावि. राजनांदगांव छ.ग. – सदस्य

सुश्री सुषमा घई, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – सदस्य

डॉ. दीपाली राव, शासकीय घनश्याम सिंह गुप्त स्नातको.महावि, बालोद – सदस्य

डॉ. अर्चना दीक्षित, शासकीय बिलासा कन्या महाविद्यालय, बिलासपुर – सदस्य

डॉ. शोभा महिस्वर, शासकीय गाता शबरी महावि. बिलासपुर – सदस्य

डॉ वर्षा डोंडिया, विषय विशेषज्ञ तथा शेष अन्य सदस्य ऑन लाइन उपस्थित रहे.

INSURANCE PRINCIPAL & PRACTICE (Paper Code-0139)

PAPER - I

LIFE INSURANCE : M.M. : 50

UNIT-1 Introduction :

Need for security against economic difficulties, Risk and uncertinty, Individual value system, Individual, Life Insurance Nature and uses of Life Insurance, Life Insurance as a collateral, as a measure of financing business continuation, as a protection to property, as a measure of investment.

UNIT-2 Life Insurance Contract :

Distinguishing characteristics, Utmost Good Faith, Insurable Interest, Caveat Emptor, Unilateral and alleatory nature of contract, proposal and application form, Warranties Medical examination, policy construction and delivery, policy provision, lapse revival, surrender value, paid-up policies, maturity, nomination and assignment. Suicide and payment of insured amount, Loan, to policy holders.

UNIT-3 Life Insurance Risk :

Factors governing sum assured, Methods of calculating economic risk in life insurance proposal. Measurement of risk and mortality table, Calculation of Premium, Treatment of sub-standard risks. Life Insurance Fund, valuation and investment of surplus, Payment of bonus.

UNIT-4 Life Insurance Policies :

Types and their applicability to different. Situations, Important life Insurance Policies issued by the life Insurance Corporation of India. Life Insurance annuities. Important legal provisions and judicial pronouncements in India.

UNIT-5 Salesmanshi Life Insurance p :

Rules of agancy Essential qualities of an ideal insurance salesman, Rules to canvass business from prospective customers, After-sale service to policy holders.

GENERAL INSURANCE (Paper Code-0140)

PAPER - II **M.M. : 50**

UNIT-1 1. Introduction to risk and insurance.

(A) Risk (B) The treatment of Risk

2. The structure and operation of the insurance business.

UNIT-2 (a) Insurance contract fundamentals.

(b) Insurance marketing.

(c) Insurance loss payment.

(d) Underwriting, rating, reinsurance, and other functions.

UNIT-3 General Insurance corporation and other Insurance institutions.

Working of GIC in India; Types of risks assumed and specific policies issued by ECGC.

UNIT-4 Health Insurance :

(a) Individual health insurance.

(b) Group health insurance.

UNIT-5 (a) Motor Insurance.

(b) Multiple line and all lines Insurance such as rural Insu-rance - Hull Insurance-etc.

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FUNCTIONAL ENGLISH

(Paper Code-0137)

PAPER - I **M.M. : 50**

UNIT-1 (a) Linguastics and Phonetics.
(b) Phonology.

UNIT-2 (a) The Organs of Speech
(b) Speech Sounds - Vovels and Consonants

UNIT-3 Consonant Clusters in English

UNIT-4 Phonetic symbols

UNIT-5 Transcriptions

Based on a text of English Phonetics for Indian students by Balsybramanium.

FUNTIONAL ENGLISH

(Paper Code-0138)

PAPER - II **M.M. : 50**

UNIT-1 Articles, Parts of Speech, Linking Verbs Nagative sentences.

UNIT-2 Questions, Agreement of verb and subject, Transitive and Intrasitive regular and in-
regular verbs.

UNIT-3 Tenses

UNIT-4 Question Tags, Transformetin Active and Passive Voice, Direct and Indirects S

UNIt-5 Common Errors in English.

Based on F.T. words Grammer

Dr. M. Chakraborty Dr. S Gupta DR. MERILY ROY

स्नातक पाठ्यक्रम के तहत – ड्राइंग और पेंटिंग
पेपर – I (सिद्धांत)

क्लासः बी.ए.		वर्षः प्रथम	सत्रः 2023–24
विषय – ड्राईंग एवं पेन्टिंग			
1	विषय क्रमांक		
2	विषय शीर्षक	कला के मूल सिद्धांत (Paper I)	
3	पाठ्यक्रम का प्रकार (मुख्य पाठ्यक्रम / वैकल्पिक / सामान्य ऐच्छिक / वोकेशनल.....)	मूल पाठ्यक्रम	
4	पूर्व–आवश्यकता (यदि कोई हो)	10+2 किसी भी विषय में	
5	कोर्स लर्निंग आउटकम (सीएलओ)	छात्रों को कला के सिद्धांत के बारे में जानकारी मिलती है। कला भाषा "कला के तत्व और सिद्धांत" नामक अवधारणाओं पर आधारित है। कला के मूल 6 तत्वों का परिचय अर्थात, रेखा, आकार, रंग, बनावट, मूल्य।	
6	क्रेडिट मूल्य	2	
7	कुल अंक	Max. Marks: 50	Min. Passing Marks: 17

व्याख्यानों की कुल संख्या– ट्यूटोरियल– प्रैक्टिकल (प्रति सप्ताह घंटों में) : L-T-P: 2-0-0

इकाई	शीर्षक	व्याख्यान की संख्या **(Total: 30)**
I	कला की परिभाषा और कला का वर्गीकरण।	
II	षडंगाः भारतीय कला और चित्रकला के छह अंग।	
III	कला के तत्वः रेखा, आकार, रंग, स्वर, बनावट,	
IV	छत्तीसगढ़ में विद्यमान मूर्तिकला के रूपः 1. बस्तर की गढ़वा शिल्प। 2. धातु कास्टिंगः सरगुजा क्षेत्र की मलार जाति के बीच प्रचलित। 3. धातु ढलाईः झारा जाति के बीच प्रचलित 4. रायगढ़ क्षेत्र।	

सुझाए गए रीडिंगः

- कला बुनियादी बातेंः रंग, प्रकाश, संरचना, शरीर रचना विज्ञान, परिप्रेक्ष्य और गहराई : कुल 3 प्रकाशन।
- दृश्य कलाकारों के लिए प्रकाशः रिचर्ड योट द्वारा कला और डिजाइन में दृश्य प्रकाश को समझना और उसका उपयोग करना।
- रंग और प्रकाशः जेम्स गुर्नी द्वारा यथार्थवादी चित्रकार के लिए एक गाइड।
- चौमासा पत्रिका।

मूल्यांकन पद्धतिः

	टाइप	आबंटित अंक
	कक्षा परीक्षण (आंतरिक मूल्यांकन)	05 अंक
	विश्वविद्यालय परीक्षा	45 अंक
	कुल	**50** अंक

स्नातक पाठ्यक्रम के तहत – ड्राइंग और पेंटिंग

पेपर – I (प्रायोगिक)

क्लासः बी.ए.		वर्षः पहला	सत्रः 2023–24
विषय – ड्राईंग एवं पेन्टिंग			
1.	विषय क्रमांक		
2.	विषय शीर्षक	Still Life (Paper I)	
3.	पाठ्यक्रम का प्रकार (मुख्य पाठ्यक्रम / वैकल्पिक / सामान्य ऐच्छिक / वोकेशनल...)	मूल पाठ्यक्रम	
4.	पूर्वापेक्षा (यदि कोई हो)	10+2 किसी भी विषय में	
5.	कोर्स लर्निंग परिणाम (सीएलओ)	लक्ष्य वस्तुओं को यथासंभव सटीक रूप से चित्रित करना या चित्रित करना है। वस्तुओं के बीच संबंध खोजें और एक वस्तु के आकार का अध्ययन करें, जहां प्रकाश गिरता है और अन्य विषयों के संबंध में छाया को दर्शाता है। किसी भी प्रकार के रूप से संरचना अध्ययन की भावना विकसित करने के लिए उदाहरण के लिएः क्षेत्र, घन आदि।	
6.	क्रेडिट मूल्य	4	
7.	कुल अंक	Max. Marks: 50	Min. Passing Marks: 17
व्याख्यानों की कुल संख्या– ट्यूटोरियल– प्रैक्टिकल (प्रति सप्ताह घंटों में) L-T-P: 0-0-4			

इकाई	शीर्षक	व्याख्यान की संख्या **(Total: 60)**
I.	पेंसिल जैसे विभिन्न माध्यमों से वस्तुओं का चित्र बनाना	
II.	कलम और स्याही।	
III.	चारकोल जैसे विभिन्न माध्यमों से	
IV.	पेंसिल, रंगीन पेंसिल आदि, और वस्तुओं के चित्र में इसका उपयोग।	

सुझाए गए रीडिंगः

- हयाशी स्टूडियो (1994), वाटर कलर रेंडरिंग, ग्राफिक–शा पब्लिशिंग कंपनी लिमिटेड।
- फिशर ई. (2006), कलर स्टडीज, NYUS I, फेयरचाइल्ड पब्लिकेशन।
- स्टिल लाइफ पेंटिंग, रिचमंड।

मूल्यांकन पद्धति

प्रकार	आबंटित अंक
आंतरिक मूल्यांकन (सत्रीय कार्य और अभ्यास रिकॉर्ड फ़ाइल)	10 Marks
विश्वविद्यालय परीक्षाः • समयः 4 घंटे • पेपर साईज : ¼ IMP. • माध्यम – जलरंग	40 Marks
कुल	**50 Marks**

नोट : ¼ आईएमपी आकार के न्यूनतम पांच कार्यों को प्रैक्टिस रिकॉर्ड फाइल के रूप में जमा करने की आवश्यकता है।

स्नातक पाठ्यक्रम – ड्राईंग एवं पेंन्टिग – **II** (प्रायोगिक)

कक्षा – बी0 ए0		वर्ष – प्रथम	सत्र : 2023-24
विषय – ड्राईंग एवं पेंन्टिग			
1	संकाय कोड		
2	संकाय शीर्षक	बेसिक डिजाइन (पेपर II)	
3	पाठ्यक्रम का प्रकार (मुख्य पाठ्यक्रम / वैकल्पिक / सामान्य ऐच्छिक / वोकेशनल...)	मूल पाठ्यक्रम	
4	पूर्व–आवश्यकता (यदि कोई हो)	10+2 किसी भी विषय में	
5	कोर्स लर्निंग आउटकम (सीएलओ)	इस पाठ्यक्रम का उद्देश्य यह समझना है कि प्रकृति के तत्वों यानी फूल, पत्ते, जानवर आदि और ज्यामितीय पैटर्न जैसे गोलाकार, वृत्त, त्रिकोण आदि का उपयोग करके बुनियादी डिजाइन कैसे विकसित किया जाता है।	
6	क्रेडिट मूल्य	4	
7	कुल अंक	Max. Marks: 50	Min. Passing Marks: 17
व्याख्यानों की कुल संख्या– ट्यूटोरियल– प्रैक्टिकल (प्रति सप्ताह घंटों में): एल–टी–पी: 0–0–4			
इकाई	शीर्षक	व्याख्यानों की संख्या **(Total: 60)**	
I	पेंसिल जैसे विभिन्न माध्यमों से वस्तुओं का चित्र बनाना, कलम और स्याही।		
II	विभिन्न माध्यमों जैसे चारकोल पेंसिल, रंगीन पेंसिल आदि के माध्यम से स्टिल लाइफ ड्राइंग, और ड्राइंग में इसका उपयोग वस्तुओं।		
III	कलर थ्योरी यानी कलर सिस्टम (RGB, CMYK आदि), Color पहिया और रंग आयाम		
IV	2 डी में ड्राइंग और स्केचिंग।		

सुझाए गए रीडिंग :

- हयाशी स्टूडियो (1994), वाटर कलर रेंडरिंग, ग्राफिक–शा पब्लिशिंग कंपनी लिमिटेड।
- फिशर ई। (2006), कलर स्टडीज, NYUSA, फेयरचाइल्ड पब्लिकेशन।
- स्टिल लाइफ पेंटिंग, रिचमंड।

मूल्याँकन पद्धति	
प्रकार	आबंटित अंक
आंतरिक मूल्यांकन (सत्रीय कार्य और अभ्यास रिकॉर्ड फ़ाइल)	10 अंक
विश्वविद्यालय परीक्षा : समय: 4 घंटे कागज का आकार : ¼ IMP माध्यम : जल रंग	40 अंक
कुल अंक	**50** अंक

नोट : ¼ IMP आकार के न्यूनतम पांच कार्यों को प्रैक्टिस रिकॉर्ड फाइल के रूप में जमा करने की आवश्यकता है।

B.A. FINE ART (SCULPTURE)
Syllabus for Theory & Practical

B.A. Sculpture Course is divided in to Three parts. B.A. I, II & III all Examination is conducted by University for all class maximum marks will be 150. The three parts details are as Under.

PAPER- I
B.A. I YEAR (THEORY)
HISTORY OF INDIAN SCULPTURE

Time : 3 Hrs Marks -50

1. Sculpture Techniques – Definitions of Sculpture, Modeling, Carving, construction, uses of tools, fundamentals of Sculpture – volume, rhythm, texture, balance, form, etc.
2. Indian Prehistoric and Proto historic Art – Indus valley Sculptures from Harappa, Mohenjo-Daro, etc (Sculpture like Dancing girl, priest/Yogi, Seals, Pottery and Toys) Architecture and city plan – Granary, Great Bath, Citedel, etc.
3. Mauryan Period Art –

i) Court Art Folk art
ii) Art is Mathura and Gandhar, Sarnath Lion Capital, Lauriya Nandangarh, Besnagar, etc.

PRACTICAL

There will be Two practical paper. Evolution will be made by the external and the Internal Examiners. Together and Sessional marking is made by the class Teacher.

B.A. I YEAR (Sculpture)
II Paper - Drawing

Scheme of Examination
Time : 6 hrs.
Size – 12''X15''

Time : 6 hrs.
Total marks -50
Examination – 40
Sessional – 10

Sessional work - As by class work must be Submitted – 50 sketches and Drawing

i) Make a Drawing from nature, human and animal form, human and animal body parts, anatomy, etc.
ii) Antique Study – Study from icon/antique sculptures/head etc.
iii) Clay Modeling – A study of human body parts like, nose, ears, lips, hand, feet, torso, eye, limbs,etc.
iv) Composition- with human figure, birds and animal form.
v) Medium – Waste Mould in plaster of Paris and P.O.P. and cement casting, Terracotta.

(Dr. Richa Thakur) (Dr. Milind Ambatkar) (Yogendra Tripathi) 01/5/19 (Prof. SHIBA PRASAD CHOUDHURY) 04.5.2019

B.A. EDUCATION PART - I

PAPER - I

EDUCATION AND SOCIETY

M.M. 75

(Paper Code-0123)

COURSE OBJECTIVES

To enable the students to understand -

1. The general aims of Education alongwith Nature types and Scope of educations.
2. Meaning of Major Philosophies of education and function of education.
3. Meaning of curriculum and its Planning and Construction.
4. The Importance of Play and activity oriented education and Modern Methods of Teaching.
5. Specific aims of education as per the present day needs.

UNIT-1 Nature and Scope of Education, Education as a Science, Education as a Social
Process, Factors of Education.

- Aims of Education-Individual, Social, Vocational and Democratic.
- Formal, informal and non formal agencies of education, Relation between School and Society.

UNIT-2

- School a Miniature Society.
- Education and State-To talitarian and Democratic concepts, State Control over Education, Nature.
- Centralization and Decentralization.

UNIT-3

- Curriculum definition, Types of Curricula. Principles of Curriculum Construction,
- Child Centred and Life Centred Curricula.
- Co-Curricular activities.
- Education and Craft, Principle of Basic Education.
- Freedom and Discipline, Need of discipline in and out of school, discipline and
- Order, Free disciplin

UNIT-4

- Value Education, MEaning of Human Values. Their development, Some Transactional Strategies.

UNIT-5 Education for National Integration, I nternational understanding and education
for Human resource development, Education for Licture.
Secularism and Education.

Shiksha Sidhant - Pathak and Tyagi - Vinod Pustak Mandir, Agra.

PAPER - II
PROBLEMS OF EDUCATION

M.M. 75

(Paper Code-0124)

UNIT-1 ● Problems and suggestions for improvement in Primary Educn.

- Problems and suggestions for improvement in Secondary Educn.

UNIT-2 ● Problems and Suggestions for improvement in Higher Educn.

- Problems and Suggestions for improvement in Teacher Educn.

UNIT-3 ● Problems and Suggestions for improvement in Women Educn.

- Problems and Suggestions for improvement in Adult Educn.

UNIT-4 ● Problems and Suggestions for improvement in Technical Education.

- Problems and Suggestions for improvement in Distance Education.

UNIT-5 ● Problems and Suggestions for improvement in Population Education.

- Problems and Suggestions for improvement in Environmental Education.

BOOK RECOMMENDED :

1. A. Mishra - The Financing of Indian Education.
2. Nurullah and Naik - A History of Education in India.
3. S. N. Mukherjee - Education in India Today and Tomorrow.
4. K.G. Saiyad - Problems of Education Reconstruction.
5. Mahatma Gandhi - Our Language Problems.
6. S.R. Dongerkerry - University and their Problems.
7. R.V. Parulacker - Literacy in India.
8. G. Ghaurasia - New Era in Teacher Education.
9. J.P. Naik - Education Planning in India.
10. J.C. Agrawal - Progress of Education in India.

General Information of B.Sc. Home Science Program

1. **Title and code of the program:** The title of the programme shall be Bachelor of Home Science (B.Sc. H.Sc.) The program code of B.Sc. Home Science shall be "**HSc2022**".
2. **Eligibility for admission:** Eligibility of admission in B.Sc. Home Science will be as follow:
   i. Students must pass H.Sc. (Class 12th) in any stream/Three year diploma course in any branch of technical education / Vocational Education or equivalent from a recognized board.
   ii. Students must have a minimum aggregate of 40% marks in HSc examination (Relaxation in percentage will be as per rule of C.G. Govt.).
3. **Scheme of examination:** Each theory paper is divided into three components as follow, there shall not be any Internal Assessment (IA) for practical part of every subject :-
   i. Total Marks:100 Marks
   ii. University Examination (UE): 60 Marks
   iii. Internal Assessment (IA): 15 Marks
   iv. Practical : 25 Marks
4. **Internal Assessment (IA):** The structure of IA shall be as follow:
   i. **Internal test (15 Marks):** There shall be two internal tests of 15 marks each, the average of both tests shall be considered as the marks of internal test. The marks of assignment shall be of 15, the average of the both tests shall be added with marks of assignment, and the total will be divided by two.
5. **University Examination (UE):** The pattern of examination shall be as follow:
   i. There shall be three sections of question paper: A, B and C.
   ii. Section A (20 Marks) shall consists "Very Short Answer questions", Three questions from each unit with internal choice of solving two.
   iii. Section B (20 Marks) shall consist of "Short answer questions" from each unit, two questions from each unit with internal choice of solving one.
   iv. The Section C (20 Marks) shall consist "Long answer questions", one from each unit, with internal choice of solving any two questions, each has 10 marks.
6. **Programme Learning Outcomes (PLO):** On completion of this programme, the students are expected to:

   PLO1: To Apply knowledge of Basic Nutrition, Textile and Fibre Science, Resource Management , Community Development , Human Development with basic knowledge of women empowerment and Computer Basics at the individual level , community level and also on commercial level.

   PLO2: To apply knowledge of nutrition as Medical Nutrition Therapy for disease correction, Technical knowledge of physio-chemical nature of textile fibres and yarn making, working of various systems in human body, Skillful communication techniques, Developmental stages in life cycle and consumer economics related knowledge.

   PLO3: To apply knowledge of Biochemistry of Macro molecules as Protein, Lipids, Carbohydrates and Micro-Molecules as Vitamin, Minerals, Antioxidants, Preservation Technology, Extension education for the community and national benefit, Care of human in early years of life, Principles of Art and Designing and skills of apparel making with fashion designing.

   PLO4: To apply new technology in the field of Nutrition as Neutrogenomics, Nanotechnology for Medical Nutrition Therapy, Management of human resources properly, advances in Textile science, advances in Human developments as maintenance of good mental health and Research Methodology with latest data collection and analysis details in the field of Home Science Research.

B.Sc. (HOME SCIENCE)

Year	Course Code	Subject Name	Theory / Practical	Total Credit		Marks		
					UE	IA	Total	
							Max	Min
First	HSCF-1T	Environmental studies	Theory	4	60	15	75	25
	HSCF-2T	Hindi Language	Theory	4	60	15	75	25
	HSCF-3T	English Language	Theory	4	60	15	75	25
	HSC-1T	Basic Nutrition	Theory	4	60	15	75	25
	HSC-2T	Introduction to Resource Management	Theory	4	60	15	75	25
	HSC-3T	Introduction to Human Development	Theory	4	60	15	75	25
	HSC-4T	Textile and Clothing	Theory	4	60	15	75	25
	HSC-5T	Community Development	Theory	4	60	15	75	25
	HSC-6T	Personal Empowerment and Computer Basics	Theory	4	60	15	75	25
	HSCF-1P	Environmental Study Field work	Practical	2	25	NA	25	25
	HSC-1P	Basic Nutrition	Practical	2	25	NA	25	09
	HSC-2P	Introduction to Resource Management	Practical	2	25	NA	25	09
	HSC-3P	Introduction to Human Development	Practical	2	25	NA	25	09
	HSC-4P	Textile and Clothing	Practical	2	25	NA	25	09
	HSC-5P	Community Development	Practical	2	25	NA	25	09
	HSC-6P	Personal Empowerment and Computer Basics	Practical	2	25	NA	25	09
		Total		**50**	**715**	**135**	**850**	

Second	HSCF-4T	Hindi Language	Theory	4	60	15	75	25
	HSCF-5T	English Language	Theory	4	60	15	75	25
	HSC-7T	Nutritional Management in Health & Diseases	Theory	4	60	15	75	25
	HSC-8T	Textile and Fiber Science	Theory	4	60	15	75	25
	HSC-9T	Human Physiology and Community Nutrition	Theory	4	60	15	75	25
	HSC-10T	Communication Process	Theory	4	60	15	75	25
	HSC-11T	Life Span Development	Theory	4	60	15	75	25
	HSC-12T	Consumer Economics	Theory	4	60	15	75	25
	HSC-7P	Nutritional Management in Health and Diseases	Practical	2	25	NA	25	09
	HSC-8P	Textile and Fiber Science	Practical	2	25	NA	25	09
	HSC-9P	Human Physiology and Community Nutrition	Practical	2	25	NA	25	09
	HSC-10P	Communication Process	Practical	2	25	NA	25	09
	HSC-11P	Life Span Development	Practical	2	25	NA	25	09
	HSC-12P	Consumer Economics	Practical	2	25	NA	25	09
		Total		**44**	**630**	**120**	**750**	

Third	HSCF-6T	Hindi Language	Theory	4	60	15	75	25
	HSCF-7T	English Language	Theory	4	60	15	75	25
	HSC-13T	Nutritional Biochemistry	Theory	4	60	15	75	25
	HSC-14T	Food Preservation	Theory	4	60	15	75	25
	HSC-15T	Early Childhood Care and Education	Theory	4	60	15	75	25
	HSC-16T	Extension Education	Theory	4	60	15	75	25
	HSC-17T	Foundation of Art and Design	Theory	4	60	15	75	25
	HSC-18T	Apparel Making and Fashion Designing	Theory	4	60	15	75	25
	HSC-13P	Nutritional Biochemistry	Practical	2	25	NA	25	09
	HSC-14P	Food Preservation	Practical	2	25	NA	25	09
	HSC-15P	Early Childhood Care and Education	Practical	2	25	NA	25	09
	HSC-16P	Extension Education	Practical	2	25	NA	25	09
	HSC-17P	Foundation of Art and Design	Practical	2	25	NA	25	09
	HSC-18P	Apparel Making and Fashion Designing	Practical	2	25	NA	25	09
		Total		**44**	**630**	**120**	**750**	

Note- There shall be four extra credits in each year for internship/ Apprenticeship .The certificate of extra credits for this would be provided by the concern university and it is not mandatory.

Abbreviations Used- **UE: University Examination** **IA: Internal Assessment**

Note:

1. Students have to pass the Environment Studies (Additional & Compulsory) till the end of the maximum duration provided for the program. Degree will not be awarded without passing the environmental studies paper.
2. There shall be four extra credits in all the years of under graduation for internship/apprenticeship/Skill development program/Value added program. The certificate of extra credits would be provided by the university concern and is not mandatory.

REVISED ORDINANCE No. 23
(As per State U.G.C. Scheme)

BACHELOR OF COMMERCE

1. The three-year course has been broken up into three Parts.
   Part-I known as B.Com. Part-I Examination at the end of the first year.
   Part-II Examination at the end of the second year
   Part-III Examination at the end of the third year.

2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of C.G. Board of Secondary Education, C.G. or any other examination recognized by the University or C.G. Board of Secondary Education as equivalent thereto, has attended a regular course of study in an affiliated college or in the Teaching Department of the University for one academic year shall be eligible for appearing at the B.Com Part-I examination.

3. A candidate who after passing B.Com. Part-I examination of the University or any other examination recognized by the University as equivalent thereto has attended a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Com. Part-II examination.

4. A candidate who after passing B.Com. Part-II examination of the University has completed a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Com. Part-III examination.

5. Besides regular students, subject to their compliance with this Ordinance, ex-students and non-collegiate students shall be eligible for admission to the examination as per provisions of Ordinance No. 6 relating to Examinations (General).

   Provided that non-collegiate candidates shall be permitted to offer only such subjects/papers as are taught to the regular students at any of the University Teaching Department or College.

6. Every candidate for B.Com. examination shall be examined in subjects as mentioned in the marking scheme and course or studies.

7. A candidate who has passed the B.Com. Part-III examination of the University shall be allowed to present himself for examination in any of additional subjects prescribed for the B.Com. examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.Com.. Part I examination in the subject which he proposes to offer and then the B.Com. Part-II and Part-III examination in the same subject. Successful candidate will be given a certificate to that effect.

8. In order to pass at any part of the three-year degree course examination, an examinee must obtain not less than 33% of the total marks in each paper/group of subjects. In-group where both theory and practical examinations are provided an examinee must pass in both theory and practical part of examination separately.

9. Candidate will have to pass separately at the Part-I, Part-II and Part-III examination. No division shall be assigned on the result of the Part-I and Part-II examinations. In determining the division of the Final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken into account. Candidate will not be allowed to change subjects after passing Part-I Examination.

Provided in case of candidate who has passed the examination through the supplementary examination having failed in one subject group only the total aggregate marks being carried over for determining the division, shall include the actual marks obtained in the subject group in which he appeared at the supplementary examination.

10 Successful examinees at the Part-III examination obtaining 60% or more marks shall be placed in the First division, those obtaining less than 60% but not less than 45% marks in the Second division and other successful examinees in the Third division.

B.COM. PART-III

SCHEME OF EXAMINATION

Subject			Max. Marks	Min Marks
A.	**FOUNDATION COURSE-**			
	(a)	Hindi Language	75	150	50
	(b)	English Language	75		
B.	**COMPULSORY CORE COURSE:**			
	i	Income Tax	75		25
	ii	Indirect Tax	75		25
	iii	Management Accounting	75		25
	iv	Auditing	75		25
and any one of the following Continuation Optional Group.					
OPTIONAL GROUP – A					
	i	Financial Management	75		25
	ii	Financial Marketing	75		25
OPTIONAL GROUP – B					
	i	Principle of Management	75		25
	ii	International Market	75		25
OPTIONAL GROUP – C					
	i	Information Technology and its Applications in Business	75		25
	ii	Essentials of E-Commerce	75		25
OPTIONAL GROUP – D					
	i	Fundamentals of Insurance	75		25
	ii	Money & Banking System	75		25

USE OF CALCULATORS

The Students of Degree/P.G. Classes will be permitted to use of Calculators in the examination hall from annual 1986 exammination on the following conditions as per decision of the standing committee of the Academic Council at its meeting held on 31-01-1986

1. Student will bring their own Calculators.
2. Calculators will not be provided either by the university or examination centres
3. Calculators with, memory and following variables be permitted +, -, x, % square, reciprocal, expotentials log, square root, trigonometric functions, viz, sine, cosine, tangent etc. Factorial summation, xy, yx, and in the light of objective approval of merits and demerits of the viva only will be allowed.

Part - I
SYLLABUS FOR ENVIRONMENTAL STUDIES AND HUMAN RIGHTS
(Paper code-0828)

MM. 75

इन्वारमेंटल साईंसेस के पाठ्यक्रम को स्नातक स्तर भाग–एक की कक्षाओं में विश्वविद्यालय अनुदान आयोग के निर्देशानुसार अनिवार्य रूप से शिक्षा सत्र 2003–2004 (परीक्षा 2004) से प्रभावशील किया गया है। स्वशासी महाविद्यालयों द्वारा भी अनिवार्य रूप से अंगीकृत किया जाएगा।

भाग 1, 2 एवं 3 में से किसी भी वर्ष में पर्यावरण प्रश्न–पत्र उत्तीर्ण करना अनिवार्य है। तभी उपाधि प्रदाय योग्य होगी।

पाठ्यक्रम 100 अंकों का होगा, जिसमें से 75 अंक सैद्धांतिक प्रश्नों पर होंगे एवं 25 अंक क्षेत्रीय कार्य (Field Work) पर्यावरण पर होंगे।

सैद्धांतिक प्रश्नों पर अंक – 75 (सभी प्रश्न इकाई आधार पर रहेंगे जिसमें विकल्प रहेगा)

(अ) लघु प्रश्नोंत्तर – 25 अंक
(ब) निबंधात्मक – 50 अंक

Field Work – 25 अंकों का मूल्यांकन आंतरिक मूल्यांकन पद्धति से कर विश्वविद्यालय को प्रेषित किया जावेगा। अभिलेखों की प्रायोगिक उत्तर पुस्तिकाओं के समान संबंधित महाविद्यालयों द्वारा सुरक्षित रखेंगे।

उपरोक्त पाठ्यक्रम से संबंधित परीक्षा का आयोजन वार्षिक परीक्षा के साथ किया जाएगा।

पर्यावरण विज्ञान विषय अनिवार्य विषय है, जिसमें अनुत्तीर्ण होने पर स्नातक स्तर भाग–एक के छात्र/छात्राओं को एक अन्य विषय के साथ पूरक की पात्रता होगी। पर्यावरण विज्ञान के सैद्धांतिक एवं फील्ड वर्क के संयुक्त रूप से 33ः (तैंतीस प्रतिशत) अंक उत्तीर्ण होने के लिए अनिवार्य होंगे।

स्नातक स्तर भाग–एक के समस्त नियमित/भूतपूर्व/अमहाविद्यालयीन छात्र/छात्राओं को अपना फील्ड वर्क सैद्धांतिक परीक्षा की समाप्ति के पश्चात् 10 (दस) दिनों के भीतर संबंधित महाविद्यालय/परीक्षा केन्द्र में जमा करेंगे एवं महाविद्यालय के प्राचार्य/केन्द्र अधिक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे।

UNIT-I THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, Scope and

Importance Natural Resources:

Renewable and Nonrenewable Resources

(a) Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forests and tribal people and relevant forest Act.

(b) Water resources: Use and over-utilization of surface and ground water, floods drought, conflicts over water, dam′s benefits and problems and relevant Act.

(c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.

(d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity.

(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.

(f) Land resources: Land as a resource, land degradation, man induced landslides soil erosion and desertification.

(12 Lecture)

UNIT-II ECOSYSTEM

(a) Concept, Structure and Function of and ecosystem

- Producers, consumers and decomposers.
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem.

(b) Biodiversity and its Conservation

- Introduction - Definition: genetic. species and ecosystem diversity
- Bio-geographical classification of India.
- Value of biodiversity: Consumptive use. Productive use, social ethics, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as mega-diversity nation.

- Hot spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict.
- Endangered and endemic species of India.
- Conservation of biodiversity: In situ and Ex-situ conservation of biodiversity.

(12 Lecture)

UNIT- III

(a) Causes, effect and control measures of

- Air water, soil, marine, noise, nuclear pollution and Human population.
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Disaster Management: floods, earthquake, cyclone and landslides.

(12 Lecture)

(b) Environmental Management

- From Unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people, its problems and concerns.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.
- Wasteland reclamation
- Environment protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and Human Health.

UNIT- IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights. Protection of Human Rights under the UNO Charter, protection of Human Rights under the Universal Declaration of Human Rights, 1948. Convention on the Elimination of all forms of Discrimination against women. Convention on the Rights of the Child, 1989.

UNIT- V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution of India, Directive Principles of State policy under the Constitution of India, Enforcement of Human Rights in India. Protection of Human Rights under the Human Rights Act, 1993- National Human Rights Commission, State Human Rights Commission and Human Rights court in India. Fundamental Duties under the Constitution of India.

Reference/ Books Recommended

1. SK Kapoor- Human rights under International Law and Indian Law.
2. HO Agrawal- Internation Law and Human Rights
3. एस.के. कपूर – मानव अधिकार
4. जे.एन. पान्डेय – भारत का संविधान
5. एम.डी. चतुर्वेदी –भारत का संविधान
6. J.N.Pandey - Constitutional Law of India
7. Agarwal K.C. 2001 Environmental Biology, Nidi pub. Ltd. Bikaner
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13. Down to Earth, Center for Science and Environment (R)
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25. Townsend C. Harper J. And Michael Begon, Essentials of Ecology, Blackwell Science(TB)
26. Trivedi R.K.Handbook of Environment Laws, Rules, Guidlines, Compliances and Standards, Vol land II, Environment Media(R)
27. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science publication (TB)
28. Wanger K.D.1998, Environmental Management. W.B. Saunders Co. Philadelphia, USA 499

बी.ए./ बी.एस-सी./ बी.कॉम./ बी.एच.एस.सी. भाग -एक

(आधार पाठ्यक्रम)

प्रथम प्रश्नपत्र

हिंदी भाषा

कोड....

पूर्णांक 75

क्रेडिट 05

पाठ्यक्रमका उद्देश्य:-

1.हिंदी भाषाके प्रयोजनात्मक स्वरूप का सामान्य ज्ञान प्रदान करना।
2.कंप्यूटर में हिंदी भाषा के प्रयोग की आवश्यकता के अनुरूप कंप्यूटर की कार्य प्रणाली की आरंभिक जानकारी से अवगत होने के लिए प्रेरित करना।
3.हिंदी व्याकरण की बुनियादी ज्ञान संप्रेषण कौशल तथा भाषायी दक्षता से अवगत कराना।
4.साहित्य और समाज को समझने की दिशा में रुझान उत्पन्न करना।

पाठ्य विषय:-

इकाई 1. (क) पल्लवन, पत्राचार, अनुवाद (ख) एक टोकरी भर मिट्टी : माधवराव सप्रे बड़े भाई साहब : प्रेमचंद	अंक 15 18 कालखंड
इकाई 2. (क) संक्षेपण, हिंदी में संक्षिप्तिकरण, हिंदी-अपठित गद्यांश, पारिभाषिक शब्दावली, हिंदी में पदनाम, मुहावरे एवंलोकोक्तियाँ (ख) जागो फिर एक बार: सूर्यकांत त्रिपाठी 'निराला' जन्मदिन ('मिट्टी से कहूँगाधन्यवाद' संग्रह से):एकांत श्रीवास्तव	अंक 15 18 कालखंड
इकाई 3. (क) शब्द-शुद्धि, वाक्य-शुद्धि, शब्द-ज्ञान- पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी-शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द (ख) भोलाराम का जीव : हरिशंकर परसाई जीप पर सवार इल्लियां: शरद जोशी	अंक 15 18 कालखंड
इकाई 4.(क) मानक भाषा का अर्थ, मानक हिंदी भाषाका अर्थ, स्वरूप,	अंक 15

23.02.2023 23/2/23 23/2/23 23/2/23 23.2.2023

विशेषताएँ, मानक, उपमानक, अमानक-भाषा (ख)शिकागो से स्वामी विवेकानंद का पत्र सत्य और अहिंसा : महात्मा गांधी	18 कालखंड
इकाई 5. (क) देवनागरी लिपि- नामकरण, स्वरूप, विशेषताएँ, कंप्यूटर का सामान्य परिचय, कंप्यूटर में हिंदी का अनुप्रयोग। (ख)कछुआ-धरम : चन्द्रधर शर्मा 'गुलेरी' छत्तीसगढ़ का वैभव: हीरालाल शुक्ल	अंक 15 18 कालखंड

मूल्यांकन योजना:-

प्रत्येक इकाई से एक-एक प्रश्न पूछे जाएंगे। एक प्रश्न के 15 अंक होंगे। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमश:08 एवं 07 होंगे। प्रश्नपत्र का पूर्णांक75 निर्धारित है।

प्रश्नपत्रकेपूर्णांककादसप्रतिशतअंकआंतरिकमूल्यांकनकेलिएनिर्धारितहै।

पाठ्यक्रम अधिगम परिणाम:-

इस पाठ्यक्रम को पूर्ण करने के पश्चात विद्यार्थी:-

1.हिंदी प्रयोजनात्मक तथा कार्यशील भाषा के प्रति सजग होंगे।

2.भाषा संबंधी संभावित अशुद्धियों एवं उनके परिष्कारसे परिचित होंगे तथा मानक भाषा का व्यवहार करने में सक्षम होंगे।

3.विद्यार्थियों के शब्द भंडार में वृद्धि होगी।

4.हिंदी साहित्य के पठन-पाठन के प्रति रुचि जागृत होगी एवं सामाजिक महत्व के विविध आयामों को समझने की दृष्टि विकसित होगी।

पाठ्यक्रम निर्माण का औचित्य:-

23/2/23

23.2.23

23/2/23

23.2.2023

BA/B.Sc./B.Com/B.Sc. Home.Sc. (Part-I)
Foundation Course Paper-II English Language

Max. Marks:75
Total credits: 05

Qualifying Marks:26

Paper-II	Mark's	Period's	Credit
Unit-I **Flamingo : A Textbook for college students** **Publication : Macmillan Publishers**	3x5=15	18	01
Unit -II • Writing Skill • Describing a place or a person. • Writing a Biographical Sketch • Narrating an event or experience	1x10=10	18	01
Unit -III Reading Comprehension • (a) Unseen Passage (Normal) • (b) Vocabulary (Text-based)	1x5=05 1xl0=10	18	01
Unit -IV Letter Writing (a) Formal Letters (Business Letters/ Application/Press/ Official Letters) (b) Informal Letters (Relatives and friends)	1x5=5 1x5=5	09	0.5
Unit-V Grammar • Articles • Gerunds /Participles • Subject Verb Agreement • Use of Conjunctions • Tenses • Relatives • Possessives & self forms • Grammatical items given in Textbook 'Flaminso'	1x25=25	27	1.5
Total	75	90	05
Recommended Books- 1. Essential English Grammar, 2nd Edition by Raymond Murphy, Cambridge Publication 2. English Grammar in use 5th edition by Raymond Murphy, Cambridge Publication. 3. Advanced English Grammar by Martine Hewings Cambridge University Press.			

11/07/2023
(P.C. Choudhury)

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	B.Com. Part- 1 (CCC-2022)
Paper Code	Paper 3 CC-2201
Title of Subject	Financial Accounting
Objective	The course aims to help learners to acquire conceptual knowledge on financial accounting to impart skills for recording various kinds of business transactions with G.S.T. and to prepare financial statements
Max Marks – 75+25	Min Marks 25+10
Credit Value	5

Detailed Syllabus

Units	Content of the syllabus	No. of lectures
Unit- 1	Accounting: An introduction: Development, Definition, Needs, objectives, Branches of Accounting, Basic Accounting principles concept and conventions Accounting standard: National & International Accounting Transaction: Concept of Single and Double entry system, Books of original Records, journal, ledger, sub division of journal cash book (including GST Transaction) and Trial balance	15
Unit- 2	Final Accounts: Manufacturing Accounts, Trading Accounts, Profit Loss Account, Balance Sheet, Adjustment Entries with various provision and reserves. Rectifications of Errors: Classification of errors, location of errors, Rectification of errors, Suspense account, Effect on profit Depreciation accounting; methods of recording depreciation, methods for providing depreciation, Depreciation of different assets; Indian accounting standard and Income Tax,	15
Unit- 3	Computerized Accounting System (using any popular accounting software); Creation of Vouchers; recording transactions; preparing reports, cash book, bank book, ledger accounts, trial balance, Profit and loss account, Balance Sheet, Fund Flow statement, Cash Flow Statement, Selecting and shutting a Company, Backup and Restore data of a Company.	15

Unit- 4	Accounting for Hire-Purchase Transaction, Journal entries and ledger account in the books of Hire Venders and Hire purchase for large value items including Default and repossession. Consignment: Features, Accounting treatment in the books of the consignor and consignee. Accounting for Inland Branches: Concept of dependent and Independent branches, accounting aspects, debtor's system, stock and debtor's system, branch final accounts system and wholesale basis system. Preparation of consolidated profit and loss accounts and balance sheet with adjustment	15
Unit- 5	Joint Venture: Features, Accounting procedures, Joint Bank account, Records Maintained by Co-venturer of(a) all transactions (b) only his own transactions. (memorandum joint venture account). Partnership Account: Dissolution of a partnership firm, Amalgamation of partnership Firms, Conversion of partnership firm into limited liability Company	15
Case study/Skill based activities/field work/project work etc. (for extra credit)		
Learning out come	1. Apply the generally accepted accounting principle while recording transactions with G.S.T.and preparing financial statement. 2. Demonstrate accounting process under computerized accounting system. 3. prepare cash book and other account necessary while running a business. 4. Evaluate the importance of depreciation 5. prepare dissolution and Amalgamation account of partnership firm:	

Suggested Readings:

01. Gupta, R.L. and Radhaswamy. M; Financial Accounting Sultan Chand and Sons , New Delhi.
02. Monga J.R. Ahuja Girish and Sehgal Ashok: Financial Accounting ; Mayur Paper Back, Noida.
03. Shukla M.C. Grewal T.s. and Gupta , S.C. : Advanced Accounts; S. Chand & Co. New Delhi.
04. Singh B.K. Financial Accounting ; Wisdom Publishing House, Varanasi.
05. Shukla S.M.; Financial Accounting ; Sahitya Bhawan Publication ; Agra.
06. Karim & Khanuja; Financial Accounting; SBPDPublishing House; Agra.
07. Agrawal & Mangal; Financial Accounting Universal Publication.

Name And Signature of members

Chairman		HOD PG Department		HOD UG Department		Subject Expert	
1		1		1		1	Bhatta C.G.A. Bhatta
2		2		2	K.S. Pusam	2	
3		3		3	Dr. R.K. Thakur	3	A.H. KHAN
4		4	Sanghya Prasad	4		4	
5		5		5		5	
6							

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name:	B.Com. Part I (CCC-2022)
Paper Code/Paper No.	Paper – 4 (CC- 2202)
Title of Subject:	**Business Communication**
Objectives:	The course Aims to impart the learner's skill in reading writing comprehension and communication in business field especially using electronic media.
Max Marks – 75+25	Min Marks 25+10
Credit Value	5

Detail Syllabus

Units	Content of the Syllabus	No. of Lectures
Unit 1	Introducing Business Communication: — Definition, Concept and Significance of communication. Basic forms of communications; communication Models and Process: Principal of Effective communication; Theories of communication; Self-Development and Communication Development of Positive personal attitude. SWOT analysis. Communication: Ethics. Business Language.	15
Unit 2	Corporate communication: Formal and Informal communication Network; Grapevine; Miscommunication (Barriers) and improving communication, Practices in Business communication - Group Discussions. Seminar. effective listening. - Principle of effective listening, Factor of effective - listening exercises, Oral. Written and Video session, Audience analysis and feedback.	15
Unit 3	Writing skill - Business letters — Definition, Concepts, Structure, Advantage, Disadvantage. need and kinds of business letter. Essentials of Effective Business letter, Good news and bad New letters, Office memorandum Writing Resume and letter of Job Application.	15
Unit 4	Report Writing: Introduction to a Proposal, Short report and formal report, report preparation. Oral Presentation Principles of Oral Presentation, Factor effecting Presentation, Sales Presentation, Training Presentation, conducting surveys, Speeches to Motivate, Presentation skill.	15
Unit 5	Non- V e r b a l Aspects of communicating, Body Language: K kinesics, Proxemics, Para Language. Interview skills: Appearing in Interviews; Conducting I interview; mock Interview. Modem for ins of Communicating: Fax; E-Mail; video Conferencing; etc. international Communication for globe business.	15

Case study/Skill based activities/field work/project work as applicable (for extra credit)

Learning Out comes	1-	Know Various forms of Communication, Communication Barriers.
	2-	Comprehend a variety of Business Correspondence and respond Appropriately.
	3-	Use appropriate Grammatical Constructions and Vocabulary to Communicate Effectively.

Suggested Reading (Books) :—

1. Balasubramanian: Business Communication: Vikas Publication House, Delhi.
2. Kaul: Effective Business Communication: Prentice Hall, New Delhi,
3. Patri VR Essentials of Communication: Greenspan Publication, New Delhi.
4. Senguin J : Business Communication: The Real World and your career, NewDelhi.
5. Dr. Mishra, Shukla and Patel: Business Communication: SBPD PublishingHouse, Agra.

Name and Signature of Member

Chairman		HOD PG Department		HOD UG Department		Subject Expert	
1	[signature]	1	[signature] 07/06/22	1	[signature]	1	[signature] (GABhatta)
2	RKAgrawal 07/06/22	2	[signature]	2	[signature] K.S. Pusam	2	[signature]
3	[signature]	3	[signature]	3	[signature] Dr. R.K. Hinkane	3	A.H. KUAN [signature]
4	[signature]	4	Sandhya Prasad [signature]	4		4	[signature]
5		5	[signature]	5		5	[signature]
6	[signature]						

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name:	B.COM Part-I (CCC-2022)
Paper Code/Paper No:	Paper-5 (CC-2203)
Title of Subject:	Business Mathematics
Objectives:	To enable the students to have such minimum knowledge of mathematics as is applicable to business and economic situations
Max marks: 75 + 25	Min. Marks: 25+10
Credit Value	5

Detail Syllabus

Unit	Content of Syllabus	No. of Lectures
Unit- 1	**Average:** Meaning, characteristics, uses, merits & demerits and limitations **Simple and combined average**, change in term value, speed average, weighted average, algebraic problems! Calculation of average in case of large number of terms. **Ratio**- Meaning and characteristics, comparison of ratios, division of ratios, calculation of real numbers on basis of ratios, adding or subtracting the same number in terms of ratio, practical use of ratio in business and consolidation. **Proportion**- Meaning, Characteristics, Difference in ratio and proportion, Problems related to Continuous Proportion, Indices Proportion, Mix ratio. **Percentage**- Meaning and utility, rules related to percentage, number, election, examination, income expenditure, consumption, mixture, problems related to population.	15
Unit- 2	**Commission and Brokerage**- Meaning, types of business agency, cash and redemption transactions, commission before and after bonus benefits, problems related to the word prior/ due amount. **Discount**- Meaning and types, problems related to trading discount, cash discount, sequential discount and equivalent discount rate. **Profit and Loss**- Cost or purchase price, selling price, profit, loss, gross profit, concept of gross profit, percentage profit loss, purchase and sale price, more than one buyer and seller, dishonesty, adulteration, discount, commission related problems.	15
Unit- 3	**Matrices**-Meaning and definitions, types of matrix, Algebra of matrix, transposed matrix **Determinants**-Meaning and definitions, minor, co-factor, calculation of values of determinants up to third order, Laplace's method, Sarru's method **Preparation of Invoice**-Meaning, Contents, Advantages and types of Invoice, Methods of preparing Invoice.	15
Unit- 4	**Logarithms and Antilogarithms**-Meaning, properties, fundamental laws and types, practical use of logarithm and antilogarithm table **Simple and Compound interest**- Principal, amount, concept of real and nominal rate of interest, difference between simple interest and compound interest, practical problems related to interest, time, rate, principal and amount. Calculation of interest by third, tenth and tenth rule and common multiplier method.	15

Unit- 5	**Vedic mathematics** -Brief history of Vedic mathematics in Indian knowledge tradition, methods and practice of quick calculation of addition, multiplication, division, square and square root of numbers through Vedic mathematics, method of quick verification of answers from Digit Sum. **Simultaneous equations**-Meaning, characteristics, methods of solving equations in two variables- Graphical, Substitution, Elimination and Cross multiplication.	15
Keywords/Tags: Vedic mathematics, Logarithms, Simultaneous Equations, Ratio, Proportion, Discount, Brokerage, Commission, Average, interest		
Case study/Skill based activities/field work/project work etc. (for extra credit)		
Learning Out comes	1.To apply basic terms of integration in solving practical problems field of as of business. To explain basic methods of business calculus, types and methods of interest account and their basic applications in practice. 2.To solve problems in the areas of business calculus, simple and compound interest account, use of compound interest account, loan and consumer credit. 3.To discuss effects of various types and methods of interest account. 4. Connect acquired knowledge and skills with practical problems in economic practice.	

Suggested Books

1. Dr. Karim & Agrawal, Business Mathematics SBPD Publishing house, Agra(Both Hindi & English medium)
2. Magar Dr. Abhilasha Business Mathematics Himalaya publication Mumbai
3. Sancheti & Kapoor Business Mathematics Sultan chand and sons New Delhi
4. Sharma J.K. Business Mathematics IK International pvt. Ltd. New Delhi
5. Kumar Mrityunjay Business Mathematics S. Chand Publishing New Delhi
6. Agrawal Dr. Mahesh Business Mathematics Ramprasad and sons Bhopal

Name and Signature of Member

	Chairman		HOD PG Department		HOD UG Department		Subject Expert
1		1		1		1	Bhatta C G A Bhatta
2	R K Agrawal 07/06/22	2		2	K S Pusam	2	
3		3		3	Dr. R K Thakur	3	A H KHAN
4		4	Sandhya Prasad	4		4	
5		5		5		5	
6		6		6		6	

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	B.Com – 1st Year (CCC-2022)
Paper Code/Paper No.	Paper – 6 CC-2204
Title of Subject :	Business Regulatory frame work
Objectives:	To provide a brief idea about the framework of Indian business laws
Max Marks – 75 + 25	Min Marks- 25 + 10
Credit Value	5

Detailed Syllabus

Units	Content of the Syllabus	No. of Lectures
Unit -1	Law of contract (1872) –I : Nature of contract classification; offer and acceptance.; capacity of parties to contract, free consent, considerations, Legality of object; Agreement declared void.	15
Unit-2	Special contracts; Indemnity & Guarantee, Bailment and pledge; Law of Agency- Meaning, Modes of creating Agency, Types of Agents, Personal Liability of an Agent and Termination of Agency.	15
Unit -3	Sale of Goods Act (1930): Definition, Sale & Agreement to sell, Types of Goods, Conditions & Warranties, Sale by Non-owners, Unpaid Seller, CIF, FOB and Ex-Ship Contracts.	15
Unit - 4	Negotiable Instrument Act (1881) Definition of Negotiable instrument; Feature; promissory note; Bill of exchange cheque; Holder and holder in the due course; crossing of a cheque, types of crossing; Negotiation; dishonor and discharge of negotiable instrument, Information technology Act 2000 and cybercrime Act 2012 related to e- Business only.	15
Unit - 5	The consumer protection Act 2019: Main provision, Definition of consumer, consumer Disputes, Grievances redressal machinery; Indian partnership Act1932, Limited Liabilities partnership Act 2008, Introduction of Intellectual property Right Act – Copyright, Patent & Trademark.	15

Case study/Skill based activities/field work/project work as applicable (for extra credit)

Learning out comes	1	To know the students with the basic concept terms & provisions of mercantile and business laws.
	2	To develop well verse in basic provisions regarding legal framework governing the business world.
	3	Knowing the rights and liability of every citizen regarding consumer protection act.

Suggested Readings: Book

1. Kuchal M.C. Business Law: Vikas publishing house, Delhi. (English Medium)
2. Lapoor N.D.: Business Law; Sultanchand & Sons, New Delhi. (English Medium)
3. Chandha P.R.: Business Law; Galgotia New Delhi. (English Medium)
4. Dr. J.K. Vaishnav: Business Law; Sahitya Bhawan Publication Agra (English Medium)

Name and Signature of Member

	Chairman		HOD PG Department		HOD UG Department		Subject Expert
1		1		1		1	
2	07/06/22	2		2		2	
3		3		3		3	
4		4	Sandhya Pmd	4		4	
5		5		5		5	
6							

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	**B. Com Part-I (CCC-2022)**
Paper Code/ Paper No.	Paper – 7 (CC-2205)
Title of Subject:	**Business Environment**
Objectives:	1. To acquaint students with the local and global environment of business.
	2. To acquaint students with the economic, political and technological environment in business
	3. To acquire in - depth knowledge of govt. policies and legal environment of business.
Max Marks 75+25	Min Marks 25+10
Credit Value	5

Detailed Syllabus

Unit	Content of Syllabus	No. of Lecturers
Unit- 1	**Business Environment:** Type of Environment-internal, external, micro and macro environment. Competitive structure of industry, environmental analysis and strategic management. Managing diversity. Scope of business, characteristics of business. Objectives and the uses of study. Process and limitations of environmental analysis.	15
Unit- 2	**Economic Problem of Growth:** Inflation Parallel Economy Industrial Sickness **Economic Factors of Growth:** Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Micro, Small and Medium Enterprises (MAMEs)	15
Unit- 3	**International Environment:** Trends in World Trade & The Problems of Developing Countries, Foreign Trade & Economic Growth, **International Economic Groups:** GATT, WTO, UNCTAD, World Bank, IMF, TRIPS, TRIMS **Regional Trade Agreements:** European Union (EU), ASEAN, SAARC, NAFTA	15
Unit- 4	**Govt. Policies:** Export-Import Policy, Monetary & Fiscal Policy, Privatization, Liberalization, Globalization, Demonetization, Disinvestment, Foreign Exchange Management Act 2000 Industrial Policy, Industrial Licensing (National & State)	15
Unit- 5	**Economic Planning:** Need, Objective, Strategy, Review of Previous Plan, NITI AAYOG, Gross Domestic Product : Meaning, Characteristics, calculation and impact in employment & productivity with refence to India & Chhattisgarh. **Economic Environment in Chhattisgarh:** Economic of Chhattisgarh – Its Basic Feature, Population of Chhattisgarh and Its Characteristics. Industry and Industrial Development in Chhattisgarh Mineral & Mineral Based Industry in Chhattisgarh. Agriculture in Chhattisgarh. Forest & Forest Produce in Chhattisgarh. Development of Power in Chhattisgarh. Development of Transport in Chhattisgarh.	15
Case study/Skill based activities/field work/project work as applicable (for extra credit)		

Learning Out comes	1. Understand relationship between environment and business Applying the environment analysis techniques in Practice. 2. The students will be able to demonstrate and develop conceptual framework of business environment and generate interest in international business. 3. Familiarize with the Nature of local business environment and its component. 4. Acquaint students with govt. policies and different roles for the emergence, upliftment and smooth functioning of business organization.

Suggested Readings:

01. Sheikh Saleem, Business Environment, Pearson
02. Francis, Cherunilan, Business Environment, Himalaya Publishing House
03. Gupta C.B., Business Environment Sultan Chand & Sons
04. Paliwar Veena Keshav, Business Environment, PHI Learning Private Limited, Delhi
05. Singh Ranjeet ,Business Environment, Kalyani Publishers New Delhi
06. Sinha V.C., Business Environment (Hindi & English), SBPD Publications Agra
07. Upadhyay Sharma Dayal, Business Environment (Hindi), Ramesh Book Depot Jaipur
08. Singh, Dr. S.K., Business Environment (Hindi). Sahitya Bhawan Publication Agra
09. Jain Dr. S.C., Business Environment (Hindi), Kailash Pustak Sadan, Bhopal
10. Joshi Rosy, Kapoor Sangam, Business Environment (Hindi), Kalyani Publishers New Delhi

Name and Signature of Member

	Chairman		HOD PG Department		HOD UG Department		Subject Expert
1		1	07/06/22	1	Shashi	1	G.A Bhatta
2	07/06/22	2		2	K.S. Pusam	2	
3		3		3	Dr. R.K. Tiwari	3	A.H. KHAN
4		4	Sandhya Prasad	4		4	
5		5		5		5	
6							

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	B.Com.1st Year (CCC-2022)
Paper Code/ Paper No.	Paper- 8 (CC-2206)
Title of Subjects:	Business Economics
Objectives:	The course aims to acquaint the learners with fundamental economic theories and their impact on pricing, demand, supply, production, and cost concepts.
Max Marks 75 +25	Min Marks: 25 + 10
Credit Value	5

Detailed Syllabus

Units	Content of the Syllabus	No. of Lectures
Unit-I	**Introduction:** Micro &Macro Economics Meaning, Scope, Importance and limitations, nature, Distinguish between Micro &Macro Economics **Business Economics** Meaning, Definition, objective and nature & Scope, Role and Responsibilities of a business Economist. **Market Demand Analysis**: Meaning of Demand and Determinants of Demand, Changes in Demand, Demand Function Law of Demand, Types of Demand and Exceptions of Law of Demand	15
Unit-2	**Consumer Behaviour and Elasticity of Demand:** Utility Analysis of Demand, Law of Diminishing marginal utility & Consumer Surplus, Indifference Curve technique, Price Line or Budget Line , Concept of Elasticity of Demand, Importance, Types, Calculations of different concepts of Elasticity, Methods of measurement of Price Elasticity of Demand	15
Unit-3	**Production Analysis:** Meaning of Supply and Supply function, Concepts of Stock and Flow, Determinants of Supply, Law of Supply, Changes in Supply, Production Function: a) Law of Variable Proportions b) Law of Returns to Scale, Economies and Diseconomies of Scale	15
Unit-4	**Market Morphology and Equilibrium of the Firm and Industry:** Meaning, Classification and Types of Market, Market structure formed on the basis of perfect and imperfect competition, Price and output determination under Perfect Competition, Price and Output determination under monopoly, Discrimination Monopoly- Features, Price and Output determination under discriminating Monopoly, Price and Output determination under Monopolistic Competition, Oligopoly	15
Unit-5	**Chhattisgarh Economy**- Price Control- Price ceiling and price floor, Study of Chhattisgarh economy, Prospects of economy development, Economic Survey of Chhattisgarh	15

Case study/Skill based activities/field work/project work etc. (for extra credit)

Learning Out comes:	1	Examine how different economic systems function and evaluate implications of various economic decisions;
	2	Examine how consumers try to maximize their satisfaction by spending on different goods;
	3	Analyze the relationship between inputs used in production and the resulting outputs and costs;
	4	Analyze and interpret market mechanism and behaviour of firms and response of firms to different market situations
	5	Examine various facets of pricing under different market situations.

Suggested Readings:

1. Ahuja, H. L. (2019). Theory of Micro Economics. New Delhi: Sultan Chand Publishing House.
2. Koutsoyannis, A. (1975). Modern Microeconomics. London: Palgrave Macmillan.
3. Chaturvedi, D. D., & Gupta, S. L. (2010). Business Economics Theory & Applications. New Delhi: International Book House Pvt. Ltd.
4. Kennedy, M. J. (2010). Micro Economics. Mumbai: Himalaya Publishing House.

Websites:

1. Relevant study material of ICAI: www.icai.org.
2. https://www.icsi.edu/media/website/Business%20Economic
3. https://www.businesseconomics.com/

Name and Signature of Member

Chairman		HOD PG Department		HOD UG Department		Subject Expert	
1		1		1	Shashi	1	Bhatta
2	02/06/22	2		2	K.S. Pusam	2	
3		3		3	Dr. R.K. Hirkar	3	A.H. KHAN
4		4	Sandhya Prasad	4		4	
5		5		5		5	
6							

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	बी.कॉम. भाग– 1 (CCC-2022)
Paper Code	प्रश्न पत्र– 3 (CC-2201)
Title of Subject	वित्तीय लेखांकन
Objective	इस पाठ्यक्रम का उद्धेश्य है, वित्तीय लेखांकन से संबंधित अवधारणात्मक जानकारी जी. एस.टी. सहित प्रदान करना एवं विभिन्न व्यवसायों के लेखांकन एवं वित्तीय विवरण बनाने से संबंधित कौशल विकास करना।
Max Marks – 75+25	Min. Marks: 25+10
Credit Value	5

Detailed Syllabus

Units	Content of the syllabus	No. of lectures
इकाई– 1	लेखाकंनः एक परिचय – विकास, परिभाषा, आवश्यकता, उद्देश्य, लेखाकंन की शाखाएं, लेखाकंन के आधारभूत सिद्धांत, अवधारणाएं एवं प्रथाएं लेखांकन मानकः अंतर्राष्ट्रीय लेखाकंन मानक (सिर्फ रूपरेखा) भारत में लेखांकन मानक व्यवहार, लेखाकंन व्यवहारः एकल एवं द्वि प्रविष्टि प्रणाली की अवधारणा, मूल अभिलेख की पुस्तके, पंजी ,खाता बही,पंजी का विभाजन : रोकड़ बही (जी.एस.टी.व्यवहार सहित) एवं तलपट	15
इकाई– 2	अंतिम खाते : निर्माणी खाता, व्यापार खाता, लाभ हानि खाता, चिट्ठा, विभिन्न प्रावधानो एवं संचयों सहित समायोजन प्रविष्टियॉं। अशुद्धियों का संशोधनः अशुद्धियों का वर्गीकरण, अशुद्धियों की स्थिति, अशुद्धियों का सुधार, उचन्त खाता, लाभ पर प्रभाव ह्रास लेखांकन, ह्रास अभिलेखन की विधियां, ह्रास आयोजन की विधियां, विभिन्न संपत्तियों पर ह्रास, भारतीय लेखांकन मानक और आयकर	15
इकाई– 3	कम्प्यूटरीकृत लेखांकन प्रणाली (किसी भी लोकप्रिय अकाउंटिंग सॉफ्टवेयर के उपयोग द्वारा), वाउचर का निर्माण, व्यवहारों का अभिलेखन, रिपोर्ट तैयार करना, कैशबुक, बैंक बुक, खाताबही, तलपट, लाभ एवं हानि खाता, चिट्ठा, कोष प्रवाह विवरण, नकदी प्रवाह विवरण, कंपनी का चयन करना और बंद करना, किसी कंपनी का डेटा बैकअप और पुनर्स्थापित करना।	15
इकाई– 4	किराया क्रय व्यवहारों का लेखांकन, किराया क्रेता एवं विक्रेताओं के पुस्तकों में जर्नल प्रविष्टियाँ और खाताबही, चूक और पुनर्निधारण सहित अधिक मूल्य की वस्तुओं के लिए किराया खरीद प्रेषणः विशेषताएँ, प्रेषक एवं प्रेषिती के पुस्तकों में लेखांकन व्यवहार अंतर्देशीय शाखाओं के लिए लेखांकन, आश्रित एवं स्वतंत्र शाखाओं की अवधारणा, लेखांकन पहलू, देनदार प्रणाली, स्कंध एवं देनदार प्रणाली, शाखा अंतिम खाता प्रणाली और थोक आधार प्रणाली, समायोजन के साथ समेकित लाभ और हानि खाता तथा बैलेंस शीट तैयार करना।,	15
इकाई– 5	संयुक्त उद्यम (साहस): विशेषताएँ लेखांकन प्रक्रिया, संयुक्त बैंक खाते, सह–उद्यमी द्वारा रखे जाने वाले अभिलेख (अ) सभी व्यवहारों का (ब) स्वयं के व्यवहारों का (अनुस्मारक संयुक्त साहस खाते) साझेदारी खाता : एक फर्म का विघटन, साझेदारी फर्म का एकीकरण, साझेदारी फर्म का सीमित दायित्व कंपनी में रूपांतरण।	15

Case study/Skill based activities/field work/project work etc. (for extra credit)	
पाठ्यक्रम अध्ययन की परिलब्धियां	1. जी.एस.टी. सहित व्यवहारो के अभिलेखन एवं वित्तीय विवरण तैयार करते समय सामान्य लेखांकन सिद्धांत लागू करना। 2. कम्प्यूटरीकृत लेखांकन से संबंधित आधारभूत जानकारी प्राप्त होगी। 3. चालू व्यवसाय के रोकड़ पुस्तक एवं अन्य पुस्तक तैयार करने में मदद मिलेगी। 4. ह्रास की महत्व का मूल्यांकन करना। 5. साझेदारी फर्म के विघटन एवं एकीकरण तैयार करना।

Suggested Readings:

01. Gupta, R.L. and Radhaswamy. M; Financial Accounting Sultan Chand and Sons , New Delhi.
02. Monga J.R. Ahuja Girish and Sehgal Ashok: Financial Accounting ; Mayur Paper Back, Noida.
03. Shukla M.C. Grewal T.s. and Gupta , S.C. : Advanced Accounts; S. Chand & Co. New Delhi.
04. Singh B.K. Financial Accounting ; Wisdom Publishing House, Varanasi.
05. Shukla S.M.; Financial Accounting ; Sahitya Bhawan Publication ; Agra.
06. Karim & Khanuja; Financial Accounting; SBPDPublishing House; Agra.
07. Agrawal & Mangal; Financial Accounting Universal Publication.

सदस्यों के नाम एवं हस्ताक्षर

Chairman		HOD PG Department		HOD UG Department		Subject Expert	
1		1		1		1	C.G.A. Bhatta
2	07/06/22	2		2	K.S. Pusam	2	
3		3	Sandhya Pant	3	Dr. R.K. Thakur	3	A.H. KHAN
4		4	R.K. Pandey	4		4	
5		5		5		5	
6							

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	बी.कॉम. भाग– 1 (CCC-2022)
Paper Code	प्रश्न पत्र– 4 (CC-2202)
Title of Subject	व्यवसायिक संचार
Objective	पाठ्यक्रम का उद्देश्य शिक्षार्थी को व्यवसायिक क्षेत्र में पढ़ने लिखने समझने और संचार में कौशल प्रदान करना है। विशेष रूप से इलेक्ट्रॉनिक मीडिया के उपयोग के माध्यम से।
Max Marks – 75+25	Min. Marks: 25+10
Credit Value	5

Detailed Syllabus

Units	Content of the syllabus	No. of lectures
इकाई– 1	**व्यावसयिक संप्रेषण का परिचयः** परिभाषा, अवधारणाएं एवं संचार के महत्व, संचार के अधारभूत प्रकार, संप्रेषण मॉडल और उसकी प्रक्रिया, संप्रेषण के सिद्धांत, आत्मविकास एवं सकारात्मक व्यक्तिगत दृष्टिकोण का विकास, SWOT विश्लेषण, संचार नैतिकता, व्यवसायिक भाषा।	15
इकाई– 2	**व्यावसायिक संस्था में संप्रेषणः** औपचारिक एव अनौपचारिक संप्रेषण तंत्रः ग्रेपवाइन, संप्रेषण में बाधाएं एवं सुधार, व्यवहार में व्यावसायिक संप्रेषण– सामूहिक परिचर्चा, संगोष्ठी। प्रभावशाली सुनना– प्रभावपूर्ण सुनने के सिद्धांत, प्रभावूपर्ण सुनने के कारक– सुनने का व्यायाम, मौखिक, लिखित एवं विडियों सत्र, श्रोतो विश्लेषण एवं प्रतिपुष्टि।	15
इकाई– 3	**लेखन कुशलता– व्यवसायिक पत्र–** परिभाषा, अवधारणाएं, संरचना एवं गुण, दोष। आवश्यकता एवं विभिन्न प्रकार के व्यवसायिक पत्र, प्रभावी व्यापारिक पत्र के मूल तत्व, अनुकूल एवं प्रतिकुल संवाद पत्र, कार्यालय ज्ञापन, रिज्यूमे लिखना एवं नौकरी के आवेदन पत्र।	15
इकाई– 4	**रिपोर्ट लेखनः** प्रस्ताव का परिचय, लघु रिपोर्ट, औपचारिक रिपोर्ट एवं रिपोर्ट लेखन की तैयारी। मौखिक प्रस्तुति, मौखिक प्रस्तुतिकरण के सिद्धांत, प्रस्तुतिकरण को प्रभावित करने वाले कारक, विक्रय प्रस्तुतिकरण, प्रशिक्षण प्रस्तुतिकरण, सर्वेक्षण आयोजित करना, प्रेरक भाषण, प्रस्तुतिकरण कौशल।	15
इकाई– 5	**अशाब्दिक संप्रेषण के पहलूः** दैहिक भाषा, समय एवं पार्श्व भाषा, काइनेसिक्स। **साक्षात्कार कुशलताः** साक्षात्कार में शामिल होना, साक्षात्कार का आयोजन कराना, मोक साक्षात्कारः संचार के आधुनिक रूप, फैक्स, ई–मेल, विडियो कॉन्फ्रेंसिग आदि। वैश्विक व्यवसाय के लिए अंतर्राष्ट्रीय संप्रेषण।	15

Case study/Skill based activities/field work/project work etc. (for extra credit)

पाठ्यक्रम अध्ययन की परिलब्धियां	1. संचार के विभिन्न रूपों एवं संचार बाधाओं को जानने के लिए। 2. विभिन्न प्रकार के व्यावसायिक पत्राचार को समझना एवं उचित रूप से प्रक्रिया देना। 3. प्रभावी ढंग से संवाद करने के लिए उपयुक्त व्याकरणिक निर्माण एवं शब्दावली का प्रयोग

Suggested Reading (Books) :—

1. Balasubramanian: Business Communication: Vikas Publication House, Delhi.
2. Kaul: Effective Business Communication: Prentice Hall, New Delhi,
3. Patri VR Essentials of Communication: Greenspan Publication, New Delhi.
4. Senguin J : Business Communication: The Real World and your career, NewDelhi.
5. Dr. Mishra, Shukla and Patel: Business Communication: SBPD PublishingHouse, Agra.

सदस्यों के नाम एवं हस्ताक्षर

Chairman		HOD PG Department		HOD UG Department		Subject Expert	
1		1	07/06/22	1		1	(G.A. Bhatt)
2	07/06/22	2		2	K.S. Pusam	2	
3		3		3		3	A.H. KHAN
4		4	Sandhya Prasad	4		4	
5		5		5		5	
6		6		6		6	

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	बी.कॉम. भाग– 1 (CCC-2022)
Paper Code	प्रश्न पत्र – 5 (CC-2203)
Title of Subject	व्यावसायिक गणित
Objective	व्यावसायिक गणित विषय के अध्ययन से • विद्यार्थियों को दिन प्रतिदिन के गणना कार्यों में एवं व्यवसायिक गणना कार्यों में दक्षता प्राप्त होगी, • गणितीय सोच तथा तर्कशक्ति विकसित होगी जिससे वे तार्किक परिणाम निकालकर त्वरित निर्णय लेने में सक्षम होंगे, • विभिन्न प्रतियोगी परीक्षाओं में पूछे जाने वाले गणित के प्रश्नों को हल करने में सक्षम होंगे, आगामी वर्षों में व्यावसायिक सांख्यिकी, लागत लेखांकन, वित्तीय प्रबंध, आयकर, जैसे विषयों के संख्यात्मक प्रश्नों के अध्ययन व उन्हें हल करने में आसानी होगी।
Max Marks – 75+25	Min. Marks: 25+10
Credit Value	5

Detailed Syllabus

Units	Content of the syllabus	No. of lectures
इकाई– 1	**औसत** : अर्थ, विशेषताएं, उपयोगिता, गुण और दोष एवं सीमाएँ सामान्य एवं सामुहिक औसत, पद मूल्यों में परिवर्तन, औसत गति, भारित औसत, बीजगणितीय समस्याऐं, पदों की संख्या अधिक होने पर औसत की गणना। **अनुपात** : अर्थ एवं विशेषताएं, अनुपातों की तुलना, अनुपात में विभाजन, अनुपातों के आधार पर वास्तविक संख्याओं का आगणन, अनुपात पदों में समान संख्या जोड़ा जाना अथवा घटाया जाना, व्यापार एवं साझेदारी में अनुपात का व्यावहारिक उपयोग, **समानुपात** : अर्थ, विशेषताएं, अनुपात और समानुपात में अन्तर, सतत् समानुपात, अनुक्रमानुपात, मिश्रानुपात से सम्बन्धित समस्याएं **प्रतिशतता** : अर्थ एवं उपयोगिता प्रतिशतता से सम्बन्धित नियम, संख्या, चुनाव, परीक्षा, आय, व्यय, उपभोग, मिश्रण, जनसंख्या से सम्बन्धित समस्याए	15
इकाई– 2	**कमीशन एवं दलाली** : अर्थ, व्यापारिक एजेंसी के प्रकार, नकद एवं उधार व्यवहार, बोनस, लाभ के पूर्व एवं पश्चात कमीशन, शुद्ध प्राप्य /देय राशि सम्बन्धी समस्याएँ। **बट्टा या अपहार** : अर्थ एवं प्रकार, व्यापारिक बट्टा, नकद बट्टा, क्रमिक बट्टा एवं तुल्य बट्टा दर से सम्बन्धित समस्याएं। **लाभ–हानि** : लागत या क्रय मूल्य, विक्रय मूल्य, लाम, हानि, सकल लाभ, शुद्ध लाभ, की अवधारणा, प्रतिशत लाभ हानि, क्रय या विक्रय मूल्य, एक से अधिक क्रेता एवं विक्रेता, बेईमानी, मिलावट, छूट, कमीशन से सम्बन्धित समस्याएं।	15
इकाई– 3	**आव्यूह** : अर्थ एवं परिभाषा, आव्यूह के प्रकार, आव्यूहों का बीजगणितीय संक्रिया अथवा क्रियाकलाप परिवर्त आव्यूह **सारणिक** : अर्थ एवं परिभाषा, उपसारणिक, सहखण्ड, तृतीय क्रम के सारणिकों के मान की गणना, लाप्लेस एवं सारस नियम। **बीजक का निर्माण** – अर्थ, लाभ, प्रकार एवं बीजक में निहित बातें, बीजक बनानें की विधियां	15

इकाई– 4	**लघुगणक एवं प्रतिलघुगणक :** अर्थ, प्रगुण, मूल नियम एवं महत्व, लघुगणक एवं प्रतिलघुगणक सारणी का व्यावहारिक उपयोग **साधारण एवं चक्रवृद्धि ब्याज :** मूलधन, मिश्रधन, ब्याज की वास्तविक एवं नाममात्र दर की अवधारणा साधारण ब्याज एवं चक्रवृद्धि ब्याज में अन्तर, ब्याज, समय, दर, मूलधन एवं मिश्रधन से सम्बन्धित व्यावहारिक समस्याएँ. तृतीय, दशांश एवं दशांश नियम तथा सार्वगुणक विधि से ब्याज की गणना।	15
इकाई– 5	**वैदिक गणित** .भारतीय ज्ञान परम्परा में वैदिक गणित का संक्षिप्त इतिहास वैदिक गणित के माध्यम से, संख्याओं के जोड़, गुणा, भाग वर्ग एवं वर्ग मूल की त्वरित गणना की विधियाँ एवं अभ्यास, योगांक से उत्तर के त्वरित सत्यापन की विधि **युगपत समीकरण :** अर्थ एवं महत्व, दो चरों में रेखीय समीकरण को हल करने की विलोपन विधि, प्रतिस्थापन विधि, वज्रगुणन विधि एवं बिन्दुरेखीय विधियाँ।	15
Case study/Skill based activities/field work/project work etc. (for extra credit)		
पाठ्यक्रम अध्ययन की परिलब्धियां	1. व्यवसाय के रूप में व्यावहारिक समस्याओं के क्षेत्र को हल करने में एकीकरण की बुनियादी शर्तों को लागू करना। व्यापार गणना के बुनियादी तरीकों, ब्याज खाते के प्रकार और विधियों और व्यवहार में उनके बुनियादी अनुप्रयोगों की व्याख्या करने के लिए। 2. व्यापार गणना, सरल और चक्रवृद्धि ब्याज खाता, चक्रवृद्धि ब्याज खाते का उपयोग, ऋण और उपभोक्ता ऋण के क्षेत्रों में समस्याओं को हल करने के लिए। 3. ब्याज खाते के विभिन्न प्रकारों और विधियों के प्रभावों पर चर्चा करना। 4. अर्जित ज्ञान और कौशल को आर्थिक व्यवहार में व्यावहारिक समस्याओं से जोडनें।	

Suggested Readings:

1. Dr. Karim & Agrawal, Business Mathematics SBPD Publishing house, Agra
2. Magar Dr. Abhilasha Business Mathematics Himalaya publication Mumbai
3. Sancheti & Kapoor Business Mathematics Sultan chand and sons New Delhi
4. Sharma J.K. Business Mathematics IK International pvt. Ltd. New Delhi
5. Kumar Mrityunjay Business Mathematics S. Chand Publishing New Delhi
6. Agrawal Dr. Mahesh Business Mathematics Ramprasad and sons Bhopal

सदस्यों के नाम एवं हस्ताक्षर

Chairman		HOD PG Department		HOD UG Department		Subject Expert	
1		1		1		1	C.G.A.Bhatta
2	R.C.Agrawal 07/06/22	2		2	K.S.Pusam	2	
3		3		3	Dr.R.K.Thakur	3	A.H.KHAN
4		4	Sandhya Pramod	4		4	
5		5		5		5	
6							

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	बी.कॉम. भाग– 1 (CCC- 2022)
Paper Code	प्रश्न पत्र– 6 CC-2204
Title of Subject	व्यवसायिक सन्नियम एवं रूपरेखा
Objective	सामान्य व्यापार कानुन के मुद्दों के व्यावहारिक कानुनी ज्ञान प्राप्त करेंगें। एक वैध अनुबंध की अनिवार्यता को समझेंगें।
Max Marks – 75+25	Min. Marks: 25+10
Credit Value	5

Detailed Syllabus

Units	Content of the syllabus	No. of lectures
इकाई– 1	अनुबन्ध अधिनियम (1872) : अनुबन्ध के प्रकार एवं वर्गीकरण, प्रस्ताव और स्वीकृति, पक्षकारों की अनुबन्ध करने की क्षमता, स्वतन्त्र सहमति, प्रतिफल, उद्देश्य की वैधता, व्यर्थ घोषित ठहराव।	15
इकाई– 2	विशिष्ट अनुबन्ध : हानि रक्षा (क्षतिपूर्ति) तथा प्रत्याभूति, निक्षेप तथा गिरवी, एजेन्सी (अभिकरण) के अनुबन्ध– अर्थ, एजेन्सी निर्माण के प्रकार, एजेन्ट के प्रकार, एक एजेन्ट की व्यक्तिगत दायित्व एवं एजेन्सी का समापन।	15
इकाई– 3	वस्तु विक्रय अधिनियम (1930) : परिभाषा, विक्रय एवं विक्रय के लिये ठहराव, वस्तुओं के प्रकार, शर्त और वारंटी, गैर–मालिकों द्वारा बिक्री, अदत्त विक्रेता, CIF, FOB और Ex-Ship अनुबन्ध।	15
इकाई– 4	विनिमय साध्य विलेख अधिनियम (1881): विनिमय साध्य विलेख की परिभाषाएं, विशेषताएं, प्रतिज्ञा पत्र, विनिमय विपत्र, धनादेश (चेक), धारक एवं यथाविधिधारी, चेक का रेखांकन, रेखांकन के प्रकार, पराकमण, विनिमय साध्य विलेख का अनादरण व मुक्ति, सूचना तकनीकी अधिनियम 2000 और ई–व्यवसाय से संबंधित साइबर अपराध अधिनियम 2012।	15
इकाई– 5	उपभोक्ता संरक्षण अधिनियम (2019): मुख्य प्रावधान, उपभोक्ता की परिभाषा, उपभोक्ता विवाद, शिकायत निवारण तंत्र, भारतीय साझेदारी अधिनियम 1932, सीमित दायित्ववाली साझेदारी अधिनियम 2008, बौधिक सम्पदा अधिकार अधिनियम का परिचय– कोपीराइट पेटेन्ट एवं ट्रेडमार्क (व्यापार चिन्ह)	15

Case study/Skill based activities/field work/project work etc. (for extra credit)

पाठ्यक्रम अध्ययन की परिलब्धियां	1. छात्रों को व्यापारिक एवं व्यावसायिक कानूनों के बुनियादी अवधारणा शर्तों एवं प्रावधानों को जानने के लिए। 2. व्यापार जगत को नियंत्रित करने वाले कानूनी ढ़ाचें के संबंध में बुनियादी प्रावधानों को समझना और विकसित करना। 3. उपभोक्ता संरक्षण अधिनियम के संबंध में प्रत्येक नागरिक के अधिकारों और दायित्वों को जानना।

Suggested Readings : Book

1. कुचल एम.सी. व्यवसाय अधिनियम : विकास पब्लिकेषन हाऊस देहली
2. प्रों. आर.सी. अग्रवाल : व्यवसाय नियमन रूपरेखा SBPD पब्लिकेशन हाऊस आगरा
3. कपुर एन.डी. : बिजिनेष लॉ सुल्तान चंद एण्ड सन्स न्यू दिल्ली
4. आर.एल नौलखा : बिजिनेष लॉ रमेष बुक डिप्पों जयपुर
5. अरूण कुमार गांगले : व्यावसायिक सन्नियम एवं रूप रेखा रामप्रसाद सन्स आगरा

सदस्यों के नाम एवं हस्ताक्षर

	Chairman		HOD PG Department		HOD UG Department		Subject Expert
1		1		1	Shashi	1	Bhatia
2	R.C. Agrawal 02/06/22	2		2	K.S. Punam	2	
3		3		3		3	A.H. KHAN AC
4		4	Sandhya Pawar	4		4	
5		5		5		5	
6		6		6		6	

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS	
Class Name	बी.कॉम. भाग– 1 (CCC-2022)
Paper Code	प्रश्न पत्र –7 (CC-2205)
Title of Subject	व्यावसायिक पर्यावरण
Objective	1. छात्रों को व्यवसाय के स्थानीय और वैश्विक वातावरण से परिचित करना। 2. छात्रों को व्यवसाय में आर्थिक, राजनीतिक और तकनीकी वातावरण से परिचित करना। 3. सरकार की नीतियों और व्यापार की कानूनी वातावरण का गहन ज्ञान प्राप्त करना।
Max Marks – 75+25	Min. Marks: 25+10
Credit Value	5

Detailed Syllabus

Units	Content of the syllabus	No. of lectures
इकाई– 1	**व्यवसायिक पर्यावरण** : पर्यावरण के प्रकार– आंतरिक, बाहय, सूक्ष्म एवं वृह पर्यावरण, उद्योग की प्रतिस्पर्धी संरचना, विश्लेषणात्मक पर्यावरण एवं कूटनीतिक प्रबंधन, प्रबंधन विविधता, व्यवसाय के क्षेत्र, व्यवसाय की विशेषताएं, उद्देश्य और अध्ययन का उपयोग, विश्लेषणात्मक पर्यावरण की प्रक्रिया एवं सीमाएं	15
इकाई– 2	**विकास की आर्थिक समस्याएं** : मुद्रा स्फीति, समानांतर अर्थव्यवस्था, औद्योगिक रूग्णता **विकास के आर्थिक तत्व** : प्रत्यक्ष विदेशी विनियोग (FDI), विदेशी पोर्टफोलियो निवेश (FPI), सूक्ष्म, लघु और मध्यम उद्यम (MAMES)	15
इकाई– 3	**अंतर्राष्ट्रीय पर्यावरणः** विश्व व्यापार की प्रवृत्ति एवं विकासशील देशों की समस्याएं, विदेशी व्यापार एवं आर्थिक विकास **अंतर्राष्ट्रीय आर्थिक समूहः** गैट (GATT), विश्व व्यापार संगठन (WTO), अंकटाड (UNCTAD), विश्व बैंक अंतर्राष्ट्रीय मुद्रा कोष (IMF), ट्रिप्स (TRIPS), ट्रिम्स (TRIMS) **क्षेत्रिय व्यापार समझौतेः** यूरोपियन यूनियन (EU) ASEAN, SAARC, NAFTA	15
इकाई– 4	**सरकारी नीतियां** : आयात–निर्यात नीति, मौद्रिक एवं राजकोषीय नीति, निजीकरण, उदारीकरण, वैश्वीकरण, नोटबंदी/विमुद्रीकरण, विनिवेश, विदेशी मुद्रा प्रबंध अधिनियम 2000, औद्योगिक नीति, औद्योगिक लाईसेंसिंग (राष्ट्रीय और राज्य)	15
इकाई– 5	आर्थिक नियोजनः आवश्यकता, उद्देश्य, व्यूहरचना, पूर्व पंचवर्षीय योजनाओं की समीक्षा, नीति आयोग, सकल घरेलू उत्पादः अर्थ, विशेषताएं, गणना एवं रोजगार में प्रभाव और उत्पादकता भारत और छत्तीसगढ़ के संदर्भ में **छत्तीसगढ़ में आर्थिक पर्यावरणः** छत्तीसगढ़ की अर्थ व्यवस्था– आधारभूत विशेषताएं, छत्तीसगढ़ की जनसंख्या एवं इसकी विशेषताएं, छत्तीसगढ़ में उद्योग एवं औद्योगिक विकास, छत्तीसगढ़ में खनिज एवं खनिज आधारित उद्योग, छत्तीसगढ़ में कृषि, छत्तीसगढ़ में वन एवं वनोपज, छत्तीसगढ़ में बिजली आपूर्ति का विकास, छत्तीसगढ़ में परिवहन का विकास,	15
Case study/Skill based activities/field work/project work etc. (for extra credit)		

पाठ्यक्रम अध्ययन की परिलब्धियां	1. पर्यावरण और व्यवसाय के बीच संबंधों को समझें, पर्यावरण विश्लेषण तकनीकों को व्यवहार में लागू करना। 2. छात्र व्यावसायिक पर्यावरण के वैचारिक ढांचे को प्रदर्शित और विकसित करने में एवं अंतर्राष्ट्रीय व्यापार में रूचि पैदा करने में सक्षम होंगे। 3. स्थानीय व्यावसायिक पर्यावरण की प्रकृति और उसके घटक से परिचित होंगे। 4. परिचित छात्र व्यावसायिक संगठन के उद्भव, उत्थान, और सुचारू कामकाज के लिए नीतियां और विभिन्न भूमिकाओं को समझेगे

Suggested Readings:

01. Sheikh Saleem, Business Environment, Pearson
02. Francis, Cherunilan, Business Environment, Himalaya Publishing House
03. Gupta C.B., Business Environment Sultan Chand & Sons
04. Paliwar Veena Keshav, Business Environment, PHI Learning Private Limited, Delhi
05. Singh Ranjeet ,Business Environment, Kalyani Publishers New Delhi
06. Sinha V.C., Business Environment (Hindi & English), SBPD Publications Agra
07. Upadhyay Sharma Dayal, Business Environment (Hindi), Ramesh Book Depot Jaipur
08. Singh, Dr. S.K., Business Environment (Hindi), Sahitya Bhawan Publication Agra
09. Jain Dr. S.C., Business Environment (Hindi), Kailash Pustak Sadan, Bhopal
10. Joshi Rosy, Kapoor Sangam, Business Environment (Hindi), Kalyani Publishers New Delhi

सदस्यों के नाम एवं हस्ताक्षर

Chairman		HOD PG Department		HOD UG Department		Subject Expert	
1		1	07/06/22	1	Shashi	1	G.A.Bhatta
2	07/06/22	2		2	K.S. Pusam	2	
3		3		3		3	A.H.Khan
4		4	Sandhya Pnl	4		4	
5		5		5		5	
6		6		6		6	

CENTRAL BOARD OF STUDIES-COMMERCE-PROPOSED SYLLABUS		
Class Name	बी.कॉम. भाग– 1 (CCC-2022)	
Paper Code	प्रश्न पत्र– 8 (CC-2206)	
Title of Subject	व्यवसायिक अर्थशास्त्र	
Objective	पाठ्यक्रम का उद्धेश्य शिक्षार्थियों को मौलिक, आर्थिक सिद्धांतों और मूल्य निर्धारण, मांग, आपूर्ति, उत्पादन और लागत अवधारणाओं पर उनके प्रभाव से परिचित कराना है।	
Max Marks – 75+25	Min. Marks: 25+10	
Credit Value	5	
Detailed Syllabus		
Units	**Content of the syllabus**	**No. of lectures**
इकाई– 1	**परिचयः** सूक्ष्म अर्थशास्त्र और समष्टि अर्थशास्त्र का अर्थ, क्षेत्र, महत्व एवं सीमाएं, प्रकृति, सूक्ष्म एवं समष्टि अर्थशास्त्र के मध्य अंतर **व्यवसायिक अर्थशास्त्रः** अर्थ, परिभाषा, उद्धेश्य, प्रकृति और क्षेत्र, व्यवसायिक अर्थशास्त्री के भूमिकाएं एवं जिम्मेदारियां। **बाजार की मांग का विश्लेषणः** मांग का अर्थ एवं मांग के निर्धारक, मांग में परिवर्तन, मांग के फलन, मांग के नियम, मांग के प्रकार और मांग के नियम के अपवाद।	15
इकाई– 2	**उपभोक्ता व्यवहार और मांग की लोचः** मांग की उपयोगिता का विश्लेषण, सीमांत उपयोगिता ह्रास नियम और उपभोक्ता अधिशेष, उदासीनता वक्र तकनीक, कीमत रेखा या बजट रेखा, मांग की लोच की अवधारणाएं, महत्व एवं उनके प्रकार, लोच की विभिन्न अवधारणा की गणना, मांग की कीमत लोच को मापने के तरीकें	15
इकाई– 3	**उत्पादन विश्लेषणः** आपूर्ति का अर्थ और आपूर्ति के फलन, स्टॉक और प्रवाह की अवधारणा, आपूर्ति के निर्धारक, आपूर्ति का नियम, आपूर्ति में परिवर्तन, उत्पादन फलनः (अ) परिवर्तनशील अनुपातों का नियम (ब) पैमाने के प्रतिफल के नियम, पैमाने की अर्थव्यवस्थाएं और विसंगतियां	15
इकाई– 4	**बाजार संरचना और फर्म और उद्योग का संतुलनः** अर्थ, वर्गीकरण एवं बाजार के प्रकार, बाजार संरचना– पूर्ण एवं अपूर्ण प्रतियोगिता के अनुरूप, पूर्ण प्रतियोगिता के अंतर्गत कीमत और उत्पादन निर्धारण, एकाधिकार के अंतर्गत कीमत और उत्पादन निर्धारण, मूल्य विभेदीकरण– विशेषताएं, कीमत और उत्पादन निर्धारण, एकाधिकृत प्रतियोगिता के अंतर्गत कीमत और उत्पादन निर्धारण, अल्पाधिकार	15
इकाई– 5	**छत्तीसगढ़ अर्थव्यवस्थाः** मूल्य नियंत्रण– मूल्य सीमा और मूल्य तल, छत्तीसगढ़ की अर्थव्यवस्था का अध्ययन, अर्थव्यवस्था में विकास की संभावनाएं, छत्तीसगढ़ का आर्थिक सर्वेक्षण	15
Case study/Skill based activities/field work/project work etc. (for extra credit)		
पाठ्यक्रम अध्ययन की परिलब्धियां	1. विभिन्न आर्थिक प्रणाली कैसे कार्य करती है और विभिन्न आर्थिक निर्णयों के निहित अर्थों का मूल्यांकन कैसे होता है। 2. उपभोक्ता किस प्रकार विभिन्न वस्तुओं पर लंबित अपनी संतुष्टि को अधिकतम करने का प्रयास करता है। 3. उत्पादन में प्रयुक्त निविष्ट और परिणामी उत्पादन और लागत के बीच के संबंध का विश्लेषणात्मक अध्ययन 4. विभिन्न बाजार स्थितियों के लिए बाजार तंत्र और फर्मों के व्यवहार और फर्मों की प्रतिक्रियाओं का विश्लेषण कर व्याख्या करना। 5. विभिन्न बाजार स्थितियों के तहत मूल्य निर्धारण के विभिन्न कारकों की निरीक्षण करें।	

Suggested Readings:

01. Dr. V.C. Sinha (2022): Business Economics; SBPD Publishing House
02. M.L. Jhingan (2016); Microeconomics, Vrinda Publication Delhi
03. Dr. Jay Prakash Mishra (2017); SBPD Publishing House, Agra
04. Dr. J.K. Jain; Business Economics, Madhya Pradesh Hindi Granth Academy; Bhopal.

Websites:

1. Relevant study material of ICAI: www.icai.org.
2. https://www.icsi.edu/media/website/Business%20Economic
3. https://www.businesseconomics.com/

सदस्यों के नाम एवं हस्ताक्षर

Chairman		HOD PG Department		HOD UG Department		Subject Expert	
1		1		1		1	
2	07/06/22	2		2	K. S. Pusam	2	
3		3		3		3	A. Y. KHAN
4		4	Sandhya Pmd	4		4	
5		5		5		5	
6							

Scheme of B.Com. (Computer Application)

Year	Course Code	Subject Name	Theory/ Practical	Total Credit	Total Marks	
					Max	Min
First	BCOMCA-1T	Computer Fundamental and Information Technology	Theory	4	50	17
	BCOMCA -2T	PC Software and Multimedia	Theory	4	50	17
	BCOMCA-1P	LAB 1: PC Software and Multimedia	Practical	2	50	17
Second	BCOMCA-3T	E-Commerce	Theory	4	50	17
	BCOMCA-4T	Computerized Accounting with Tally	Theory	4	50	17
	BCOMCA-2P	LAB 2: Tally	Practical	2	50	17
Third	BCOMCA-5T	Programming in Visual Basic	Theory	4	50	17
	BCOMCA-6T	Relational Database Management System	Theory	4	50	17
	BCOMCA-3P	LAB 3: Visual Basic and RDBMS	Practical	2	50	17
Total				**30**	**450**	

Note: There shall be four extra credits in all the years of under graduation for internship/apprenticeship. The certificate of extra credits would be provided by the concern university and is not mandatory.

Part A: Introduction				
Program: **Certificate Course**		Class: **B. Com I Year- CA**	Year: **2022**	Session:**2022-2023**
1	Course Code	**BCOMCA-1T**		
2	Course Title	**Computer Fundamentals and Information Technology**		
3	Course Type	**Theory**		
4	Pre-requisite (if any)	No		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Understand the history and types of computers and various input/output devices. • Understand the concept of memory and its types. • Understand the basic components and storage of computer system.. • Understand the concept of software and computer languages. • Understand the concept of information technology.		
6	**Credit Value**	**Theory: 4**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks: 17**	

Part B: Content of the Course		
Total No. of Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**Fundamental of Computer**: History of computer, Generation of computer, Types of Computers, Block diagram of CPU, Digital and Analog computers and its evolution. Major components of digital computers, types of digital computers, Microprocessors, Single chip Microcomputer, Large and small computers, Users interface, hardware, software and firmware, multiprogramming, multiuser system, Dumb smart and intelligent terminals, **Number system & Computer Codes:** Number systems: Decimal number system. Binary number system. Octal and Hexadecimal number system. 1's and 2's complement. Codes: ASCII, EBCDI codes, gray code and BCD.	12
II	**Computer Peripherals:** Introduction to Input Devices: Categorizing Input Hardware, Keyboard, Direct Entry- Card Readers Scanning Devices - O.M.R. Character Readers, Thumb Scanner, MICR Smart Cards, Voice Input Devices Pointing Devices - Mouse Light Pen, Touch Screen. Computer Output Devices: Output Fundamentals, Hardcopy Output Devices, Impact Printers, Non-Impact Printers, Plotters, Computer output Microfilm/Microfiche (COM) System, Softcopy Output Devices, Cathode Ray Tube, Flat Screen Technologies, Projectors, Speakers	12
III	**Basic Components and Storage**: Central Processing Unit: The Microprocessor, control unit, A.L.U., Registers, Buses, Main Memory, Main Memory (RAM) for microcomputers, Read Only Memory (ROM). Storage Devices: Storage Fundamentals, Primary and Secondary Storage, Data Storage and Retrieval Methods – Sequential, Direct & Indexed Sequential, Tape Storage and Retrieval Methods Tape storage Devices, characteristics and limitations, Direct access Storage and Microcomputers - Hard Disks, Disk Cartridges, Direct Access Storage Devices for large Computer systems, Mass storage systems and Optical Disks, CD ROM.	12
IV	**Computer Software and languages:** System Software: System software Vs. Application Software, Types of System Software, Introduction and Types of Operating Systems, Boot Loader, Diagnostic programs, BIOS, Utility Programs,	12

	Application Software: Microcomputer Software, Interacting with the System, Trends in PC software, Types of Application Software, Difference between Program and Packages. Computer Language: Definition, Generations of Computer languages, Types of Languages, Language Processors: Assembler, Interpreter, Compiler, Linker and Loader, Programming constructs, Algorithm and flowchart.	
V	**Information Technology:** Concept of IT and information system, Application of IT (In Business, Education Medicine Science Governance and Agriculture) Impact of IT on society and industry, Legal and Ethical aspect of IT, Security and Threats in IT, M-Commerce, Virtual reality, latest trend in IT, future of IT.	12
Keywords: Computer, Input /Output Devices, Memory, Software and Computer Languages, IT.		

Part C - Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
2. Fundamentals of Computers, V. Rajaraman, PHI Sixth Edition.
3. Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publishers, Fifth Edition.
4. Fundamentals of Information Technology, Chetan Shrivastava, Kalyan Publishers.
5. Computers Today, Suresh K. Basandra, Galgotia Publications.
6. Fundamentals of Information Technology, Alexis Leon and Mathews Leon, Vikash Publication.

E-Resources:

Introduction to Computer Fundamental:

1. https://www.w3schools.blog/computer-fundamentals-tutorial
2. https://vikaspedia.in/education/digital-litercy/it-literacy-courses-in-associating-with-msup/computer-fundamentals
3. https://www.tutorialspoint.com/computer_fundamentals/index.htm
4. https://vikaspedia.in/education/digital-litercy/it-literacy- courses-in-associating-with-msup/computer-fundamentals
5. Concept of IT: https://onlinecourses.swayam2.ac.in/cec20_cs05/preview

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 50
Continuous Comprehensive Evaluation (CCE): As per rule
University Exam(UE): 50 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	As per rule

Declaration

The syllabus of this subject is framed as per the TOR provided by the department of higher education, Chhattisgarh.

1. Dr. H.S. Hota - Chairman
Prof. and Head, Department of Computer Science and Application

Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur

2. Dr. Sanjay Kumar - Member
Prof. and Head, SoS in Computer Science, (Present Online)
Pt. Ravishankar Shukla University, Raipur

3. Mr. Jitendra Kumar - Member
Asst. Prof., Dept. of Computer Science and Application (Present Online)
Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur

4. Mr. H.S.P. Tonde - Member
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5. Dr. Mamta Singh - Member
Asst. Prof. and Head, Sai College, Bhilai Hemchand Yadav Vishwavidyalaya, Durg (Present Online)

6. Mr. Sushil Kumar Sahu - Member
Asst. Prof. and Head, Christ College, Jagdalpur Shaheed Mahendra Karma Vishwavidyalaya, Bastar (Present Online)

7. Mr. Vikrant Gupta - Member
Prof. and Head, Batmul Ashram College, Salheana Shaheed Nand Kumar Patel University, Raigarh

8. Mr. L.K. Gavel - Member
Asst. Prof. and Head, Govt. Ghanshyam Singh Gupt, PG College, Balod Hemchand Yadav Vishwavidyalaya, Durg 13/06/2022

9. Dr. Anil Kumar Sharma - Member
Asst. Prof. and Head, A.P.S.G.M.N.S, Govt. PG College, Kawardha Hemchand Yadav Vishwavidyalaya, Durg 13.06.22

10. Mr. Vishwnath Tamrakar - Member
Asst. Prof. and Head, Sant Guru Ghasidas Govt. PG College, Kurud, Pt. Ravishankar Shukla University, Raipur

11. Ms. Anjeeta Kujur - Member
Asst. Prof. and Head, Govt. R.B.R.N.E.S. PG College, Jashpur Sant Gahira Guru University Sarguja, Ambikapur (Present Online)

12. Mr. Suresh Kumar Thakur - Member
Asst. Prof. and Head, Indira Gandhi Govt. PG College, Vaishali Nagar Hemchand Yadav Vishwavidyalaya, Durg (Present Online)

13. Dr. Ugrasen Suman - Member
Prof. and Head, Dept. of Computer Science (Present Online)
Devi Ahila Vishwavidyalaya, Indore

Date: 13.6.22

Part A: Introduction				
Program: Certificate Course		Class: B. Com.I Year- CA	Year: 2022	Session:2022-2023
1	Course Code	BCOMCA-2T		
2	Course Title	PC Software and Multimedia		
3	Course Type	Theory		
4	Pre-requisite (if any)	No		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Understand the MS Word with page setup, formatting text, print documents and mail merge • Understand the MS Excel with creating sheets, calculation in cell and prepare charts. • Understand the sorting & filter in MS Excel. • Understand the MS Power point with design templates, slide transaction and animation effects. • Understand the MS Access and graphics.		
6	**Credit Value**	**Theory: 4**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks: 17**	

Part B: Content of the Course		
Total No. of Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**PC PACKAGE:** Introduction to PC and Types of PC, **Introduction to word** processing software and if's features, creating new document, saving documents, Opening and printing documents. **Home Tab**: Setting fonts, Paragraph settings, various styles (Normal, no spacing, Heading1, Heading2, Title Strong), Find & replace, Format Printer, Copy paste and pasts special. **Insert Tab**: Pages, Tables, pictures, clipart, shapes, header & footer, word art, equation and symbols. **Page Layout Tab**: Page setup, page Background, Paragraph (indent and spacing). **Mailing Tab**: Create envelops and Labels, Mail merge. **Review Tab**: Spelling and grammar check, new comment, Protect document. **View Tab**: Document views, zoom, Window (New window, Split, Switch window).	12
II	**WORKING WITH MS-EXCEL:** Introducing Excel, Use of Excel sheet, creating new sheet, Saving, Opening & Printing workbook. **Home Tab**: Font, Alignment, Number, Styles and cells and editing, Conditional Formatting. **Insert Tab**: Table, Charts (Column Chart, Pie chart, Bar chart, Line chart) and Texts (heading & Footer, word art, signature line). **Page Layout Tab**: Page setup options, Scale to fit (width, height, scale) **Formulas Tab**: Auto sum (sum, average, min, max). Logical (IF, and, or, not, true, false), Math & trig (sin, cos, tan, ceiling, floor, fact, mod, log), watch window. **Data Tab**: Get external data from MS Access, Sort and filter options, Data validation, Group and ungroup. **Review Tab**: Protect sheet, protect workbook and Share workbook. **View Tab**: Page break, Page layout, freezing panes, Split and hide.	12
III	**WORKING WITH MS-POWERPOINT**: Introducing power point, Use of power point presentation, creating new slides saving, Opening and printing. **Home Tab**: New slide, Layout, Reset, Delete, setting text direction, align text, convert to smart art, drawing options. **Insert Tab**: Table picture, clipart, photo album, smart art, shapes and chart, movie and sound, hyperlink and action, text box, word art,	12

	object, **Design Tab**: Page setup option, slide orientation, applying various themes, selecting background style and formatting it. **Animation Tab**: Custom animation for entrance, exit and emphasis, applying slide transition, setting transition speed and sound, animation on rehears timing. **Slide show & View Tab**: Start slide show options, setup option. **View Tab**: Presentation views, colors and window option.	
IV	**WORKING WITH MS-ACCESS**: Front end and back end of application, Introduction to DMBS, features of DBMS, creating blank databases, Saving it in accdb format. Defining data type in MS Access. **Home Tab**: Datasheet view, design view, pivot chart view, pivot table view, sort and filter prions. **Create Tab**: Creating tables, creating reports, query wizard. **External Data Tab**: Importing data from access and excel sheet, exporting data to excel and MS word. **Datasheet Tab**: Relationships, fields and columns options, Data type and formatting options.	12
V	**ANIMATION AND GRAPHICS**: Basic concept of 2D/3D Animation, Principle of animation, application of Multimedia, hardware and Software resources requirement for animation, introduction of various file formats (. mpeg, gif, jpeg, mp4, .tif, .flv) Creating a new movie in flash: Get set Up, Input Text, Animate Text, Drawing and painting with tools, brush, create basic shapes like oval, Rectangle & Polystar Tools, Tools working with object & filing the object. Transformation, object properties, dialog box, creating layers, motion tweening, shape tweening, Mask layers, basic action scripts, importing sound through Flash	12
Keywords: MS Word, MS Excel, MS Power Point, MS Access, Graphics		

Part C - Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Microsoft Office 2007 Fundamentals, L. Story, D. Walls.
2. MS Office, S.S. Shrivastava, Firewall Media.
3. Office 2000 made easy, Alan Neibauer, Tata McGraw Hill.
4. FLASHMX Bible, Robert Reinhart.
5. Sams Teach Yourself Macromedia Flash 8 in 24 Hours, Phillip Kerman
6. How to do everything with Macromedia, Bonnie Blake, Doug Sahlin
7. Multimedia Making it works, Tay Vaughan Tata McGraw Hill

E-learning Resources:

1. Introduction to MS-Word:
   https://www.w3schools.blog/ms-word-tutorial
2. Introduction to MS-Excel:
   https://www.w3schools.com/excel/excel_introduction.php
3. Introduction to MS-Power Point:
   https://www.w3schools.blog/powerpoint-tutorial
4. Introduction to MS-Access:
   https://www.w3schools.com/sql/sql_ref_msaccess.asp
5. Concept of Animations:
   https://onlinecourses.swayam2.ac.in/ugc19_cs09/preview

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50

Continuous Comprehensive Evaluation (CCE): As per rule University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	As per rule

Declaration

The syllabus of this subject is framed as per the TOR provided by the department of higher education, Chhattisgarh.

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2.	Dr. Sanjay Kumar Prof. and Head, SoS in Computer Science, Pt. Ravishankar Shukla University, Raipur	- Member (Present Online)
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6.	Mr. Sushil Kumar Sahu Asst. Prof. and Head, Christ College, Jagdalpur Shaheed Mahendra Karma Vishwavidyalaya, Bastar	- Member (Present Online)
7.	Mr. Vikrant Gupta Prof. and Head, Batmul Ashram College, Salheana Shaheed Nand Kumar Patel University, Raigarh	- Member
8.	Mr. L.K. Gavel Asst. Prof. and Head, Govt. Ghanshyam Singh Gupt, PG College, Balod Hemchand Yadav Vishwavidyalaya, Durg	- Member
9.	Dr. Anil Kumar Sharma Asst. Prof. and Head, A.P.S.G.M.N.S, Govt. PG College, Kawardha Hemchand Yadav Vishwavidyalaya, Durg	- Member
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13.	Dr. Ugrasen Suman Prof. and Head, Dept. of Computer Science Devi Ahila Vishwavidyalaya, Indore	- Member (Present Online)

Date: 13.6.2022

Part A: Introduction				
Program: **Certificate Course**		Class: **B. Com-I Year- CA**	Year: **2022**	Session:**2022-2023**
1	Course Code	**BCOMCA-1P**		
2	Course Title	**LAB1: PC Software and Multimedia**		
3	Course Type	**Practical**		
4	Pre-requisite (if any)	No		
5	Course Learning. Outcomes (CLO)	At the end of course, Students will be able to: • Learn Modern office activities and their software requirements. • Create a new Word document and formatting a document using MS-WORD. • Create an electronic spreadsheet using MS-Excel, familiarize oneself with Excel's basicand advance features. • Create a slide show presentation and explore the Microsoft Office PowerPointenvironment. • Create table, form, query, report using MS-Access • Know about Animation, First movement of animation with shadow and light. • know about the history how the early people think or to add motion in animation		
6	**Credit Value**	**2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks: 17**	

Part B: Content of the Course	
Total Periods: 30	
Tentative Practical List	**Note:** This is tentative list; the teachers concern can add more program as per requirement. **MS Word** 1. Prepare **a grocery list** having four columns (Serial number, the name of the product,quantity and price) for the month of April, 06. • Font specifications for Title (Grocery List): 14-point Arial font in bold and italics. • The headings of the columns should be in 12-point and bold. • The rest of the document should be in 10-point Times New Roman. • Leave a gap of 12-points after the title. 2. Create a **telephone directory**. • The heading should be 16-point Arial Font in bold. • The rest of the document should use 10-point font size. • Other headings should use 10-point Courier New Font. • The footer should show the page number as well as the date last updated. 3. Design a **time-table form** for your college. • The first line should mention the name of the college in 16-point Arial Fontand should be bold. • The second line should give the course name/teacher's name and the departmentin 14-point Arial.

- Leave a gap of 12-points.
- The rest of the document should use 10-point Times New Roman font.
- The footer should contain your specifications as the designer and date of creation.

4. XYZ Publications plans to release a new book designed as per your syllabus. Design the **First page of the book** as per the given specifications.
   - The title of the book should appear in bold using 20-point Arial font.
   - The name of the author and his qualifications should be in the center of the pagein 16-point Arial font.
   - At the bottom of the document should be the name of the publisher and addressin 16-point Times New Roman.
   - The details of the offices of the publisher (only location) should appear in thefooter.
5. Create the following one page documents.
   - Compose a note inviting friends to a get-together at your house, including a listof things to bring with them.
   - Design a certificate in landscape orientation with a border around the document.
   - Design a Garage Sale sign.
   - Make a sign outlining your rules for your bedroom at home, using a numberedlist.
6. Create the following documents:
   - A newsletter with a headline and 2 columns in portrait orientation, includingat least one image surrounded by text.
   - Use a newsletter format to promote upcoming projects or events in yourclassroom or college.
7. Convert following text to a table, using comma as delimiterType the following as shown (do not bold).

   Color, Style, Item
   Blue, A980, Van
   Red, X023, Car
   Green, YL724, Truck
   Name, Age, Sex
   Bob, 23, M
   Linda, 46, F
   Tom, 29, M

8. Enter the following data into a table given on the next page.

Salesperson	Dolls	Trucks	Puzzles
Kennedy, Sally	1327	1423	1193
White, Pete	1421	3863	2934
Pillar, James	5214	3247	5467
York, George	2190	1278	1928
Banks, Jennifer	1201	2528	1203
Atwater, Kelly	4098	3079	2067

Pillar, James	5214	3247	5467
York, George	2190	1278	1928
Banks, Jennifer	1201	2528	1203
Atwater, Kelly	4098	3079	2067

Add a column **Region** (values: S, N, N, S, S, S) between the **Salesperson** and **Dolls** columnsto the given table Sort your table data by Region and within Region by Salesperson in ascending order:
In this exercise, you will add a new row to your table, place the word **Total** at the bottom of the Salesperson column, and sum the Dolls, Trucks, and Puzzles columns.

9. Wrapping of text around the image.

MS Excel

1. Enter the Following data in Excel Sheet

REGIONAL SALES PROJECTION						
State	**Qtr1**	**Qtr2**	**Qtr3**	**Qtr4**	**Qtr Total**	**Rate Amount**
Delhi	2020	2400	2100	3000	15	
Punjab	1100	1300	1500	1400	20	
U.P.	3000	3200	2600	2800	17	
Haryana	1800	2000	2200	2700	15	
Rajasthan	2100	2000	1800	2200	20	
TOTAL						
AVERAGE						

(a) Apply Formatting as follow:

i. Title in TIMES NEW ROMAN
ii. Font Size - 14
iii. Remaining text - ARIAL, Font Size -10
iv. State names and Qtr. Heading Bold, Italic with Gray Fill Color.
v. Numbers in two decimal places.
vi. Qtr. Heading in center Alignment.
vii. Apply Border to whole data.

(b) Calculate State and Qtr. Total
(c) Calculate Average for each quarter
(d) Calculate Amount = Rate * Total.

2. Given the following worksheet

	A	B	C	D
1	Roll No.	Name	Marks	Grade
2	1001	Sachin	99	
3	1002	Sehwag	65	
4	1003	Rahul	41	
5	1004	Sourav	89	
6	1005	HarBhajan	56	

Calculate the grade of these students on the basis of following

guidelines:

If Marks	Then Grade
>=80	A+
>= 60 and < 80	A
>= 50 and < 60	B
< 50	F

3. Given the following worksheet

	A	B	C	D	E	F	G
1	**Salesman**	**Sales in (Rs.)**					
2	No.	Qtr1	Qtr2	Qtr3	Qtr4	Total	Commission
3	S001	5000	8500	12000	9000		
4	S002	7000	4000	7500	11000		
5	S003	4000	9000	6500	8200		
6	S004	5500	6900	4500	10500		
7	S005	7400	8500	9200	8300		
8	S006	5300	7600	9800	6100		

Calculate the commission earned by the salesmen on the basis of following Candidates:

If Total Sales	**Then Commission**
< 20000	0% of sales
> 20000 and < 25000	4% of sales
> 25000 and < 30000	5.5% of sales
> 30000 and < 35000	8% of sales
>= 35000	11% of sales

The total sales are sum of sales of all the four quarters.

4. Company XYZ Ltd. pays a monthly salary to its employees who consist of basic salary, allowances & deductions. The details of allowances and deductions are as follows:

- **HRA Dependent on Basic**
  30% of Basic if Basic <=1000
  25% of Basic if Basic>1000 & Basic<=3000
  20% of Basic if Basic >3000
- **DA Fixed for all employees, 30% of Basic**
- **Conveyance Allowance (CA)**
  Rs. 50/- if Basic is <=1000
  Rs. 75/- if Basic >1000 & Basic<=2000
  Rs. 100 if Basic >2000
- **Entertainment Allowance (EA)**
  NIL if Basic is <=1000
  Rs. 100/- if Basic > 1000

Deductions

- **Provident Fund**
  6% of Basic
- **Group Insurance Premium**
  Rs. 40/- if Basic is <=1500
  Rs. 60/- if Basic > 1500 & Basic<=3000
  Rs. 80/- if Basic >3000

Calculate the following:

Gross Salary= Basic + HRA + DA + CA + EA
Total Deduction = Provident Fund + Group Insurance Premium
Net Salary= Gross Salary – Total Deduction

5. Create Payment Table for a fixed Principal amount, variable rate of interests and time inthe format below:

No. of Installments	5%	6%	7%	8%	9%
3	XX	XX	XX	XX	XX
4	XX	XX	XX	XX	XX
5	XX	XX	XX	XX	XX
6	XX	XX	XX	XX	XX

6. Use an array formula to calculate Simple Interest for given principal amounts given therate of Interest and time

Rate of Interest	8%
Time	5 Years
Principal	Simple Interest
1000`	?
18000	?
5200	?

7. The following table gives year wise sale figure of five salesmen in Rs.

Salesman	2019	2020	2021	2022
S1	10000	12000	20000	50000
S2	15000	18000	50000	60000
S3	20000	22000	70000	70000
S4	30000	30000	100000	80000
S5	40000	45000	125000	90000

(a) Calculate total sale year wise.
(b) Calculate the net sale made by each salesman
(c) Calculate the maximum sale made by the salesman
(d) Calculate the commission for each salesman under the condition.
  (i) If total sales >4,00,000 give 5% commission on total sale made by the salesman.
  (ii) Otherwise give 2% commission.
(e) Draw a bar graph representing the sale made by each salesman.
(f) Draw a pie graph representing the sale made by salesman in 2000.

8. Enter the following data in Excel Sheet

PERSONAL BUDGET FOR FIRST QUARTER

Monthly Income (Net): 1,475

EXPENSES	JAN	FEB	MARCH QUARTER TOTAL	QUARTER AVERAGE
Rent	600.00	600.00	600.00	
Telephone	48.25	43.50	60.00	
Utilities	67.27	110.00	70.00	

Credit Card	200.00	110.00	70.00	
Oil	100.00	150.00	90.00	
AV to Insurance	150.00			
Cable TV	40.75	40.75	40.75	
Monthly Total				

Calculate Quarter total and Quarter average.

(a) Calculate Monthly total.
(b) Surplus = Monthly income - Monthly total.
(c) What would be total surplus if monthly income is 1500.
(d) How much does telephone expense for March differ from quarter average.
(e) Create a 3D column graph for telephone and utilities.
(f) Create a pie chart for monthly expenses.

9. Enter the following data in Excel Sheet

TOTAL REVENUE EARNED FOR SAM'S BOOKSTALL

Publisher Name	1997	1998	1999	2000	Total
A	Rs. 1,000.00	Rs. 1100.00	Rs. 1,300.00	Rs. 800.00	
B	Rs. 1,500.00	Rs. 700.00	Rs. 1,000.00	Rs. 2,000.00	
C	Rs. 700.00	Rs. 900.00	Rs. 1,500.00	Rs. 600.00	
D	Rs. 1,200.00	Rs. 500.00	Rs. 200.00	Rs 1,100.00.	

(a) Compute the total revenue earned.
(b) Plot the line chart to compare the revenue of all publishers for 4 years.
(c) Chart Title should be _Total Revenue of Sam's Bookstall (1997-2000)'
(d) Give appropriate categories and value axis title.

10. Generate 25 random numbers between 0 & 100 and find their sum, average and count. Howmany no. are in range 50-60.

MS Power Point

1. Do the following task:
   i. Start a new blank presentation
   ii. Your first Slide is going to be a Title Slide
   iii. Write the Text as in the preview below:
   Lighthouse Co Ltd
   iv. Make the Font of "Lighthouse" Arial Black and size 88
   v. Insert a second slide this should be with a layout of Bulleted List
   vi. Write the Text as in preview below
      (a) [Title]: Lighthouse Co Ltd
      (b) [Body]:
         i. Mission Statement
         ii. Company Objectives
         iii. Management Team
         iv. Employees
         v. Sales

vii. Make the Font Colour of the Points to Green

viii. Insert a third slide this should be an Organization Chart. Include the following people in the chart:

a. David Brent, General Manager
b. Tim Canterbury, Head of Sales
c. Gareth Keenan, Assistant to the General Manager
d. Dawn Tinsley , Human Resources Manager

ix. Add a fourth slide this should be a Table Chart. The chart should look like the following:

New Products	Discontinued Products
Digital Cameras	8mm Cameras
Ultra Slim Video Camera	8x Zoom Video Camera
25" Plasma TVs 21"	Black and White TVs
DVD Recorders	Video Players
7.1 Dolby Surround Systems	2 channel stereo systems

x. Make the titles New Products and Discontinued Products with a shadow effect and centred in the cell. Widen columns to fit Text as above.

xi. The Fifth slide should be a Chart slide. The chart should be a bar chart, and include the following data must be used to form the chart:

	January	February	March	April
TVs	20	27	90	75
DVDs	30	38	34	31
Wifi equipment	45	46	45	43
Video Recorders	25	29	15	40

xii. Change the colours of the chart so that the series of bars are red, yellow, pink, and green.

xiii. Add a light coloured background to all slides in the presentation.

xiv. Add also Transition effects between each slides and also different effects for all text and pictures it the presentation.

xv. Reverse the order of the second and third slides

xvi. Save the presentation as Light House Ltd.

2. Do the following:

i. Load your Presentation Application and start a new presentation

ii. The first slide is a Title Slide. Select the appropriate layout and enter the title: **Annual Food Fair**

iii. Add the sub title: .**A Celebration of Eating**

iv. Insert a small, red circle at the bottom right of the title slide.

v. Change the font colour for the whole title and sub title to blue, and apply a text shadow effect just to the words **Food** and **Fair**

vi. Insert a second slide to the presentation, selecting a layout appropriate for a series of bullet points, and using the title: **The Menu**. Enter the following text:

i. Chocolate Desserts
ii. Cakes and Puddings
iii. Roast Meals
iv. Using Pasta Creatively

vii. Change the line spacing for these bullet points to 1.5 lines.

viii. Increase the font size for the words **The Menu** in the title.

ix. Add a footer with your name and the text: **Food Fair** so they both appear on every slide, and number all the slides. (Make sure the number is not obscured by the red circle on the title slide)

x. Insert a third slide, which is to be an organisation chart. Use the title **Meet The Team**. Enter: **Maggie Peet, Manager** at the top of the chart, and show the following three as reporting to Maggie Peet: **Brian Webb, Bookings; Janine Newton, Publicity; Gregg Brown, Accounts**

xi. Embolden the text in the title of the third slide, and change the font to Arial.

xii. Apply a light coloured background to all the slides in the presentation

xiii. On the third slide, insert an image suitable for the topic of food from an image library. Reduce the size of the image and place it where it will not interfere with text.

xiv. Save the presentation as **foodfair**.

xv. Print the presentation with three slides per page, and close the presentation.

3. Do the followings:

i. Load your Presentation Application and start a new presentation

ii. The first slide is a Title Only Slide. Select the appropriate layout and enter the title: **Cook Family Cruises**.

iii. Add a small blue rectangle at the top left of this slide.

iv. Change the font colour for the whole title to red, and apply a text shadow effect just to the word **Cruises**.

v. Insert a second slide to the presentation, selecting a layout appropriate for a series of bullet points, and using the title: **Our Itinerary**. Enter the following text:

   a. Canary Islands
   b. Mediterranean
   c. Greek Islands

vi. Change the line spacing for these bullet points to 2 lines. Increase the font size of the word **Itinerary** in the title. Add a footer with your name and the
text: **Cruise Information** so they both appear on every slide, and number all the slides.

vii. Insert a third slide, which is to be a graph. Use the title **Our Market Share**. Use the following data to produce a pie chart: Cook 54%; Jackson 28%; Wilson 12%; Bennett 5%

viii. Embolden the text in the title of the third slide, and change the font to Arial.

ix. Apply a different background to each slide in the presentation.

x. On the third slide, insert an image suitable for the topic of holidays from an image library. Reduce the size of the image and place it where it will not interfere with text.

xi. Add a 4th slide containing nothing but the text: **Travel with us for less!!**

xii. Save the presentation as holidays.

xiii. Print the presentation with 4 slides per page, and close the presentation.

4. Create an animation looks like the leaf is falling in a tree.
5. Create an animation looks like demolish a world trade center in America.

MS Access

1. Create a database named "college" and perform the following tasks:

   a. Create a table named "student" having following fields
   b. Class, Roll no and Name with these Information i.e., Field Name, Data type and Description Fill at least 5 records.
   c. Prepare a query to display all records and Name should be in ascending order.
2. Create the employee table in MS-Access with the referential integrity-foreign key.

Multimedia Animation and Photoshop

1. Create a Flash movie to draw the symbol of an animal and apply motion between.
2. Create a Flash movie to create a minimum of five layers (Water, fish, bubbles, plants etc.) of an aquarium and apply motion between.
3. Create a Flash movie to create mask.
4. Create a Flash movie to create Fade In/Fade Out in four pictures.
5. Create a Flash movie to create the symbol of a wheel and scale and rotate it.
6. Import an image in Photoshop and change its background using marquee and lasso tools.
7. Import an image in Photoshop and copy it using heal brush tool.

Keywords: MS Word, MS Excel, MS Power Point, MS-Access, Animations and Graphics.

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Microsoft Office 2007 Fundamentals, L. Story, D. Walls.
2. MS Office, S.S. Shrivastava, Firewall Media.
3. Office 2000 made easy, Alan Neibauer, Tata McGraw Hill.
4. FLASHMX Bible, Robert Reinhart.
5. Sams Teach Yourself Macromedia Flash 8 in 24 Hours, Phillip Kerman
6. How to do everything with Macromedia, Bonnie Blake, Doug Sahlin
7. Multimedia Making it works, Tay Vaughan Tata McGraw Hill

E-Resources

1. Introduction to MS-Word: https://www.w3schools.blog/ms-word-tutorial
2. Introduction to MS-Excel: https://www.w3schools.com/excel/excel_introduction.php
3. Introduction to MS-Power Point: https://www.w3schools.blog/powerpoint-tutorial

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): As per rule University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	As per rule

Declaration

The syllabus of this subject is framed as per the TOR provided by the department of higher education, Chhattisgarh.

1. Dr. H.S. Hota - Chairman
   Prof. and Head, Department of Computer Science and Application
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2. Dr. Sanjay Kumar - Member (Present Online)
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Prof. and Head, Dept. of Computer Science (Present Online)
Devi Ahila Vishwavidyalaya, Indore

Date: 13-06-2022

हेमचंद यादव विश्वविद्यालय, दुर्ग (छ.ग.)

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क्र. 477 /अका./2023 दुर्ग, दिनांक : 23/06/2023

प्राचार्य,
समस्त संबद्ध महाविद्यालय,
हेमचंद यादव विश्वविद्यालय,
दुर्ग (छ.ग.)

विषयः— स्नातक स्तर के नवीन पाठ्यक्रम के भाग–एक को सत्र 2023–24 से विश्वविद्यालय में लागू करने विषयक।
संदर्भः— अपर संचालक, उच्च शिक्षा संचालनालय, नवा रायपुर, अटल नगर का पत्र क्र. 3985/237/आउशि/2023, दिनांक 13.06.2023।

————00————

विषयांतर्गत लेख है कि संदर्भित पत्र के माध्यम से प्राप्त स्नातक स्तर भाग–एक के निम्नलिखित कक्षा/विषयों के परिवर्तित/संशोधित पाठ्यक्रम शिक्षा सत्र 2023–24 से लागू किये जाते हैंः–

1.	बी.ए.	–	आधार पाठ्यक्रम–हिन्दी भाषा, अंग्रेजी भाषा, हिन्दी साहित्य, अंग्रेजी साहित्य, राजनीतिशास्त्र, अर्थशास्त्र, नृत्य, दर्शनशास्त्र, समाजशास्त्र, इतिहास, संस्कृत, मानवविज्ञान, भूगोल, मनोविज्ञान, सांख्यिकी, कम्प्यूटर।
2.	बी.एस–सी.	–	आधार पाठ्यक्रम–हिन्दी भाषा, अंग्रेजी भाषा, जीव विज्ञान, मानवविज्ञान, गणित, बायोटेक्नोलॉजी, कम्प्यूटर साईंस, भौतिकी, प्राणीशास्त्र, भूविज्ञान, आई.टी., सूक्ष्मजीवविज्ञान, वनस्पतिशास्त्र, इलेक्ट्रॉनिक्स, रसायन शास्त्र, सांख्यिकी, भूगोल।
3.	बी.एस–सी. (गृह विज्ञान)	–	आधार पाठ्यक्रम – हिन्दी भाषा, अंग्रेजी भाषा एवं गृह विज्ञान।
4.	बी.कॉम.	–	आधार पाठ्यक्रम – हिन्दी भाषा, अंग्रेजी भाषा एवं वाणिज्य।
5.	विधि	–	एल.एल.बी., बी.ए.एल.एल.बी
6.	प्रबंध	–	बी.बी.ए.
7.	कम्प्यूटर	–	बी.सी.ए.
8.	शिक्षा	–	बी.एड.
9.	लाईब्रेरी साईंस	–	बी. लिब.

उपरोक्त विषयों को शिक्षा सत्र 2023–24 से संशोधित रूप में स्नातक स्तर भाग–एक के लिए लागू किया जाता है स्नातक स्तर भाग दो एवं तीन के पाठ्यक्रम यथावत रहेंगे।

अतः आपसे अनुरोध है कि पाठ्यक्रम परिवर्तन/संशोधन से महाविद्यालय के शिक्षकों एवं छात्र–छात्राओं को अवगत कराने का कष्ट करेंगे।

टीप :– परिवर्तित/संशोधित पाठ्यक्रम विश्वविद्यालय की वेबसाईट पर उपलब्ध है।

संलग्न : उपरोक्तानुसार।

कुलसचिव

क्र. 478 /अका./2023 दुर्ग, दिनांक 23/06/2023

प्रतिलिपिः–

1. अपर संचालक, उच्च शिक्षा संचालनालय, नवा रायपुर, अटल नगर का पत्र क्र. 3985/237/आउशि/2023, दिनांक 13.06.2023 के परिपेक्ष्य में सूचनार्थ।
2. कुलपति के निज सहायक एवं कुलसचिव के निज सहायक, हेमचंद यादव विश्वविद्यालय, दुर्ग।
3. उपकुलसचिव, परीक्षा विभाग एवं उपकुलसचिव, गोपनीय विभाग हेमचंद यादव विश्वविद्यालय, दुर्ग।

सहा. कुलसचिव (अका.)

B.Sc.Part-I
विषय–सूची

1. Revised Ordinance No. 21
2. Scheme of Examination
3. Environmental Studies
4. Foundation Course :आधार पाठ्यक्रम

   प्रथम हिन्दी

   द्वितीय –अंग्रेजी भाषा

   Physics (भौतिक शास्त्र)
6. Chemistry (रासायन शास्त्र)
7. Zoology (प्राणी शास्त्र)
8. Botany (वनस्पति शास्त्र)
9. Mathematics (गणित)
10. Microbiology (सूक्ष्म जीव विज्ञान)
11. Geology (भू – विज्ञान)
12. Anthropology (मानव विज्ञान)
13. Statistics (सांख्यिकी)
14. Defense Studies (रक्षा अध्ययन)
15. Industrial Chemistry (औद्योगिक रसायन)
16 Computer Science
17. Electronics Equipment Maintenance
18. Electronics
19. Information Technologies
20. Industrial Microbiology
21. Bio Chemistry
22. Biotechnology

REVISED ORDINANCE NO. 21

BACHELOR OF SCIENCE

1. The three year course has been broken up into three Parts. Part-I known as B.Sc. Part-I examination at the end of the first year, Part-II known as B.Sc. Part-Ii examination at the end of the second year and Part-III known as B.Sc. Part-III examination at the end of the third year.

2. A candidate who after passing (10+2) Higher Secondary or Intermediate examination of C.G. Board of Secondary Education Bhopal or any other Examination recognized by the University or C.G. Board of Secondary Education as equivalent thereto, has attended a regular course of study in an affiliated College or in the Teaching Department of the University for one academic year shall be eligible for appearing at the B.Sc. Part-I examination.

3. A candidate who, after passing the B.Sc.-I examination of the University or any other examination recognized by the University as equivalent thereto, has attended a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Sc. Part-II examination.

4. A candidate who, after passing the B.Sc. Part-Ii examination of the University, has completed a regular course of study for one academic year in an affiliated college or in the Teaching Department of the University shall be eligible for appearing at the B.Sc. Part-III examination.

5. Besides regular students, subject to their compliance with this Ordinance ex-student and non-collegiate candidates shall be permitted to offer only such subjects/papers as are taught to the regular student at any of the University Teaching Department or College.

6. Every candidate appearing in B.Sc. Part-I, Part-II and Part-III examination shall be examined in-

   (i) Foundation Course:

   (ii) Any one of the following combinations of three subjects:-

      1. Physics, Chemistry &Mathematics.
      2. Chemistry, Botany &Zoology.
      3. Chemistry, Physics &Geology.
      4. Chemistry, Botany &Geology.
      5. Chemistry, Zoology &Geology.
      6. Geology, Physics &Mathematics.
      7. Chemistry, Mathematics &Geology.
      8. Chemistry, Botany & Defense Studies.
      9. Chemistry, Zoology & Defense Studies
      10. Physics, Mathematics & Defense Studies.
      11. Chemistry, Geology & Defense Studies

12. Physics, Mathematics &Statistics
13. Physics, Chemistry &Statistics
14. Chemistry, Mathematics &Statistics.
15. Chemistry, Zoology &Anthropology.
16. Chemistry, Botany &Anthropology.
17. Chemistry, Geology &Anthropology.
18. Chemistry, Mathematics &Statistics.
19. Chemistry, Anthropology & Defense Studies.
20. Geology, Mathematics &Statistics.
21. Mathematics, Defense Studies &Statistics
22. Anthropology, Mathematics &Statistics
23. Chemistry, Anthropology & Applied Statistics
24. Zoology, Botany &Anthropology
25. Physics, Mathematics &Electronics.
26. Physics, Mathematics & Computer Application
27. Chemistry, Mathematics & Computer Application
28. Chemistry, Bio-Chemistry &Pharmacy
29. Chemistry, Zoology &Fisheries.
30. Chemistry, Zoology &Agriculture
31. Chemistry, Zoology &Sericulture
32. Chemistry, Botany & Environmental Biology
33. Chemistry, Botany &Microbiology
34. Chemistry, Zoology &Microbiology
35. Chemistry, Industrial Chemistry &Mathematics
36. Chemistry, Industrial Chemistry &Zoology
37. Chemistry, Biochemistry, Botany
38. Chemistry, Biochemistry, Zoology
39. Chemistry, Biochemistry, Microbiology
40. Chemistry, Biotechnology, Botany
41. Chemistry, Biotechnology, Zoology
42. Geology, Chemistry &Geography
43. Geology, Mathematics &Geography
44. Mathematics, Physics &Geography
45. Chemistry, Botany &Geography

(iii) Practical in case prescribed for core subjects.

7. Any candidate who has passed the B.Sc. examination of the University shall be allowed to present himself for examination in any of the additional subjects prescribed for the B.Sc. examination and not taken by him at the degree examination. Such candidate will have to first appear and pass the B.Sc. Part-I examination in the subjects which he proposes to offer and then the B.Sc. Part-II and Part-III examination in the same subject. Successful candidates will be given a certificate to that effect.

8. In order to pass at any part of the three year degree course examination an examinee must obtain not less than 33% of the total marks in each subject/ group of subjects. In subject/ group of subjects where both theory and practical examination are provided an examinee must pass in both theory and practical parts of the examination separately.

9. Candidate will have to pass separately at the Part-I, Part-II and Part-III examinations. No division shall be assigned on the result of the Part-I and Part-II examination. In determining the division of the final examination, total marks obtained by the examinees in their Part-I, Part-II and Part-III examination in the aggregate shall be taken in to account. Provided in case of candidate who has passed the examination through supplementary examination having failed in one subject/ group only, the total aggregate marks being carried over for determining the division shall include actual marks obtained in the subject/ group in which he appeared at the supplementary examination.

10. Successful examinee at the Part-III examination obtaining 60% or more marks shall be places in the First Division, those obtaining less than 60% but not less than 45% marks in the Second Division and other successful examinees in the Third Division.

SCHEME OF EXAMINATION

Subject	Paper	Max. Mark	Total Marks	Min. Marks
Environmental Studies		**75**	**100**	**33**
Field Work		**25**		
Foundation Course				
Hindi Language	I	75	75	26
English Language	I	75	75	26

नोट– प्रत्येक खंड में से 2 दो प्रश्न हल करने होंगे। सभी प्रश्नपत्र समान अंक के होगें।

Three Elective Subject:

1.	Physics	I	50		
		II	50	100	33
		Practical		50	17
2.	Chemistry	I	33		
		II	33	100	33
		III	34		
		Practical		50	17
3.	Mathematics	I	50		
		II	50	150	50
		III	50		
4.	Botany	I	50		
		II	50	100	33
		Practical		50	17
5.	Zoology	I	50		
		II	50	100	33
		Practical		50	17
6.	Geology	I	50		

	II	50	100	33
	Practical		50	17
7. Statistics	I	50		
	II	50	100	33
	Practical		50	17
8. Anthropology	I	50		
	II	50	100	33
	Practical		50	17

Subject	Paper	Max. Marks	Total Marks	Min. Marks
9. Defense Studies	I	50		
	II	50	100	33
	Practical		50	17
10. Micro Biology	I	50		
	II	50	100	33
	Practical		50	17
11. Computer Science	I	50		
	II	50	100	33
	Practical		50	17
12. Information Technology	I	50		
	II	50	100	33
	Practical		50	17
13. Industrial Chemistry	I	34		
	I	33	100	33
	II	33		
	Practical		50	17
14. Bio Chemistry	I	50		
	II	50	100	33
	Practical		50	17
15. Bio Technology	I	50		
	II	50	100	33
	Practical		50	17

USE OF CALCULATORS

The Students of Degree/P.G. Classes will be permitted to use of Calculators in the examination hall from annual 1986 examination on the following conditions as per decision of the standing committee of the Academic Council at its meeting held on 31-1-1986.

1. Student will bring their own Calculators.
2. Calculators will not be provided either by the University or examination centres.
3. Calculators with, memory and following variables be permitted +, –, x, , square, reciprocal, exponentials log, square root, trigonometric functions, wize, sine, cosine, tangent etc. factorial summation, xy, yx and in the light of objective approval of merits and demerits of the viva only will be allowed.

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Part - I

SYLLABUS FORENVIRONMENTAL STUDIES AND HUMAN RIGHTS
(Paper code-0828)

MM. 75

इन्वायरमेंटल साईंसेस के पाठ्यक्रम को स्नातक स्तर भाग–एक की कक्षाओं में विश्वविद्यालय अनुदान आयोग के निर्देशानुसार अनिवार्य रूप से शिक्षा सत्र 2003–2004 (परीक्षा 2004) से प्रभावशील किया गया है। स्वशासी महाविद्यालयों द्वारा भी अनिवार्य रूप से अंगीकृत किया जाएगा।

भाग 1, 2 एवं 3 में से किसी भी वर्ष में पर्यावरण प्रश्न–पत्र उत्तीर्ण करना अनिवार्य है। तभी उपाधि प्रदाय योग्य होगी।

पाठ्यक्रम 100 अंकों का होगा, जिसमें से 75 अंक सैद्धांतिक प्रश्नों पर होंगे एवं 25 अंक क्षेत्रीय कार्य (Field Work) पर्यावरण पर होंगे।

सैद्धांतिक प्रश्नों पर अंक – 75 (सभी प्रश्न इकाई आधार पर रहेंगे जिसमें विकल्प रहेगा)

(अ) लघु प्रश्नोंत्तर – 25 अंक
(ब) निबंधात्मक – 50 अंक

Field Work- 25 अंकों का मूल्यांकन आंतरिक मूल्यांकन पद्धति से कर विश्वविद्यालय को प्रेषित किया जावेगा। अभिलेखों की प्रायोगिक उत्तर पुस्तिकाओं केसमान संबंधित महाविद्यालयों द्वारा सुरक्षित रखेंगे।

उपरोक्त पाठ्यक्रम से संबंधित परीक्षा का आयोजन वार्षिक परीक्षा केसाथ किया जाएगा।पर्यावरण विज्ञान विषय अनिवार्य विषय है, जिसमें अनुत्तीर्ण होने पर स्नातक स्तर भाग–एक के छात्र/छात्राओं को एक अन्य विषय के साथ पूरक की पात्रता होगी। पर्यावरण विज्ञान के सैद्धांतिक एवं फील्ड वर्क के संयुक्त रूप से 33ः (तैंतीस प्रतिशत) अंक उत्तीर्ण होने के लिए अनिवार्य होंगे।

स्नातक स्तर भाग–एक के समस्त नियमित/भूतपूर्व/अमहाविद्यालयीन छात्र/छात्राओं को अपना फील्ड वर्क सैद्धांतिक परीक्षा की समाप्ति के पश्चात् 10 (दस) दिनों के भीतर संबंधित महाविद्यालय/परीक्षा केन्द्र में जमा करेंगे एवं महाविद्यालय के प्राचार्य/केन्द्र अधिक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे।

UNIT-I THE MULTI DISCIPLINARY NATUREOF ENVIRONMENTALSTUDIES

Definition, Scope and

Importance Natural Resources:

Renewable and Nonrenewable Resources

(a) Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forests and tribal people and relevant forest Act.

(b) Water resources: Use and over-utilization of surface and ground water, floods drought, conflicts over water, dams benefits and problems and relevant Act.

(c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.

(d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging ,salinity.

(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.

(f) Land resources: Land as a resource, land degradation, man induced landslides soil erosion and desertification.

(12 Lecture)

UNIT-II ECOSYSTEM

(a) Concept, Structure and Function of and ecosystem

- Producers, consumers and decomposers.
- Energy flow in thee co system
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem.

(b) Biodiversity and its Conservation

- Introduction - Definition: genetic. species and ecosystem diversity
- Bio-geographical classification of India.
- Value of biodiversity: Consumptive use. Productive use, social ethics, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as mega-diversity nation.

- Hot spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict.
- Endangered and endemic species of India.
- Conservation of biodiversity: In situ and Ex-situ conservation of biodiversity.

(12Lecture)

UNIT- III

(a) Causes, effect and control measures of

- Air water, soil, marine, noise, nuclear pollution and Human population.
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Disaster Management: floods, earthquake, cyclone and landslides.

(12Lecture)

(b) Environmental Management

- From Unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, water shed management.
- Resettlement and rehabilitation of people, its problems and concerns.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.
- Wasteland reclamation
- Environment protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and Human Health.

UNIT- IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights.

Protection of Human Rights under the UNO Charter, protection of Human Rights under the Universal Declaration of Human Rights, 1948.

Convention on the Elimination of all forms of Discrimination against women.

Convention on the Rights of the Child, 1989.

UNIT-V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution ofIndia, Directive Principles of State policy under the Constitution of India, Enforcement of Human Rights in India.

Protection of Human Rights under the Human Rights Act, 1993- National Human Rights Commission, State Human Rights Commission and Human Rights court in India.

Fundamental Duties under the Constitution of India.

Reference/ Books Recommended

1. SK Kapoor- Human rights under International Law and IndianLaw.
2. HO Agrawal- Internation Law and HumanRights
3. एस.के. कपूर —मानव अधिकार
4. जे.एन. पान्डेय — भारत का संविधान
5. एम.डी. चतुर्वेदी —भारत का संविधान
6. J.N.Pandey - Constitutional Law ofIndia
7. Agarwal K.C. 2001 Environmental Biology, Nidi pub. Ltd.Bikaner
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17. Jadhav H. & Bhosale, V.H. 1995 Environmental Protection and Law. Himalayapub. House, Delhi284p
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20. Miller T.G.Jr. Environment Science, Wadsworth publication co.(TB)
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22. Rao M.N. & Datta, A.K. 1987, Waste water treatment. Oxford & IBH pub.co.pvt.Ltd 345p
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25. Townsend C. Harper J. And Michael Begon, Essentials of Ecology, Blackwell Science(TB)
26. Trivedi R.K.Handbook of Environment Laws, Rules, Guidlines, Compliancesand Standards, Vol land II, EnvironmentMedia(R)
27. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science publication (TB)
28. Wanger K.D.1998, Environmental Management. W.B. Saunders Co. Philadelphia,USA 499p

Part - I
SYLLABUS FOR ENVIRONMENTAL STUDIES AND HUMAN RIGHTS
(Paper code-0828)

MM. 75

इन्वारमेंटल साईंसेस के पाठ्यक्रम को स्नातक स्तर भाग–एक की कक्षाओं में विश्वविद्यालय अनुदान आयोग के निर्देशानुसार अनिवार्य रूप से शिक्षा सत्र 2003–2004 (परीक्षा 2004) से प्रभावशील किया गया है। स्वशासी महाविद्यालयों द्वारा भी अनिवार्य रूप से अंगीकृत किया जाएगा।

भाग 1, 2 एवं 3 में से किसी भी वर्ष में पर्यावरण प्रश्न–पत्र उत्तीर्ण करना अनिवार्य है। तभी उपाधि प्रदाय योग्य होगी।

पाठ्यक्रम 100 अंकों का होगा, जिसमें से 75 अंक सैद्धांतिक प्रश्नों पर होंगे एवं 25 अंक क्षेत्रीय कार्य (Field Work) पर्यावरण पर होंगे।

सैद्धांतिक प्रश्नों पर अंक – 75 (सभी प्रश्न इकाई आधार पर रहेंगे जिसमें विकल्प रहेगा)

(अ) लघु प्रश्नोंत्तर – 25 अंक
(ब) निबंधात्मक – 50 अंक

Field Work – 25 अंकों का मूल्यांकन आंतरिक मूल्यांकन पद्धति से कर विश्वविद्यालय को प्रेषित किया जावेगा। अभिलेखों की प्रायोगिक उत्तर पुस्तिकाओं के समान संबंधित महाविद्यालयों द्वारा सुरक्षित रखेंगे।

उपरोक्त पाठ्यक्रम से संबंधित परीक्षा का आयोजन वार्षिक परीक्षा के साथ किया जाएगा।

पर्यावरण विज्ञान विषय अनिवार्य विषय है, जिसमें अनुत्तीर्ण होने पर स्नातक स्तर भाग–एक के छात्र/छात्राओं को एक अन्य विषय के साथ पूरक की पात्रता होगी। पर्यावरण विज्ञान के सैद्धांतिक एवं फील्ड वर्क के संयुक्त रूप से 33ः (तैंतीस प्रतिशत) अंक उत्तीर्ण होने के लिए अनिवार्य होंगे।

स्नातक स्तर भाग–एक के समस्त नियमित/भूतपूर्व/अमहाविद्यालयीन छात्र/छात्राओं को अपना फील्ड वर्क सैद्धांतिक परीक्षा की समाप्ति के पश्चात् 10 (दस) दिनों के भीतर संबंधित महाविद्यालय/परीक्षा केन्द्र में जमा करेंगे एवं महाविद्यालय के प्राचार्य/केन्द्र अधिक्षक, परीक्षकों की नियुक्ति के लिए अधिकृत रहेंगे तथा फील्ड वर्क जमा होने के सात दिनों के भीतर प्राप्त अंक विश्वविद्यालय को भेजेंगे।

UNIT-I THE MULTI DISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, Scope and

Importance Natural Resources:

Renewable and Nonrenewable Resources

(a) Forest resources: Use and over-exploitation, deforestation, Timber extraction, mining, dams and their effects on forests and tribal people and relevant forest Act.

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(e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.

(f) Land resources: Land as a resource, land degradation, man induced landslides soil erosion and desertification.

(12 Lecture)

UNIT-II ECOSYSTEM

(a) Concept, Structure and Function of and ecosystem

- Producers, consumers and decomposers.
- Energy flow in the ecosystem
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- Introduction, Types, Characteristics Features, Structure and Function of Forest, Grass, Desert and Aquatic Ecosystem.

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- Introduction - Definition: genetic. species and ecosystem diversity
- Bio-geographical classification of India.
- Value of biodiversity: Consumptive use. Productive use, social ethics, aesthetic and option values.
- Biodiversity at global, National and local levels.
- India as mega-diversity nation.

- Hot spots of biodiversity.
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wild life conflict.
- Endangered and endemic species of India.
- Conservation of biodiversity: In situ and Ex-situ conservation of biodiversity.

(12 Lecture)

UNIT- III

(a) Causes, effect and control measures of

- Air water, soil, marine, noise, nuclear pollution and Human population.
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Disaster Management: floods, earthquake, cyclone and landslides.

(12 Lecture)

(b) Environmental Management

- From Unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people, its problems and concerns.
- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.
- Wasteland reclamation
- Environment protection Act: Issues involved in enforcement of environmental legislation.
- Role of Information Technology in Environment and Human Health.

UNIT- IV

General background and historical perspective- Historical development and concept of Human Rights, Meaning and definition of Human Rights, Kind and Classification of Human Rights. Protection of Human Rights under the UNO Charter, protection of Human Rights under the Universal Declaration of Human Rights, 1948. Convention on the Elimination of all forms of Discrimination against women. Convention on the Rights of the Child, 1989.

UNIT- V

Impact of Human Rights norms in India, Human Rights under the Constitution of India, Fundamental Rights under the Constitution of India, Directive Principles of State policy under the Constitution of India, Enforcement of Human Rights in India. Protection of Human Rights under the Human Rights Act, 1993- National Human Rights Commission, State Human Rights Commission and Human Rights court in India. Fundamental Duties under the Constitution of India.

Reference/ Books Recommended

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5. एम.डी. चतुर्वेदी –भारत का संविधान
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27. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science publication (TB)
28. Wanger K.D.1998, Environmental Management. W.B. Saunders Co. Philadelphia, USA 499

बी.ए./ बी.एस-सी./ बी.कॉम./ बी.एच.एस.सी. भाग -एक

(आधार पाठ्यक्रम)

प्रथम प्रश्नपत्र

हिंदी भाषा

कोड....

पूर्णांक 75

क्रेडिट 05

पाठ्यक्रमका उद्देश्य:-

1.हिंदी भाषाके प्रयोजनात्मक स्वरूप का सामान्य ज्ञान प्रदान करना।
2.कंप्यूटर में हिंदी भाषा के प्रयोग की आवश्यकता के अनुरूप कंप्यूटर की कार्य प्रणाली की आरंभिक जानकारी से अवगत होने के लिए प्रेरित करना।
3.हिंदी व्याकरण की बुनियादी ज्ञान संप्रेषण कौशल तथा भाषायी दक्षता से अवगत कराना।
4.साहित्य और समाज को समझने की दिशा में रुझान उत्पन्न करना।

पाठ्य विषय:-

इकाई 1. (क) पल्लवन, पत्राचार, अनुवाद (ख) एक टोकरी भर मिट्टी : माधवराव सप्रे बड़े भाई साहब : प्रेमचंद	अंक 15 18 कालखंड
इकाई 2. (क) संक्षेपण, हिंदी में संक्षिप्तिकरण, हिंदी-अपठित गद्यांश, पारिभाषिक शब्दावली, हिंदी में पदनाम, मुहावरे एवंलोकोक्तियाँ (ख) जागो फिर एक बार: सूर्यकांत त्रिपाठी 'निराला' जन्मदिन ('मिट्टी से कहूँगाधन्यवाद' संग्रह से):एकांत श्रीवास्तव	अंक 15 18 कालखंड
इकाई 3. (क) शब्द-शुद्धि, वाक्य-शुद्धि, शब्द-ज्ञान- पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी-शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द (ख) भोलाराम का जीव : हरिशंकर परसाई जीप पर सवार इल्लियां: शरद जोशी	अंक 15 18 कालखंड
इकाई 4.(क) मानक भाषा का अर्थ, मानक हिंदी भाषाका अर्थ, स्वरूप,	अंक 15

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विशेषताएँ, मानक, उपमानक, अमानक-भाषा (ख)शिकागो से स्वामी विवेकानंद का पत्र सत्य और अहिंसा : महात्मा गांधी	18 कालखंड
इकाई 5. (क) देवनागरी लिपि- नामकरण, स्वरूप, विशेषताएँ, कंप्यूटर का सामान्य परिचय, कंप्यूटर में हिंदी का अनुप्रयोग। (ख)कछुआ-धरम : चन्द्रधर शर्मा 'गुलेरी' छत्तीसगढ़ का वैभव: हीरालाल शुक्ल	अंक 15 18 कालखंड

मूल्यांकन योजना:-

प्रत्येक इकाई से एक-एक प्रश्न पूछे जाएंगे। एक प्रश्न के 15 अंक होंगे। प्रत्येक प्रश्न में आंतरिक विकल्प होगा। प्रत्येक प्रश्न के दो भाग 'क' और 'ख' होंगे एवं अंक क्रमश:08 एवं 07 होंगे। प्रश्नपत्र का पूर्णांक75 निर्धारित है।

प्रश्नपत्रकेपूर्णांककादसप्रतिशतअंकआंतरिकमूल्यांकनकेलिएनिर्धारितहै।

पाठ्यक्रम अधिगम परिणाम:-

इस पाठ्यक्रम को पूर्ण करने के पश्चात विद्यार्थी:-

1.हिंदी प्रयोजनात्मक तथा कार्यशील भाषा के प्रति सजग होंगे।

2.भाषा संबंधी संभावित अशुद्धियों एवं उनके परिष्कारसे परिचित होंगे तथा मानक भाषा का व्यवहार करने में सक्षम होंगे।

3.विद्यार्थियों के शब्द भंडार में वृद्धि होगी।

4.हिंदी साहित्य के पठन-पाठन के प्रति रुचि जागृत होगी एवं सामाजिक महत्व के विविध आयामों को समझने की दृष्टि विकसित होगी।

पाठ्यक्रम निर्माण का औचित्य:-

23/2/23

23.2.23

23/2/23

23.2.2023

BA/B.Sc./B.Com/B.Sc. Home.Sc. (Part-I)
Foundation Course Paper-II English Language

Max. Marks:75
Total credits: 05

Qualifying Marks:26

Paper-II	Mark's	Period's	Credit
Unit-I **Flamingo : A Textbook for college students** **Publication : Macmillan Publishers**	3x5=15	18	01
Unit -II • Writing Skill • Describing a place or a person. • Writing a Biographical Sketch • Narrating an event or experience	1x10=10	18	01
Unit -III Reading Comprehension • (a) Unseen Passage (Normal) • (b) Vocabulary (Text-based)	1x5=05 1xl0=10	18	01
Unit -IV Letter Writing (a) Formal Letters (Business Letters/ Application/Press/ Official Letters) (b) Informal Letters (Relatives and friends)	1x5=5 1x5=5	09	0.5
Unit-V Grammar • Articles • Gerunds /Participles • Subject Verb Agreement • Use of Conjunctions • Tenses • Relatives • Possessives & self forms • Grammatical items given in Textbook 'Flaminso'	1x25=25	27	1.5
Total	75	90	05
Recommended Books- 1. Essential English Grammar, 2nd Edition by Raymond Murphy, Cambridge Publication 2. English Grammar in use 5th edition by Raymond Murphy, Cambridge Publication. 3. Advanced English Grammar by Martine Hewings Cambridge University Press.			

11/07/2023
(P.C. Choudhury)

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.**	Year: **First**	Session: **2022-2023**
1	Course Code	**PHY – 1T**		
2	Course Title	**MECHANICS**		
3	Course Type	**Theory**		
4	Pre-requisite (if any)	No		
5	Course Learning Outcomes (CLO)	**After completion of the course students will be able to:** • Get knowledge about the vectors and differential equations used in physics. • Get an idea of different types of motions and conservation laws. • Get an idea about rotational motion and various properties of matter like elasticity and viscosity. • Understand various types of oscillatory motion and GPS system. • Get an idea about Frame of reference and special theory of relativity. • Solve numerical problems based on entire syllabus.		
6	**Credit Value**	**Theory : 4**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course		
Total Periods: 60		
Unit	**Topic**	**Number of Periods**
I	**Vectors**: Vector algebra, Derivatives of a vector with respect to a parameter, Scalar and vector products of two, three and four vectors, Gradient, divergence and curl of vectors fields, Polar and Axial vectors. **Ordinary Differential Equations:** 1st order homogeneous differential equations, exact and non-exact differential equations, 2nd order homogeneous and nonhomogeneous differential equations with constant coefficients (Operator Method Only).	12
II	**Laws of Motion:** Review of Newton's Laws of motion. Dynamics of a system of particles, Concept of Centre of Mass, determination of center of mass for discrete and continuous systems having cylindrical and spherical symmetry. **Work and Energy:** Motion of rocket, Work-Energy theorem for conservative forces, Force as a gradient of Potential Energy, Conservation of momentum	12

	and energy, Elastic and in-elastic Collisions.	
III	**Rotational Dynamics:** Angular velocity, Angular momentum, Torque, Conservation of angular momentum, Moment of Inertia, Theorem of parallel and perpendicular axes (statements only), Calculation of Moment of Inertia of discrete and continuous objects (rod, disc, cylinder, solid sphere). **Elasticity:** Hooke's Law – Stress – strain diagram – Elastic moduli – Relation between elastic constants – Poisson's Ratio – Expression for Poisson's Ratio in terms of Elastic Constants – Work done in stretching and work done in twisting a wire – Twisting couple on a cylinder – Determination of Rigidity modules, Elementary idea of Surface tension and Viscosity, flow of fluids, coefficient of viscosity, Stoke's law, expression for terminal velocity, wetting.	12
IV	**Gravitation:** Newton's Law of Gravitation, Motion of a particle in a central force field (motion is in a plane, angular momentum is conserved, areal velocity is constant), Kepler's Laws (statements only), Satellite in circular orbit and applications, Geosynchronous orbits. **Oscillations:** Simple harmonic motion, Differential equation of SHM and its solutions, Kinetic and Potential Energy, Total Energy and their time averages, Compound pendulum, Differential equations of damped oscillations and forced oscillations (Conceptual only).	12
V	**Special Theory of Relativity:** Frame of reference, Galilean Transformations, Inertial and Non-inertial frames, Outcomes of Michelson Morley's Experiment, Postulates of Special Theory of Relativity, Length contraction, Time dilation, Relativistic transformation of velocity, Relativistic variation of mass, Mass-energy equivalence, Transformation of Energy and Momentum.	12

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Reference Books:

1. University Physics. FW Sears, MW Zemansky & HD Young 13/e, 1986.AddisonWesley
2. Mechanics Berkeley Physics course, v.1:Charles Kittel, et.al. 2007, Tata McGrawHill
3. Physics – Resnick, Halliday & Walker 9/e, 2010, Wiley
4. Engineering Mechanics, Basudeb Bhattacharya, 2nd edn., 2015, Oxford University Press
5. University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.

Link for e-Books for Physics:

1. *All e-books of physics* https://www.e-booksdirectory.com/listing.php?category=2
2. *Free physics text book in PDF* https://www.motionmountain.net/?gclid=CjwKCAjwmq3kBRB_EiwAjkNDp5v8Yy6xK1s0

Kma0VR0AWGlichRwFfCC0-vpZK1jrPoEOAnBq8fcqRoCILsQAvD_BwE

3. *Cambridge University Books for Physics https://www.cambridgeindia.org/*
4. *Books for solving physics problems https://bookboon.com/en/physics-ebooks*

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 50
Min Marks : 17
Continuous Comprehensive Evaluation (CCE): As per University Guideline
University Exam(UE): 50 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	As per University Guideline

DECLARATION

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Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.**	Year: **First**	Session: **2022-2023**
1	Course Code	**PHY – 2T**		
2	Course Title	**ELECTRICITY AND MAGNETISM**		
3	Course Type	**Theory**		
4	Pre-requisite (if any)	No		
5	Course Learning Outcomes (CLO)	**After completion of the course students will be able to –** • Get knowledge about the vectors analysis and able to apply in electrostatic and Magnetostatics. • Get idea about electric fields, force and potential. • Get idea about Dielectric and Electric currents and also the application in AC circuits. • Get idea about Magnetic properties of material. • To get idea about Electromagnetic Induction and Maxwell's equation and Electromagnetic wave propagation. • Solve numerical problems based on entire syllabus.		
6	**Credit Value**	**Theory : 4**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course		
Total Periods: 60		
Unit	Topic	Number of Periods
I	**Vector Analysis**: Vector Integration, Line, surface and volume integrals of Vector fields, Gauss-divergence theorem and Stoke's theorem of vectors and its application in electrostatics and magnetostatics.	12
II	**Electrostatics:** Electrostatic Field, electric flux, Gauss's theorem of electrostatics, Applications of Gauss theorem- Electric field due to point charge, infinite line of charge, uniformly charged spherical shell and solid sphere, plane charged sheet, charged conductor. Electric potential as line integral of electric field, potential due to a point charge, electric dipole, uniformly charged spherical shell and solid sphere, Calculation of electric field from potential, Capacitance of an isolated spherical conductor, Parallel plate, spherical and cylindrical condenser, Energy per unit volume in electrostatic field.	12

III	**Dielectric & Electric Currents:** Dielectric medium, Polarisation, Displacement vector, Gauss's theorem in dielectrics, Parallel plate capacitor completely filled with dielectric. Steady current, current density J, non – steady current an ontinuity equation, Kirchoff's law (statement only), Ideal constant – voltage and constant – current sources, Thevenin theorem, Norton theorem, Superposition theorem, Reciprocity theorem and maximum power transfer theorem, Rise and decay of current in LR, CR, LCR circuits.	12
IV	**Magnetism:** Magnetostatics: Biot-Savart's law and its applications- straight conductor, circular coil, solenoid carrying current, Divergence and curl of magnetic field, Magnetic vector potential, Ampere's circuital law, Magnetic properties of materials: Magnetic intensity, magnetic induction, permeability, magnetic susceptibility, Brief introduction of dia, para and ferro-magnetic materials.	12
V	**Electromagnetic Induction:** Faraday's laws of electromagnetic induction, Lenz's law, self and mutual inductance, L of single coil, M of two coils, Energy stored in magnetic field. **Maxwell`s equations and Electromagnetic wave propagation:** Equation of continuity of current, Displacement current, Maxwell's equations, Wave equation in free space.	12

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Reference Books:

1. Vector analysis – Schaum's Outline, M.R. Spiegel, S. Lipschutz, D. Spellman, 2nd Edn., 2009, McGraw- Hill Education.
2. Electricity and Magnetism, Edward M. Purcell, 1986, McGraw-Hill Education.
3. Electricity & Magnetism, J.H. Fewkes & J.Yarwood. Vol. I, 1991, Oxford Univ. Press
4. Electricity and Magnetism, D C Tayal, 1988, Himalaya Publishing House.
5. University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.
6. D.J.Griffiths, Introduction to Electrodynamics, 3rd Edn, 1998, Benjamin Cummings.

Link for e-Books for Physics:

1. *All e-books of physics* https://www.e-booksdirectory.com/listing.php?category=2
2. *Free physics text book in PDF* https://www.motionmountain.net/?gclid=CjwKCAjwmq3kBRB_EiwAjkNDp5v8Yy6xK1s0Kma0VR0AWGlichRwFfCC0-vpZK1jrPoEOAnBq8fcqRoCILsQAvD_BwE
3. *Cambridge University Books for Physics* https://www.cambridgeindia.org/
4. *Books for solving physics problems* https://bookboon.com/en/physics-ebooks

Part D: **Assessment and Evaluation**		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Min Marks: 17 Continuous Comprehensive Evaluation (CCE): As per University Guideline University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	As per University Guideline

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Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.**	Year: **First**	Session: **2022-2023**
1	Course Code	**PHY 1P**		
2	Course Title	**LAB 1: Mechanics, Electricity and Magnetism**		
3	Course Type	**Practical**		
4	Pre-requisite (if any)	NO		
5	Course Learning Outcomes (CLO)	**Expected Outcomes:** • To get knowledge about the use of various measuring instruments. • To get understanding about the simple harmonic motion, elasticity, surface tension and viscosity. • Students will be able to understand applications of basic principle of Electricity and Magnetism theory in real world.		
6	**Credit Value**	**Practical : 2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
	Total Lectures: 30
Tentative Practical List	At least 14 experiments from the following: 1. Measurements of length (or diameter) using vernier caliper, screw gauge and travelling microscope. 2. To study the random error in observations.

	3. To study the motion of the spring and calculate (a) Spring constant and, (b) g. 4. To determine the Moment of Inertia of a Flywheel. 5. To determine g and velocity for a freely falling body using Digital Timing Technique. 6. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). 7. To determine the Young's Modulus of a Wire by Optical Lever Method. 8. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 9. To determine the elastic constants of a wire by Searle's method. 10. To determine the value of g using Bar Pendulum. 11.To determine the value of g using Kater's Pendulum. 12. To use a Multimeter for measuring (a) Resistances, (b) AC and DC Voltages, (c)DC Current, and (d) checking electrical fuses. 13. To compare capacitances using De'Sauty's bridge. 14. Measurement of field strength B and its variation in a Solenoid (DeterminedB/dx). 15. To study the Characteristics of a Series RC Circuit. 16.To study the ı series LCR circuit and determine its (a) Resonant Frequency, (b)Quality Factor. 17. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor Q. 18. To determine a Low Resistance by Carey Foster's Bridge. 19. To verify the Thevenin and Norton theorem. 20. To verify the Superposition, and Maximum Power Transfer Theorem.

Part C - Learning Resource
Text Books, Reference Books, Other Resources
Reference Books: 1. Advanced Practical Physics for students, B.L.Flint & H.T.Worsnop, 1971, Asia Publishing House. 2. Engineering Practical Physics, S.Panigrahi & B.Mallick,2015, Cengage Learning India Pvt. Ltd. 3. A Text Book of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi. **Link for e-Books for Physics:**

Physics Practical: https://www.uou.ac.in/sites//default/files/slm/BSCPH-104.pdf		
Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): As per University Guideline University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	As per University Guideline

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Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-23**
1.	Course Code	CHEM-1T		
2.	Course Title	Inorganic and Physical Chemistry		
3.	Course Type	Theory		
4.	Pre-requisite (if any)	To Study this course our students must have had the subject chemistry in class +2 or equivalent		
5.	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to learn the following aspects of Chemistry • To learn basic concept of atomic structure and the periodic properties of elements • To understand chemical bonding in ionic and covalent compounds • To study group trends for *s* and *p*-block elements in the periodic table • learn properties and bonding of compounds of the noble gases • Understand the metallurgical extraction of metals. • Basic concepts of Mathematics and Computer for Chemists. • Basics and mechanism of chemical kinetics and catalysis.		
6.	Credit Value	Theory: **4**		
7.	Total Marks	**Max. Marks: 50**	**Min. Passing Marks: 17**	

Part B: Content of the Course		
Total No. of Lecturers: **90**		
Unit	**Topics**	**No. of Lectures**
I	**Atomic structure :** Bohr's theory and its limitation, General idea of de-Broglie matter-waves, Heisenberg uncertainty principle, Schrödinger wave equation, significance of Ψ and Ψ^2, radial & angular wave functions and probability distribution curves, quantum numbers, Atomicorbital and shapes of *s*, *p*, *d* orbitals, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements. **Periodic properties:** Detailed discussion of the following periodic properties of the elements, with reference to *s*- and *p*- block. Trends in periodic table and applications in predicting and explaining the chemical behavior. a. Atomic and ionic radii, b. Ionization enthalpy, c. Electron gain enthalpy, d. Electronegativity, Pauling's, Mulliken's, Allred Rochow's scales. Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table.	**15**
II	**Chemical bonding- I: Ionic bond:** Ionic Solids - Ionic structures, radius ratio & co-ordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy Born-Haber cycle, Solvation energy and solubility of ionic solids, polarizing power & polarizability of ions, Fajan's rule, Ionic character in covalent compounds: Bond moment and dipole	**15**

	moment, Percentage ionic character from dipole moment and electronegativity difference, Metallic bond-free electron and band theories.	
III	**Chemical bonding-II: Covalent bond**: Valence bond theory and its limitations, Concept of hybridization, equivalent and non-equivalent hybrid orbitals. Valence shell electron pair repulsion theory (VSEPR), shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons: H_2O, NH_3, PCl_3, H_3O^+, SF_4, ClF_3, ICl_2^-, XeF_2, XeF_4, XeF_6, $XeOF_2$, $XeOF_4$, Molecular orbital theory. Bond order and bond strength, Molecular orbital diagrams of diatomic and simple heteroatomic molecules N_2, O_2, F_2, CO, NO.	**15**
IV	**Chemistry of s- & p- block elements:** General concepts on group relationships and gradation properties, Comparative study, salient features of hydrides, solvation & complexation tendencies, General concepts on group relationships and gradation properties. Halides, hydrides, oxides and oxyacids of Boron, Aluminum, Nitrogen and Phosphorus. Boranes, borazines, fullerenes, graphene and silicates, interhalogens and pseudohalogens. Chemical properties of the noble gases. **Metallurgical extraction of Fe, Al and Cu :** Principle of extraction of metal, The occurrence, extraction & isolation of Fe, Al, and Cu	**15**
V	**Mathematical concepts for chemist**: Basic Mathematical Concepts: Logarithmic relations, curve sketching, linear graphs, Properties of straight line, slope and intercept, Functions, Differentiation of functions, maxima and minima; integrals; ordinary differential equations; vectors and matrices; determinants; Permutation and combination and probability theory, Significant figures and their applications. **Computer for chemists:** Introduction to computer, introduction to operating systems like DOS, Windows, Linux **Use of computer programs:** Running up standard programs & packages such as MS –Word, MS- Excel, Power Point. Execution of linear regression x-y plot, use of software for drawing structures and molecular formulae	**15**
VI	**Chemical kinetics :** Rate of reaction, Factors influencing rate of reaction, rate law, rate constant, Order and molecularity of reactions, rate determining step, Zero, First and Second order reactions, Rate and Rate Law, methods of determining order of reaction, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non-mathematical concept of transition state theory. **Catalysis:** Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristics of catalyst, Enzyme catalyzed reactions, Micellar catalyzed reactions, Industrial applications of catalysis.	**15**
Keywords: Atomic structure, Periodic properties, ionic bonding, covalent bonding, diagonal relationship, metallurgy, computer, memory, chemical kinetics, catalysis		

Part C : Learning Resources
Text Books, Reference Books, Other Resources
Suggested Readings : 1. Lee, J. D. Concise Inorganic Chemistry, Wiley, 5th Edition, 2008. 2. Douglas, B.; McDaniel, D. and Alexander J. Concepts & Models of Inorganic 3. Chemistry, Wiley, 3rd Edition, 2006 4. Atkins, P.W. & Paula, J. Physical Chemistry, 10th Ed., Oxford University Press, 2014. 5. Puri, B. R., Sharma, L. R. and Kalia, K. C., Principles of Inorganic Chemistry, Milestone Publishers/ Vishal Publishing Co.; 33rd Edition 2016 6. Madan, R. D. Modern Inorganic Chemistry, S Chand Publishing, 1987.

7. Rodger, G.E. Inorganic and Solid State Chemistry, Cengage Learning India Edition, 2002.
8. Pfennig, B. W. Principles of Inorganic Chemistry, Wiley, 2015.
9. Housecroft, C. E. and Sharpe, A. G. Inorganic Chemistry, Pearson, 4th Edition, 2012
10. Rajarammana, V.,Computers for beginners, PHI Learniong Private Publishers, New Delhi, 2021
11. Tebbutt, P., Basic mathematics for Chemists, IInd Edn. ELBS, 1999
12. Khera, H.C., Gurtu, J.N., Singh, J., Chemistry for B.Sc. Ist Year, Pragati Prakashan
13. Bariyar, A. & Goyal, S., B.Sc. Chemistry Combined (in Hindi), Krishna Educational Publishers Year 2019
14. Puri, B.R., Pathania, M.S., Sharama, L.R., Principles of Physical Chemistry, Vishal Publishing Company 2020
15. Gurtu, J.N., Gurtu, A., Advanced Physical Chemistry, Pragati Prakashan, Meerut, Edition IV, 2017
16. Atkins' Physical Chemistry, 10th Edition, Oxford University Press, 2014
17. Barrow, G.M., Physical Chemistry Tata McGraw-Hill, 2007
18. Ball, D.W., Physical Chemistry, Thomson Press, India, 2007
19. Castellan, G.W., Physical Chemistry, 4th Edition, Narosa, 2004
20. Mortimer, R.G., Physical Chemistry, 3rd Edition, Elsevier, Noida, UP, 2009
21. Levine, I.N., Physical Chemistry, 6th Edition, Tata McGraw-Hill, 2010
22. Metz, C.R., 2000 Solved Problems in Chemistry, Sahaun Series, 2006
23. Engel, T. and Reid, P., Physical Chemistry, 3rd Edition, Prentice Hall, 2012
24. Negi, A.S. & Anand, S.C., A Text Book of Physical Chemistry, 3rd Edition, New Age International Publication
25. Bajpai, D.N., Advanced Physical Chemistry, S. Chand, 2019
26. Bahal & Tuli, Essential of Physical Chemsitry, 2020

E- Learning Resources:

1. http://heecontent.upsdc.gov.in/Home.aspx
2. https://nptel.ac.in/courses/104/106/104106096/
3. http://heecontent.upsdc.gov.in/Home.aspx
4. https://nptel.ac.in/courses/104/106/104106096/
5. https://www2.chemistry.msu.edu/faculty/reusch/VirtTxtJml/intro1.htm
6. https://nptel.ac.in/courses/104/103/104103071/#

Fundamental Chemistry related topics on SWAYAM platform and E-pathshala

Part D: Assessment and Evaluation

Maximum Marks: 50

DECLARATION

This is to certify that the syllabus is framed by the Central Board of Studies (Chemistry) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

1. Dr. Alka Shrivastav, Assistant Professor, Govt. E.V.P.G. College, Korba - Chairman
2. Smt. Priyanka Tiwari, Assistant Professor, Govt. J.P. Verma P.G. College, Bilaspur (C.G.) - Member

3. Mr. Vijay Kumar Lahare, - Member
Assistant Professor,
Govt. Lahiri P.G. College Chirimiri(C.G.)

4. Dr. Rajmani Patel, - Member
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Hemchand Yadav University, Durg (C.G.)

5. Dr. A.K. Singh, - Member
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Govt. V.Y.T. P.G. College Durg (C.G.)

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Govt. Yuganandam Chhattisgarh College Raipur(C.G.)

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Sant Shiromani Guru Ravidas Govt. College Sargaon,
Mungeli(C.G.)

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Govt. G.N.A. P.G. College Bhatapara, (C.G.)

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15. Dr. Vikesh Kumar Jha, - Member
Assistant Professor, Govt. R.R.M. P.G. College Surajpur
(C.G.)

16. Dr. Ashish Tiwari, - Member
Assistant Professor,
Dr. Bhimrao Ambedkar Govt. College Pamgarh(C.G.)

17. Mr. Laxmi Chand Manwani, - Member
Assistant Professor,
Government Vivekand PG College Manendragarh(C.G.)

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-23**
1.	Course Code	CHEM-2T		
2.	Course Title	Organic and Physical Chemistry		
3.	Course Type	Theory		
4.	Pre-requisite (if any)	To Study this course our students must have had the subject chemistry in class +2 or equivalent		
5.	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to learn the following aspects of Chemistry • Understand the fundamentals of physical organic chemistry • Stereochemistry of carbon compounds • Chemistry of Alkenes and Alkynes • Chemistry of Alicyclic and aromatic Hydrocarbons • Understanding kinetic model of gases and its properties, Behavior of real gases, its derivation from ideal behavior, equation of state, isotherms and Law of corresponding states and molecular velocities. • Fundamental concepts of liquid state and colloids & surface chemistry. • Solids, Lattice parameters – its calculation, application of symmetry, solid characteristics of simple salts.		
6.	Credit Value	Theory: **4**		
7.	Total Marks	**Max. Marks: 50**		**Min. Passing Marks: 17**

Part B: Content of the Course		
Total No. of Lecturers: **90**		
Unit	**Topics**	**No. of Lectures**
I	**Basics of organic chemistry**: Influence of hybridization on bond properties (as applicable to ethane, ethene, and ethyne). Application of inductive effect (a) Basicity of amines (b) Acidity of carboxylic acids (c) Stability of carbocations. Resonance or Mesomeric effect, application to (a) acidity of phenol, and (b) acidity of carboxylic acids. Hyper conjugation and its application to stability of carbocations, Free radicals and alkenes. Reactive intermediates: carbanions, carbenes, Nitrene, Basic concept of S_N1, S_N2, E1, E2, E1cb reactions and Neighboring group Participation (NGP). Electrophiles and Nucleophiles; Nucleophilicity and basicity.	**15**
II	**Introduction to stereochemistry:** Optical Isomerism: Optical Activity, Specific Rotation, Chirality/Asymmetry, Enantiomers, Molecules with two or more chiral-centres, Diastereoisomers, meso compounds, Relative and absolute configuration: Fischer, Newman and Sawhorse Projection formulae and their interconversions; Erythrose and threose, D/L, d/l system of nomenclature, Cahn-Ingold-Prelog system of nomenclature (C.I.P rules),	**15**

	R/S nomenclature. Geometrical isomerism: cis–trans, syn-anti and E/Z notations. Stereospecific and stereoselective synthesis. Asymmetric synthesis.	
III	**Acyclic hydrocarbons:** Alkenes - Preparation of alkenes. Properties: Addition of hydrogen - heat of hydrogenation and stability of alkenes. Addition of halogen and its mechanism. Addition of HX, Markonikov's rule, addition of H_2O, (Oxymercuration-reduction and hydroboration -oxidation), HOX, H_2SO_4 with mechanism and addition of HBr in the presence of peroxide (anti - Markonikov's addition). Dienes - Types of dienes, reactions of conjugated dienes - 1,2 and 1,4 addition of HBr to 1,3 - butadiene and Diel's - Alder reaction. Alkynes: Preparation by dehydrohalogenation of dihalides, dehalogenation of tetrahalides, Properties; Acidity of acetylenic hydrogen (formation of Metal acetylides). Preparation of higher acetylenes, Metal ammonia reductions, Physical properties. Chemical reactivity - electrophilic addition of X_2, HX, H_2O (Tautomerism), Oxidation with $KMnO_4$, OsO_4, reduction and Polymerization, reaction of acetylene.	**15**
IV	**Alicyclic hydrocarbons (cycloalkanes):** Nomenclature, Preparation by Freunds method, Wislicenus method. Properties - reactivity of cyclopropane and cyclobutane by comparing with alkanes, Stability of cycloalkanes - Baeyer's strain theory, Sachse and Mohr predictions and Pitzer's strain theory. Conformational structures of cyclobutane, cyclopentane, cyclohexane. Confirmers: in substituted cyclohexane, decalins. **Aromatic hydrocarbons:** Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/ carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism. Directive effects of the groups.	**15**
V	**Gaseous state chemistry:** Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path; Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities. Joule Thomson effect, Liquification of Gases. **Behavior of real gases:** Deviations from ideal gas behavior, compressibility factor (Z), and its variation with pressure and temperature for different gases. Causes of deviation from ideal behavior. Vander Waals equation of state, its derivation and application in explaining real gas behavior, calculation of Boyle temperature. Isotherms of real gases and their comparison with Vander Waals isotherms, continuity of states, critical state, relation between critical constants and Vander Waals constants, law of corresponding states.	**15**
VI	**Liquid state chemistry**: Intermolecular forces, magnitude of intermolecular force, structure of liquids, Properties of liquids, viscosity and surface tension. **Colloids and surface chemistry:** Classification, Optical, Kinetic and Electrical Properties of colloids, Coagulation, Hardy Schulze law, flocculation value, Protection, Gold number, Emulsion, micelles and types, Gel, Syneresis and thixotropy, Application of colloids. Physical adsorption, chemisorption, adsorption isotherms (Langmuir and Freundlich). Qualitative	**15**

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	discussion of BET. **Solid state chemistry:** Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, a simple account of rotating crystal method and powder pattern method. Crystal defects.	

Keywords: Electronic effect, Reactive intermediates, Stereochemistry, Alkenes, Alkynes, Cycloalkanes, Aromaticity, Gas, Liquid, Colloidal state and Solid

Part C: Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings :

1. Morrison, R. N. & Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd.(Pearson Education).
2. Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Finar, I. L. Organic Chemistry (Volume 2: Stereochemistry and the Chemistry of Natural Products), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Eliel, E. L. &Wilen, S. H. Stereochemistry of Organic Compounds, Wiley: London, 1994.
5. Kalsi, P. S. Stereochemistry Conformation and Mechanism, New Age International, 2005.
6. McMurry, J.E. Fundamentals of Organic Chemistry, 7th Ed. Cengage Learning India Edition, 2013.
7. Bruice, P. Y. Organic Chemistry, 2nd Edition, Prentice-Hall, International Edition (1998).
8. Atkins' Physical Chemistry, 10th Edition, Oxford University Press, 2014
9. Barrow, G.M., Physical Chemistry Tata McGraw-Hill, 2007
10. Ball, D.W., Physical Chemistry, Thomson Press, India, 2007
11. Castellan, G.W., Physical Chemistry, 4th Edition, Narosa, 2004
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1. http://heecontent.upsdc.gov.in/Home.aspx
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5. https://www2.chemistry.msu.edu/faculty/reusch/VirtTxtJml/intro1.htm
6. https://nptel.ac.in/courses/104/103/104103071/#

Fundamental Chemistry related topics on SWAYAM platform and E-pathshala

Part D: Assessment and Evaluation

Maximum Marks: 50

DECLARATION

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guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

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Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-23**
1.	Course Code	CHEM-1P		
2.	Course Title	Lab. 1		
3.	Course Type	Practical		
4.	Pre-requisite (if any)	To Study this course our students must have had the subject chemistry in class +2 or equivalent		
5.	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to learn the following aspects of Chemistry • To analyse the given mixture for anions (acid radicals) and cations (basic radicals). • Titrations • Qualitative Analysis • Surface tension measurements. • Viscosity measurement • Chemical Kinetics		
6.	Credit Value	Practical: **2**		
7.	Total Marks	**Max. Marks: 50**	**Min Passing Marks: 17**	

Part B: Content of the Course		
Total No. of Lecturers: **30**		
LABATORY COURSE		**No. of Lectures**
Tentative list of Practical	**A. Inorganic chemistry** Semi-micro qualitative analysis (using H_2S or other methods) of mixtures - not more than four ionic species (two anions and two cations, excluding interfering, insoluble salts) out of the following: **Cations :** NH_4^+, Pb^{2+}, Bi^{3+}, Cu^{2+}, Cd^{2+}, Fe^{3+}, Al^{3+}, Co^{2+}, Ni^{2+}, Mn^{2+}, Zn^{2+}, Ba^{2+}, Sr^{2+}, Ca^{2+}, Na^+ **Anions :** CO_3^{2-}, S^{2-}, SO_3^{2-}, NO_2^-, CH_3COO^-, Cl^-, Br^-, I^-, NO_3^-, SO_4^{2-} (Spot tests may be carried out wherever feasible) **B. Acid-Base Titrations** • Standardization of sodium hydroxide by oxalic acid solution. • Determination of strength of HCl solution using sodium hydroxide as intermediate. • Estimation of carbonate and hydroxide present together in mixture. • Estimation of carbonate and bicarbonate present together in a mixture. • Estimation of free alkali present in different soaps/detergents	**10**

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	C. Redox Titrations • Standardization of $KMnO_4$ by oxalic acid solution. • Estimation of Fe(II) using standardized $KMnO_4$ solution. • Estimation of oxalic acid and sodium oxalate in a given mixture. •Estimation of Fe(II) with $K_2Cr_2O_7$ using internal (diphenylamine, anthranilic acid) and external indicator.	
	Organic chemistry 1. Demonstration of laboratory Glassware's and Equipments. 2. Calibration of the thermometer. 80° –82° (Naphthalene), 113.5^o – 114° (Acetanilide), 132.5^o -133° (Urea), 100° (Distilled Water).) 3. Purification of organic compounds by crystallization using different solvents. Phthalic acid from hot water (using fluted filter paper and stemless funnel). Acetanilide from boiling water. Naphthalene from ethanol. Benzoic acid from water. 4. Determination of the melting points of organic compounds. Naphthalene 80° –82° , Benzoic acid 121.5^o –122° , Urea 132.5^o –133° Succinic acid 184.5^o – 185° , Cinnamic acid 132.5^o –133° , Salicylic acid 157.5^o –158°, Acetanilide 113.5^o –114° , m-Dinitrobenzene 90° , p-Dichlorobenzene 52° , Aspirin 135° . 5. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds. Urea–Cinnamic acid mixture of various compositions (1:4, 1:1, 4:1). 6. Determination of boiling point of liquid compounds. (boiling point lower than and more than 100°C by distillation and capillary method). Ethanol 78°, Cyclohexane 81.4^o, Toluene 110.6^o, Benzene 80°. i. Distillation (Demonstration) Simple distillation of ethanol-water mixture using water condenser. Distillation of nitrobenzene and aniline using air condenser. ii. Sublimation Camphor, Naphthalene, Phthalic acid and Succinic acid. iii. Decolorisation and crystallization using charcoal. Decolorisation of brown sugar with animal charcoal using gravity filtrations crystallization and decolorisation of impure naphthalene (100 g of naphthalene mixed with 0.3 g of Congo red using 1 g of decolorizing carbon) from ethanol. 7. Qualitative Analysis Detection of elements (N, S and halogens) and functional groups (Phenolic, Carboxylic, Carbonyl, Esters, Carbohydrates, Amines, Amides, Nitro and Anilide) in simple organic compounds. 8. Preparation and characterization of biodiesel from vegetable oil. 9. Preparation of soap.	**10**
	Physical chemistry 1. Surface tension measurements. Determine the surface tension by (i) drop number (ii) drop weight method. • Surface tension composition curve for a binary liquid mixture. 2. Viscosity measurement using Ostwald's viscometer. Determination of viscosity of aqueous solutions of (i) sugar (ii) ethanol at room temperature. Study of the variation of viscosity of sucrose solution with the concentration of solute. Viscosity Composition curve for a binary liquid mixture.	**10**

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	3. Chemical Kinetics To determine the specific rate of hydrolysis of methyl/ethyl acetate catalysed by hydrogen ions at room temperature. To study the effect of acid strength on the hydrolysis of an ester. To compare the strengths of HCl & H_2SO_4 by studying the kinetics of hydrolysis of ethyl acetate. 4. Colloids To prepare colloidal solution of silver nanoparticles (reduction method) and other metal nanoparticles using capping agents.	

Keywords: Semi-micro qualitative analysis, Qualitative analysis, Titrations, Chemical Kinetics, Colloids, Viscosity, Surface tension, Decolorization and crystallization, Distillation, Sublimation, Soap, biodiesel.

Part C: Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings :

1. Mendham, J., A. I. Vogel's Quantitative Chemical Analysis 6th Ed., Pearson, 2009.
2. Ahluwalia, V. K., Dhingra, S. and Gulati, A. College practical Chemistry, University Press.
3. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009).
4. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)
5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).
6. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).
7. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York (2003).

Sidhwani, I.T., Saini, G., Chowdhury, S., Garg, D., Malovika, Garg, N. Wealth from waste: 8.A green method to produce biodiesel from waste cooking oil and generation of useful products from waste further generated "A Social Awareness Project", Delhi University Journal of Undergraduate Research and Innovation.

9.Carpenter, William Lant; Leask, Henry (1895). A treatise on the manufacture of soap and candles, lubricants and glycerin. Free ebook at Google Books.

E- Learning Resources:

1. http://heecontent.upsdc.gov.in/Home.aspx
2. https://nptel.ac.in/courses/104/106/104106096/
3. http://heecontent.upsdc.gov.in/Home.aspx
4. https://nptel.ac.in/courses/104/106/104106096/
5. https://www2.chemistry.msu.edu/faculty/reusch/VirtTxtJml/intro1.htm
6. https://nptel.ac.in/courses/104/103/104103071/#

Fundamental Chemistry related topics on SWAYAM platform and E-pathshala

Part D: Assessment and Evaluation

Maximum Marks: 50

PRACTICAL EXAMINATION B. Sc. – I	05 Hrs. M.M. 50
Three experiments are to be performed	
1. Inorganic Mixture Analysis, four radicals two basic & two acid (excluding insoluble, Interfering & combination of acid radicals) **OR** Two Titrations (Acid Bases, Redox and Iodo/Iodiometry/Complexometric titration)	**12 marks**
2. Detection of functional group in the given organic compound and determine its MPt/BPt. **OR** Crystallization of any one compound as given in the prospectus along with the determination of mixed MPt. **OR** Decolorisation of brown sugar along with sublimation of camphor/ Naphthlene.	**8 marks** **14 marks**
3. Any one physical experiment that can be completed in two hours including calculations. 4. Viva 5. Sessionals	**10 marks** **06 marks**
In case of Ex-Students two marks will be added to each of the experiments	

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   Assistant Professor,
   Govt. E.V.P.G. College, Korba
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   Assistant Professor,
   Govt. J.P. Verma P.G. College, Bilaspur
3. Mr. Vijay Kumar Lahare, - Member
   Assistant Professor,
   Govt. Lahiri P.G. College Chirimiri(C.G.)
4. Dr.Rajmani Patel, - Member
   Assistant Professor,
   Hemchand Yadav University, Durg
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7. DR. P.K. Agnihotri, - Member
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   Govt. Yuganandam Chhattisgarh College Raipur(C.G.)
8. Dr. B.D. Diwan, - Member

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Govt. M.M.R. P.G. College Champa(C.G.)

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Sant Shiromani Guru Ravidas Govt. College Sargaon,
Mungeli(C.G.)

10. Mrs. Mousami Lahare, - Member
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Govt. G.N.A. P.G. College

11. Dr. Alka Shukla, - Member
Assistant Professor,
Mohan Lal Jain(Mohan Bhaiya) Govt. College Khursipar,
Bhilai(C.G.)

12. Dr. Arti Gupta, - Member
Professor, Govt. Dr. W.W.P. Girlas P.G. College Durg (C.G.)

13. Dr. Deepti Tikariha, - Member
Assistant Professor, APSGMNS Govt. P.G. College
Kawardha(C.G.)

14. Dr. Seema Negi, - Member
Assistant Professor, Govt. J.M.P. College, Takhatpur (C.G.)

15. Dr. Vikesh Kumar Jha, - Member
Assistant Professor, Govt. R.R.M. P.G. College Surajpur
(C.G.)

16. Dr. Ashish Tiwari, - Member
Assistant Professor,
Dr. Bhimrao Ambedkar Govt. College Pamgarh(C.G.)

17. Mr. Laxmi Chand Manwani, - Member
Assistant Professor,
Government Vivekand PG College Manedragarh(C.G.)

Part A: Introduction				
Program: Certificate Course		Class: B.Sc. I st Year	Year: 2022	Session: 2022-2023
1	Course Code	ZOOL-1T		
2	Course Title	**Animal Diversity: Non-Chordata and Chordata, Comparative Anatomy and Physiology of Non-chordates**		
3	Course Type	Theory		
4	Pre-requisite (if any)	No		
5	Course Learning Outcomes (CLO)	Upon completion of the course students should be able to : • Learn about the importance of systemic,taxonomy and phylogeny to get a concrete idea of evolution of non-chordate phyla. • Understand the various morphological, anatomical structures and functions ofanimals of different phyla. • Get the knowledge about economic,ecological and medical significance ofvarious animals in human welfare. • Understand the important parasites andtheir control measures. • Comparison of the anatomy and physiology of the different taxa of non-chordates.		
6	Credit Value	4		
7	Total Marks	Max. Marks: 50	Min Passing Marks : 17	

Part B: Content of the Course		
Total Lectures: 60		
Unit	Topics	No. of Lectures
I	**Taxonomy, Protozoa, Porifera** **Taxonomy-** Elementary knowledge of Zoological Nomenclature and International Code. Classification of Animal Kingdom upto Phylum of acoelomate and coelomate non-chordates according to Parker and Haswell7th edition. **Protozoa-** Phylum Protozoa: General characters of the phylum and classification up to order with characters and suitable examples. Structure, life history and pathogenicity of malaria parasite *(Plasmodium vivax)*. Protozoa and disease. **Porifera-** Phylum Porifera: General characters of the phylum and classification up to order with characters and suitable examples. Type study of Sycon.	12
II	**Coelenterata, Platyhelminthes, Nemathelminthes :** **Coelenterata-** PhylumCoelenterata: General characters of the phylum and classification up to order with characters and suitable examples. Type Study of Obelia. **Platyhelminthes** - Phylum Platyhelminthes: General characters of the phylum and classification up to order with characters and suitable examples. Type Studyof Liverfluke. **Nemathelminthes-** PhylumNemathelminthes: General characters of the phylum and classification up to order with characters and suitable examples. Pathogenic nematodes and diseases.	12
III	**Annelida, Arthropoda, Mollusca :** **Annelida-** Phylum Annelida: General Characters of the phylum and classification up to order with characters and suitable examples. Types study of Earthworm (*Pheretima*). **Arthropoda -** Phylum Arthropoda: General Characters of the phylum and classification up to order with characters and suitable examples. Type study of Prawn. Insects as a vector of human disease. **Mollusca -** Phylum Mollusca: General characters of the phylum and classification up to order with characters and suitable examples. Type study of *Pila.*	12

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IV	**Echinodermata, Hemichordata, Classification of Chordata :** **Echinodermata** - Phylum Echinodermata: General characters of the phylum and classification up to order with characters and suitable examples. Type study of Starfish*(Asterias)*. **Hemichordata** - PhylumHemichordata: General characters of the phylum hemichordate and relationship with non-chordates and chordates. Type study ofBalanoglossus **Classification of Chordata** - Classification of Chordata up to order withcharacters andsuitable examples. Brief account of Urochordata, Cephalochordata and Vertebrata.	11
V	**Comparative Anatomy and Physiology of Non-chordates:** Coelom and coelomductsin Non- chordate. Locomotory organs and locomotion in Non- chordate. Pattern of feeding and digestion in lower Metazoans. Comparative anatomy and physiology of respiration and excretion in Non- chordate. Primitive,diffused and advance nervous system in Non- chordate. Reproduction in Non-chordates.	13
Keywords : Locomotary organ, feeding and digestion, respiration, International Comission on Zoological Nomenclature (ICZN), Classification, Protozoa, Classification, Liver Fluke, Trochophore, Arthropoda, Crustacea larva , Echinodermata larva		

Part C -Learning Resource

1. Text Books, Reference Books, Other Resources –

2. Parker, J, Haswell, WA, "A Text Book of Zoology", VII edition, Vol. I & II, Low Price Publications, Delhi, 1990.
3. Barnes, RD, "Invertebrate Zoology", VII Edition, Cengage Learning, India, 2006.
4. Pechenik, JA, "Biology of the Invertebrates" McGraw-Hill Educations, VII Edition, 2015.
5. Sedgwick, A, "A Students Text Book of Zoology", Vol.I, II & Vol. III., Low Price Publications, Delhi, 1990.
6. Dhami and Dhami, "Invertebrate Zoology" R., Chand & Co., India, 2009.
7. Jordan and Verma, "Invertebrate Zoology," S. Chand & Company, New Delhi, 2013.
8. Agarwal, VK, "Zoology for Degree Students: Non-Chordata", S Chand & Company, 2017.
9. Kotpal, R, "Modem Text Book of Invertebrates", Rastogi Publications, Meerut, 2017.
10. Kotpal, R, "Protozoa to Echinodermata (Phylum Series)", Rastogi Publications, Meerut, 2017.
11. Kardong, K.V. (2006) Vertebrates: Comparative Anatomy, Function, Evolution (4th edition), McGraw-Hill
12. Jordan, E. L. and Verma, P. S. (2013) Chordate Zoology (14th edition).
13. Saxena, R. K. and Saxena,S. (2015) Comparative Anatomy of Vertebrates (2nd edition).

E- Resources –

1. SWAYAM- .https://swayam.gov.in/explorer?searchText=
2. https://academic.oup.com
3. https://medineplus.gov
4. https://ncin.nlon.nih.gov
5. https://zoologylearningpoint.woodpress.com
6. https://zoologyresources.com
7. National digital library – https://ndl.iitkgp.ac.in
8. e-PG Pathshala (MHRD) Portal, https://egpg.inflibnet.ac.in
9. Science Direct Open Access Content – https://www.sciencedirect.com/book/9781843342038/ open – Access
10. https://egyankosh.ac.in

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31-5-2022

Part D: Assessment and Evaluation
Maximum Marks, University exam. - :50

DECLARATION

This is to certify that the syllabus is framed by the central board of study (Zoology) as the guidelines of the department of higher education, Chhattisgarh.

1. Dr. K. R. Sahu - Chairman -
   Assistant Professor, Govt. Pandit Madhav Rao Sapre Collfge, Pendra Road
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   Professor, Govt. D. B. Girls College, Raipur
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    Assistant Professor, Govt. Mahamaya College, Ratanpur, Bilaspur
11. Dr. Kavita Krishnamoorti - Member -
    Assistant Professor, Govt. Lahiri P. G. College, Chirimiri, Koriya

Date : 31.05.2022

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	ZOOL- 2T		
2	Course Title	Cell Biology, Histology and Comparative Anatomy & Physiology of Chordates		
3	Course Type	Theory		
4	Pre-requisite (if any)	To study this course, a student must have/had the subject Biology in class 12th.		
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able : • Understand the basic structure, functioning of the cell and cell organelles and understand the intricate cellular mechanisms involved. • Understand the tissues, how tissues are produced from cells in a normal course and about any malfunctioning which may lead to benign or malignant tumor. • Develop an understanding of the evolution of vertebrates thus integrating structure, function and development. • Understand the morphological, anatomical and physiological adaptation in diverse habitats. • 5. Develop an understanding of the evolution of vertebrates thus integrating structure, function and development.		
6	Credit Value	Theory : 4		
7	Total Marks	Max. Marks: 50	Min Passing Marks : 17	

Part B: **Content of the Course** Total Lecturer: 60		
Unit	Topics	No. of Lectures
I	**Prokaryotic and Eukaryotic cells :** General structure of prokaryotes, bacteria, archaea and eukaryotes. Ultra structure and function of endoplasmic reticulum, ribosomes, Golgi apparatus, lysosome, Mitochondria, nuclear apparatus. **Cell membrane and transport mechanism :** Structure, composition, models and function. Fluid mosaic model Junctional complexes, membrane receptor modifications : microvilli, desmosomes and plasmodesmata.	12
II	**Cell cycle, cell signaling and cell culturing :** Cell cycle, cell division – mitosis and meiosis. Cell division check points and their regulation. Role of growth factors. Programmed cell death (Apoptosis). **Cell regulation and cell signaling :** Signaling molecules and their receptors. Functions of cell surface receptors. Regulation of signaling pathways. **Cell culture :** Types of cell culture – monolayer and suspension culture. Types of culture media. Basic characteristics of tissue culture media. Tissue culture and engineering.	12
III	**Structure and functional significance of animal tissues :** Introduction to tissues. Epithelial tissue: types, structure and characteristics. Exocrine and endocrine glands: type and structure. Structure and function of loose, dense and adipose tissue. Muscular tissue: Ultra structure of smooth, skeletal and cardiac muscles. Muscle contraction. Membrane of the brain and spinal cord.	11
IV	**Structure and function of integument, skeletal, digestive, circulatory system :** **Integument :** Structure of integument from fish to mammals. Function of integument. Epidermal and dermal derivatives of integument and their functional significance. **Skeletal system :** Comparative account of pelvic and pectoral girdles from fishes (cartilaginous and bony) to mammals. **Digestive system :** Dentition in mammals. Comparative study of alimentary canal and digestive glands from fish to mammal. Physiology of digestion in mammal.	13

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	Circulatory system: Evolution of aortic arches and their significance. Structure and evolution of heart in vertebrates. Cardiac cycle. Blood : Composition and function.	
V	**Structure and function of circulatory, respiratory, excretory, reproductive and endocrine system :** **Respiratory system :** Aquatic and terrestrial respiration. Comparative anatomy of lungs in amphibian, reptile, bird and mammals. **Excretory system :** Physiology of excretion, urine formation. **Reproductive system :** Comparative details of testes and ovaries from fishes to mammals. Estrous and menstrual cycle. **Endocrine system :** Types and functional significance of endocrine glands and hormones.	12

Keywords: Tissue, Endocrine glands, Girdles, Cell signaling, Cell culture, Excretion, Circulatory system, Aortic arches, Heart, Reproductive cycle.

Part C - **Learning Resource**

Text Books, Reference Books, Other Resources -

1. Books of M. P. Hindi Granth Academy
2. Rastogi V. B. : Introduction to Cytology
3. Cell Biology and Molecular Biology : N. Arumugam
4. Cell Biology : N. Arumugam
5. Molecular Cell Biology : N. Arumugam
6. Cell Biology, Genetics, Molecular Biology and Evolution : Verma P. S., Agrawal V. K.
7. Sheelar and Binachi : Cell and Molecular Biology
8. Karp : Cell and Molecular Biology
9. De Robertis : Cell and Molecular Bology
10. Powar C. B. : Cell Biology
11. A Textbook of Animal Histology : A. K. Berry, Emkey Publication, Delhi
12. A Textbook of Histology and Practical guide: J. P. Gunasegram
13. Animal Cell Culture : R. Freshney
14. Animal Cell and Tissue Culture : Shivangi Mathur
15. Chordate Zoology : R. L. Kotpal & P. S. Verma
16. Modern Text Book of Zoology – Vertebrate : R. L. Kotpal
17. A Text Book of Chordates : A. Thangamani, N. Arumugam, Saras Puplication
18. Biology of Animals, Volume – II, Sinha, Adhikari, Ganguly
19. Comparative Anatomy of vertebrates, 2nd edition : R. K. Saxena, Sunita Saxena
20. Comparative Anatomy and Developmental Biology : Kotpal, Shastry and Shukla
21. Chordata and Comparative Anatomy : R. L. Kotpal
22. Chordate Zoology : Jordan E. L. and Verma P. S.
23. Anatomy of Chordates, 4th edition : Weichert C. K.
24. Comparative vertebrate Anatomy : L. H. Hyman

E-Resources –

1.SWAYAM- .https://swayam.gov.in/explorer?searchText=
2. https://academic.oup.com
3. https://medineplus.gov
4. https://ncin.nlon.nih.gov
5. https://zoologylearningpoint.woodpress.com
6. https://zoologyresources.com
7. National digital library – https://ndl.iitkgp.ac.in
7. e-PG Pathshala (MHRD) Portal, https://egpg.inflibnet.ac.in
8. Science Direct Open Access Content – https://www.sciencedirect.com/book/9781843342038/ open – Access
9. https://egyankosh.ac.in

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Part D: Assessment and Evaluation	
University Exam(UE): Maximum Marks:	50 Marks

DECLARATION

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1. Dr. K. R. Sahu - Chairman -
   Assistant Professor, Govt. Pandit Madhav Rao Sapre College, Pendra Road
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3. Dr. Prem Praksah Singh - Member - Prem Prakash Singh 31/05/2022
   Professor, Govt. College, Kusmi
4. Dr. Shubhada Rahalkar - Member - Rahalkar 31.5.22
   Professor, Govt. Bilasa Girls P. G. College, Bilaspur
5. Dr. Anil Kumar Shrivastava - Member - 31.5.22
   Professor, Govt. V. Y. T. P. G. Autonomous College, Durg
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7. Dr. Parmita Dubey - Member - 31-5-22
   Assistant Professor, Govt. J. Y. Chhattisgarh College, Raipur
8. Dr. Shashi Gupta - Member - 31.5.22
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9. Dr. L. P. Miri - Member - 31.5.22
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10. Dr. Rajesh Kumar Rai - Member - 31.05.2022
    Assistant Professor, Govt. Mahamaya College, Ratanpur, Bilaspur
11. Dr. Kavita Krishnamoorti - Member - 31.05.2022
    Assistant Professor, Govt. Lahiri P. G. College, Chirimiri, Koriya

Date : 31.05.2022

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	ZOOL-1P		
2	Course Title	Lab Course - I		
3	Course Type	Practical		
4	Pre-requisite (if any)	No		
5	Course Learning Outcomes (CLO)	After completion of practical work the outcome will be : • Able to know animal diversity in the form of museum/slide for invertebrate and invertebrates. • Capable to enumerate biology of invertebrates. • Capable to explore anatomy of animas. • Able to understand cytological, histological and osteological configuration for animal life. • Capable to explain hematology of animal system.		
6	Credit Value	2		
7	Total Marks	Max. Marks: 50	Min Passing Marks : 17	

Part B: **Content of the Course**

Total classes: 30

	Content	No. of classes
	Tentative list of practical/exercise :. The practical's work will be based on theory syllabus and the students will be required to show the knowledge of the following – 1. Study of museum specimens representing to invertebrate phyla. 2. Study of permanent slides : Paramecium, Euglena, T. S. Sycon, Sponge Spicules, Sponge gemmule, Obelia colony, Obelia medusa, Ephyra larva, Fasciola larval forms (miracidium, Radia, Cercaria, Metacercaria), Trochophore larva, Zoea larva, Bipinnaria larva. 3. Dissection/ demonstration/ clay model of – a) Phretima : Digestive system, Reproductive system, Nervous system b) Palaemon : Appendages, Nervous system c) Periplaneta : Mouth parts, Digestive system d) Pila : Nervous system 4. Exercise based on cytology : squash preparation from onion root tip and study of cell division. 5. Study of museum specimens representing the chordata from cyclostomes to mammals. 6. Study of permanent slides of chordates – Fish skin, scales, V. S. Skin of frog, reptile, bird, mammal, T.S. liver, pancreas, testes, ovary of frog and mammal. 7. Osteology : Study of girdles of amphibian, reptile, bird and mammal. 8. Temporary mounting : a) Palaemon : Statocyst b) Pila : Ctenidium, osphradium c) Pheretima : Septal nephridia d) Fish scale : Placoid, Cycloid, Ctenoid 9. Exercise based on blood : blood group, blood pressure measure 10. Field visit report : Photography & identification of any five local invertebrate or vertebrate fauna.	30

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Part C - **Learning Resource**
Text Books, Reference Books, Other Resources - 1. Practical zoology Invertebrate : S. S. Lal 2. Practical zoology vertebrate : S. S. Lal 3. A Manual of practical zoology invertebrates : P. S. Verma 4. A Manual of practical zoology Chordates : P. S. Verma 5. Saras Practical zoology Vol. I, Vol. II, N. Arumugam

Part D: **Assessment and Evaluation**
University Exam(UE): Maximum Marks: 50 Marks

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    Assistant Professor, Govt. Lahiri P. G. College, Chirimiri, Koriya

Date : 31.05.2022

Part A: Introduction				
Program: **Certificate course in Microbial Techniques and Archaegoniate identification**		Class: **B.Sc.I Year**	Year: **2022**	Session:**2022-2023**
1.	Course Code	**BOT-1T**		
2.	Course Title	**Microbial Diversity and Plant Pathology**		
3.	Course Type	**Theory**		
4.	Pre-requisite (if any)	NO		
5.	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to • Understand the Viruses, Bacteria, Phycology, Mycology and Plant pathology • Learn microbial techniques which will be beneficial for agriculture and industry. • Learn life cycles of selected genera of different groups • Understand etiology of plant diseases • Apply their knowledge in the crop fields to eradicate or avoid the diseases • Apply different biofertilizers to enhance productivity		
6.	**Credit Value**	**Theory: 4**		
7.	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks: 17**	

Part B: Content of the Course		
Total Periods: 60		
Unit	**Topics**	**No. ofPeriod**
I	**Microbial Techniques & instrumentation:** Microscopy – Light, phase contrast, scanning and transmission electron microscopy, staining techniques for light microscopy. Common equipment of microbiology lab and principle of their working – autoclave, oven, laminar air flow, centrifuge, colorimetry, spectrophotometry, electrophoresis, immobilization methods, fermentation and fermenters.	12
II	**Microbial world:** Cell structure of Eukaryotic and prokaryotic cells, Gram positive and Gram-negative bacteria, Structure of bacteria; Bacterial Growth curve, factors affecting growth of microbes; Sporulation, reproduction, recombination in bacteria. Viruses, general characteristics, Structure of viruses, Bacteriophages and TMV; Lytic and Lysogenic cycles, viroid, Prions & mycoplasma, phytoplasma, actinomycetes and their economic uses. **Applied Microbiology:** Food fermentations and food produced by microbes, Production of antibiotics, enzymes, alcoholic beverages, Lactic acid and Acetic acid production. Antigen, antibody and production of monoclonal antibodies (Hybridoma techniques).	12
III	**Phycology:** General characteristic features, classification and range of thallus organization. Classification and life cycle of –*Volvox, Oedogonium, Chara, Vaucheria,Ectocarpus* and *Polysiphonia*. Economic importance of algae - Role of algae in soil fertility, algae as biofertilizer , blue green algae and nitrogen economy of soil; algae as biofuel	12

for 13.6.22

IV	**Mycology , Mushroom Cultivation, Lichenology & Mycorrhiza:** General characteristic features, Economic importance and Classification of Fungi. Distinguishing characters of Myxomycota: General characters of Mastigomycota: *Phytophthora* and *Albugo*, Zygomycota: *Rhizopus* and *Mucor*, Ascomycota: *Saccharomyces*, *Penicillium*, *Peziza*. Basidiomycota: *Ustilago, Puccinia, Agaricus*; Deuteromycota: *Colletotrichum*, *Fusarium, Alternaria*. Heterothallism, Physiological specialization, Heterokaryosis & Parasexuality, Mushroom cultivation- Button and Oyster mushroom General account of lichens, reproduction and significance; Mycorrhiza: ectomycorrhiza and endomycorrhiza and their significance.	12
V	**Plant Pathology:** Disease concept, Symptoms, Etiology, Primary and secondary inoculum, pathogenesis, Koch's Postulates. Mechanism of infection and predisposing factors. Disease reoccurrence, Defence mechanism : physical and biochemical, Disease Resistance, Systemic fungicides,Organomercurials and sulphur containing fungicides **Diseases and Control**: Symptoms, Causal organism, Disease cycle and Control measures of – Early & Late Blight of Potato, Damping of seedlings, False Smut of Rice/ Brown spot of rice, Black Stem Rust of Wheat, Alternaria spot and White rust of Crucifers, Red Rot of Sugarcane, Wilting of Arhar, Mosaic diseases on tobacco and cucumber, yellow vein mosaic of bhindi; Citrus Canker, Little leaf of brinjal; Disease management: Quarantine organizationand Integrated plant disease management, Biological control	12

Keywords: Microbial techniques, Mushroom cultivation, Mycology,Lichenology & Mycorrhiza, Plant diseases

Part C -Learning Resources

Suggested Readings:

1. Microbiology Fundamental and Applications (hindi) (pb) 9. ISBN: 9788188826230 Edition: 03Year : 2016Author : Dr. Purohit SS , Dr. Deo Publisher : Student Edition Language : Hindi
2. Modern Microbiology (hindi) (hb) ISBN: 9788177543599Edition : 1Year : 2018Author : Dr. Purohit SS , Dr. Singh T Publisher : Agrobios (India)
3. Plant pathology by R.S. Mehrotra, Tata McGraw-Hill Publication

Text Books:

1. Kumar, H.D. (1999). Introductory Phycology. Affiliated East-West. Press Pvt. Ltd. Delhi. 2nd edition.
2. Tortora, G.J., Funke, B.R., Case, C.L. (2010). Microbiology: An Introduction, Pearson Benjamin Cummings, U.S.A. 10th edition.
3. Sethi, I.K. and Walia, S.K. (2011). Text book of Fungi & Their Allies, MacMillan Publishers Pvt. Ltd., Delhi.
4. Aggarwal, S. K. 2009. Foundation Course in Biology, A one books Pvt. Ltd., New Delhi.
5. Aneja, K. R. 1993. Experiments in Microbiology, Pathology and Tissue Culture, Vishwa Prakashan, NewDelhi.
6. Annie Ragland, 2012. Algae and Bryophytes, Saras Publication, Kanyakumari, India.
7. Basu, A. N. 1993. Essentials of Plant Viruses, Vectors and Plant diseases, New Age International, New Delhi.
8. Chopra. G. L. 1984. A text book of Algae, Rastogi publications, Meerut,India.
9. Dubey, R. C. and Maheshwari. D.K. 2012. Practical Microbiology, S. Chand & Company, Pvt. Ltd., NewDelhi.
10. Fritsch, R. E. 1977. Structure and Reproduction of Algae, Cambridge University Press, London.
11. Sharma, P.D. (2011). Plant Pathology. Meerut, U.P.: Rastogi Publication.
12. Webster, J., Weber, R. (2007). Introduction to Fungi, 3rd edition. Cambridge, U.K.: Cambridge University Press..
13. Pandey B.P. 2001. College Botany Volume 1, S Chand & Company Pvt.Ltd, New Delhi.
14. Pandey. B.P. 2014 Modern Practical Botany, (Vol-I) S. Chand and Company Pvt. Ltd., New Delhi.
15. .Pelzar, 1963. Microbiology, Tata Mc Graw Hill, New Delhi
16. Rangaswamy, G. 2009, Disease of Crop Plants in India, Prientice Hall of India, New Delhi.

Online Resources

i. https://indianculture.gov.in/rarebooks/economic-botany-india

for
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ii. https://www.infinityfoundation.com/mandala/t_es/t_es_tiwar_botany_frameset.htm
iii. https://www.researchgate.net/publication/335715457_Ancient_Indian_rishi's_Sages_knowledge_of_botany_and_medicinal_plants_since_Vedic_period_was_much_older_than_the_period_of_Theophrastus_A_case_study_who_was_the_actual_father_of_botany
iv. https://www.scribd.com/presentation/81269920/Botany-of-Ancient-India
v. https://insa.nic.in/writereaddata/UpLoadedFiles/IJHS/Vol17_2_17_PKBhattacharyya.pdf

Suggested equivalent online courses:

1. https://indianculture.gov.in/rarebooks/economic-botany-india
2. https://community.plantae.org/tags/mooc futurelearn.com/courses/teaching-biology-inspiring-students-with-plants-in-science
3. https://www.coursera.org/courses?query=plants
4. http://egyankosh.ac.in/handle/123456789/53530
5. https://www.classcentral.com/tag/microbiology
6. https://www.edx.org/learn/microbiology
7. https://www.mooc-list.com/tags/microbiology
8. https://www.udemy.com/topic/microbiology/ https://ucmp.berkeley.edu/bacteria/bacteria.html
9. https://www.livescience.com/53272-what-is-a-virus.html
10. https://gclambathach.in/lms/Economic%20importance%20of%20Algae.pdf
11. https://www.slideshare.net/sardar1109/algae-notes-1
12. https://www.onlinebiologynotes.com/algae-general-characteristics-classification/
13. https://www.sciencedirect.com/topics/immunology-and-microbiology/fungus
14. https://ucmp.berkeley.edu/fungi/fungi.html
15. https://agrimoon.com/wp-content/uploads/Mashroom-culture.pdf
16. http://ecoursesonline.iasri.res.in/mod/page/view.php?id=11293
17. http://www.hillagric.ac.in/edu/coa/ppath/lect/plpath111/Lect.%201%20%20Introduction-Pl%20Path%20111.pdf
18. http://www.jnkvv.org/PDF/11042020102651plant_pathology.pdf
19. https://www.apsnet.org/edcenter/disimpactmngmnt/topc/EpidemiologyTemporal/Pages/ManagementStrategies.aspx
20. https://learn.saylor.org/course/view.php?id=23&sectionid=6821
21. https://www.sciencedirect.com/topics/earth-and-planetary-sciences/microscopy
22. http://physics.fe.uni-lj.si/students/predavanja/Microscopy_Kulkarni.pdf
23. https://lipidnanostructuresgroup.weebly.com/
24. https://zoology4civilservices.wordpress.com/2016/06/18/65/
25. https://microbenotes.com/laminar-flow-hood

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50

Continuous Comprehensive Evaluation (CCE):As per rule

University Exam(UE): 50Marks

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Declaration

This is to certify that the syllabus is framed by the Central Board of Studies (Botany) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

1. Shri Prabhat Pandey
   Asst. Prof.
   Gramya Bharti Vidyapith, Hardibazar - Chairman
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10. ~~Manisha Gupta~~ - ~~Member~~ Member

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Part A: Introduction				
Program: **Certificate course in Microbial techniques and Archaegoniate identification**		Class: **B.Sc. I Year**	Year: **2022**	Session: **2022-2023**
1.	Course Code	**BOT-2T**		
2.	Course Title	**Archegoniateae and Plant Architecture**		
3.	Course Type	**Theory**		
4.	Pre-requisite (if any)	NO		
5.	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to • Understand the General characteristics and affinities of Bryophytes, Pteridophytes and Gymnosperms • Phylogenetic relationships with the help of Palaeobotanical studies • Learn morphology, and- flower architecture of angiosperms		
6.	**Credit Value**	**Theory: 4**		
7.	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks: 17**	

Part B: Content of the Course		
Total Periods: 60		
Unit	**Topics**	**No. ofPeriod**
I	**Introduction to Archegoniates & Bryophytes:** Unique features of archegoniates, Bryophytes: General characteristic features and Affinities, adaptations to land habit, Range of thallus organization. Classification (up to family), morphology, anatomy and reproduction *of Riccia, Marchantia , Anthoceros* and *Sphagnum.* (Developmental details not to be included). Economic importance of bryophytes.	12
II	**Pteridophytes:** General characteristic features and affinities, Classification (up to family) with examples, Heterospory and seed habit, stelar evolution, economic importance of Pteridophytes, Morphology, anatomy and life cycle of *Psilotum, Lycopodium, Selaginella, Equisetum, Pteris* and *Marselia.*	12
III	**Gymnosperms:** Classification and distribution of gymnosperms; Salient features of Cycadales, Ginkgoales, Coniferales and Gnetales, their examples, structure and reproduction; economic importance, Morphology, anatomy and life cycle of *Cycas, Pinus*and *Ephedra.*	12
IV	**Palaeobotany:** General account, Geological time scale; Brief account of process of fossilization & types of fossils and their study techniques; Fossil plants: *Rhynia, Williamsonia, Cycadeoidea.* Contribution of Prof. BirbalSahni	12
V	**Angiosperm Morphology (Stem, Roots, Leaves, Flowers and Inflorescence:** Morphology and modifications of root; Stem, leaf and bud. Types of inflorescences; flowers, flower parts, fruits and types of placentation; Definition	12

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	and types of seeds.	

Keywords: Archaegoniatae, Bryophyta, *Rhynia*, Heterospory, Angiosperms, Fossil

Part C -Learning Resources

1. Gangulee H. S. and K. Kar 1992. College Botany Vol. I and II. (New Central Book Agency)
2. Bhatnagar, S.P. and Moitra, A. (1996). Gymnosperms. New Age International (P) Ltd Publishers, New Delhi, India.
3. Pandey S.K. (2012). Quick Concept of Botany. Publisher LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany (ISBN: 978-3-8484-3104-5).
4. Parihar, N.S. (1991). An introduction to Embryophyta. Vol. I. Bryophyta. Central Book Depot, Allahabad.
5. Rashid A (1999) An Introduction to Pteridophyta, Vikas Publishing House Pvt. Ltd. New Delhi.
6. Sharma OP (1990) Textbook of Pteridophyta. MacMillan India Ltd. Delhi.
7. Vashishtha BR, Sinha AK and Kumar A (2010) Botany for Degree Students – Pteridophyta, S. Chand and Company,
8. Vashishtha BR, Sinha AK and Kumar A (2010) Botany for Degree Students – Gymnosperms, S. Chand and
9. Parihar NS (1976) Biology and Morphology of Pteridophytes. Central Book Depot.
10. Bhatnagar SP (1996) Gymnosperms, New Age International Publisher.
11. Pandey BP (2010) College Botany Vol II S. Chand and Company, New Delhi .

Online Resources

1. https://www.anbg.gov.au/bryophyte/what-is-bryophyte.
2. https://pteridoportal.org/portal/index.php
3. https://www.conifers.org/zz/gymnosperms.php
4. http://www.mobot.org/MOBOT/research/APweb/
5. https://milneorchid.weebly.com/plant-id-for-beginners
6. http://webapp1.dlib.indiana.edu/inauthors/view?docId=VAC0868&doc.view=print
7. https://palynology.org/
8. http://www2.estrellamountain.edu/faculty/farabee/biobk/Biobookflowers.html
9. https://www.sciencelearn.org.nz/resources/100-plant-reproduction
10. https://palaeobotany.org

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50

Continuous Comprehensive Evaluation (CCE):As per rule

University Exam(UE): 50Marks

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1. Shri Prabhat Pandey
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   Gramya Bharti Vidyapith, Hardibazar - Chairman
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   Govt. Pt. Shyamacharan Shukla College, Dharsiwa, Raipur
10. Manisha Gupta - Member

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Part A : Introduction				
Programme: Certificate		**Class B.Sc.-I**	**Year: 2022**	**Session: 2022-23**
1.	Course Code	**BOT-1P**		
2.	Course Title	**Microbial Techniques and Archegoniate identification**		
3.	Course Type	**Practical**		
4.	Pre-requisite (if any)	No		
5.	Course outcomes:	After the completion of the course the students will be able to: • Understand the instruments, techniques and good lab practices for working in a microbiology laboratory. • Develop skills for identifying microbes and using them for Industrial, Agriculture and Environment purposes. • Practical skills in the field and laboratory experiments in Microbiology & Pathology. • learn to identify Algae, Lichens and plant pathogens along with their Symbiotic and Parasitic associations. • Can initiate his own Plant & Seed Diagnostic Clinic • Can start own enterprise on microbial products		
6.	Credit Value	2		
7.	Total Marks	Max. Marks: 50	Min. Passing Marks:17	

Part B : Content of the Course	
Total No. of Periods – 30	
Tentative Practical List	**Topic * (Minimum Any three from each unit depending on facilities and syllabus.** **20% for spotting, 10% each for viva and sessional and rest 60 % marks equally in each unit.)**
	INSTRUMENTS & TECHNIQUES: 1. Laboratory safety and good laboratory practices. 2. Principles and application of Laboratory instruments-microscope, incubator, autoclave, centrifuge, Laminar air flow, filtration unit, shaker, pH meter. 3. Buffer preparation & titration 4. Cleaning and Sterilization of glassware 5. Preparation of media- PDA and NAM 6. Inoculation and culturing of Fungi and bacteria **BACTERIAL IDENTIFICATION:** 1. Isolation of bacteria. 2. Staining techniques: Gram's, staining
	MYCOLOGY: 1. Study/ Slide preparation and . Staining of fungi. *Rhizopus, Saccharomyces, Penicillium, Peziza, Ustilago, Puccinia; Fusarium, Alternaria. Agaricus*:

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2. . Lichens: crustose, foliose and fruticose specimens. **PHYCOLOGY:** 1.Study / Slide preparation and Staining of algae – *Volvox, Oedogonium* and *Chara; Vaucheria;Ectocarpus Polysiphonia*
EXPERIMENTAL PLANT PATHOLOGY Isolation of pathogen from diseased leaf. Identification: Pathological specimens of Brown spot of rice, Bacterial blight of rice, Loose smut of wheat, , red rot of sugar cane, Tikka disease of ground nut, Slides of uredial, telial, pycnial & aecial stages of *Puccinia*, Few viral and bacterial plant diseases. like- Leaf curl of Papaya, Citrus canker **PRACTICALS IN APPLIED MICROBIOLOGY** 1. Isolation of rhizosphere to non rhizosphere population of bacteria. 2. Isolation of phyllosphere microflora. 3. Alcohol production from grapes in anaerobic condition 4. Isolation of lactic acid bacteria from curd. 5. Enzyme production and assay – catalase, protease and amylase.
Bryophyta: Study of morphology and anatomy of : 1. *Riccia* 2. *Marchantia* 3. *Anthoceros* 4. *Sphagnum* **Pteridophyta:** Study of morphology and anatomy of : 1. *Lycopodium* 2. *Selaginella* 3. *Equisetum* 4. *Pteris* 5. *Marselia*
Gymnosperm: Study of morphology and anatomy of : 1. *Cycas* 2. *Pinus* 3. *Ephedra*

Part C - Learning Resource
Text Books, Reference Books, Other Resources
Suggested Readings: 1. Practical Botany (Part I) ISBN #:81-301-0008-8 Sunil D Purohit, Gotam K Kukda & Anamika Singhvi Edition:2013 Apex Publishing House Durga Nursery Road, Udaipur, Rajasthan (bilingual). 2. Pandey S.K. (2012). Quick Concept of Botany. Publisher LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany (ISBN: 978-3-8484-3104-5). 3. Dubey, R. C. and Maheshwari. D.K. 2012. Practical Microbiology, S. Chand & Company, Pvt. Ltd., New Delhi. 4. Pandey. B.P. 2014 Modern Practical Botany, (Vol-I) S. Chand and Company Pvt. Ltd., New Delhi.

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E-learning Resources:

5. https://community.plantae.org/tags/mooc
6. futurelearn.com/courses/teaching-biology-inspiring-students-with-plants-in-science
7. https://microbiologysociety.org/publication/education-outreach-resources/basic-practical-microbiology-a-manual.html
8. https://microbiologyonline.org/file/7926d7789d8a2f7b2075109f68c3175e.pdf
9. http://allaboutalgae.com/benefits/
10. https://repository.cimmyt.org/xmlui/bitstream/handle/10883/3219/64331.pdf
11. https://www.mooc-list.com/tags/microbiology
12. http://www.agrifs.ir/sites/default/files/A%20text%20book%20of%20practical%20botany%201%20%7BAshok%20Bendre%7D%20%5B8
13. 171339239%5D%20%281984%29.pdf
14. https://www.coursera.org/courses?query=plants
15. http://egyankosh.ac.in/handle/123456789/53530
16. https://www.classcentral.com/tag/microbiology
17. https://www.edx.org/learn/microbiology
18. https://www.mooc-list.com/tags/microbiology
19. https://www.udemy.com/topic/microbiology/

Part D – Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): Not Applicable University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	As per rules

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Declaration

This is to certify that the syllabus is framed by the Central Board of Studies (Botany) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

1. Shri Prabhat Pandey
   Asst. Prof.
   Gramya Bharti Vidyapith, Hardibazar - Chairman
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   Govt. V.B. Singh Dev Girls College, Jashpur
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10. Manisha Gupta - Member

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Part A: Introduction				
Program: Certificate Course		Class: B. A. / B.Sc. Part I	Year: 2022	Session:2022-2023
1	Course Code	Paper – MATH- 1T		
2	Course Title	Calculus		
3	Course Type	Theory		
4	Pre-requisite (if any)	No		
5	Course Learning Outcome (CLO)	**This Course will enable the students to:** • Calculate the limit and examine the continuity and understand the geometrical interpretation of differentiability. • Understand the consequences of various mean value theorems. • Draw curves in cartesian and polar coordinate systems. • Understand conceptual variations while advancing from one variable to severalvariables in calculus. • Inter-relationship amongst the line integral, double and triple integral formulations. • Realize importance of Green, Gauss and Stokes' theorems in other branches ofmathematics.		
6	Credit Value	4		
7	Total Marks	Maximum Marks : 50	Minimum Passing Marks :	

Part B: Content of the Course Total Periods: 60		
Unit	Topics	No. of Periods
I	**Sequences, Continuity and Differentiability:** Notion of convergence of sequences and series of real numbers, ϵ-δ definition of limit and continuity of a real valued function; Differentiability and its geometrical interpretation; Rolle's theorem, Lagrange's mean value theorem, Cauchy's mean value theorem and their geometrical interpretations, Darboux's theorem.	12
II	**Expansion of Functions:** Successive differentiation and Leibnitz theorem, Maclaurin's and Taylor's theorems for expansion of a function, Taylor's theorem in finite form with Lagrange, Cauchy and Roche–Schlömilch forms of remainder.	12
III	**Curvature, Asymptotes and Curve Tracing:** Curvature; Asymptotes of general algebraic curves, parallel asymptotes, Asymptotes parallel to axes; symmetry, concavity and convexity, points of inflexion, Tangents at origin, Multiple points, Position and nature of double points; Tracing of	12

	cartesian, polar and parametric curves; Envelopes and Evolutes.	
IV	**Functions of Several Variables:** Limit, continuity and first order partial derivatives, Higher order partial derivatives, Change of variables, Euler's theorem for homogeneous functions, Taylor's theorem, Total differentiation and Jacobians.	12
V	**Double and Triple Integrals:** Double integration over rectangular and non-rectangular regions, Double integrals in polar co-ordinates, Triple integral over a parallelepiped and solid regions, Volume by triple integrals, Line integrals, Green's theorem, Area as a line integral, Surface integrals, Stokes' theorem, The Gauss divergence theorem.	12

Part C - Learning Resource

Text Books and Reference Books:

1. Howard Anton, I. Bivens & Stephan Davis. Calculus (10th edition). Wiley India. 2016
2. Gabriel Klambauer. Aspects of Calculus. Springer-Verlag. 1986
3. Wieslaw Krawcewicz & Bindhyachal Rai. Calculus with Maple Labs. Narosa. 2003
4. Gorakh Prasad Differential Calculus (19th edition). Pothishala Pvt. Ltd. 2016
5. George B. Thomas Jr., Joel Hass, Christopher Heil & Maurice D. Weir. Thomas' Calculus (14th edition). Pearson Education 2018
6. Jerrold Marsden, Anthony J. Tromba & Alan Weinstein. Basic Multivariable Calculus, Springer India Pvt. Limited.2009
7. James Stewart. Multivariable Calculus (7th edition). Brooks/Cole. Cengage 2012.
8. Monty J. Strauss, Gerald L. Bradley & Karl J. Smith. Calculus (3rd edition). Pearson Education. Dorling Kindersley (India) Pvt. Ltd. 2011

E- Resources :

1. Suggested Equivalent **online courses:** Web link NPTEL/ SWAYAM/ MOOCs
2. https://www.youtube.com/watch?v=tffrrtzUhmw&list=PL7oBzLzHZ1wXBSiJEgqz_iwVoLiY8qhbv
3. https://www.youtube.com/watch?v=XzaeYnZdK5o&list=PLtKWB-wrvn4nA2h8TFxzWL2zy8O9th_fy
4. https://www.youtube.com/watch?v=zxbHsPB8m-M&list=PLBCEh9iawVM75FaeqS-z7olBKTSLfAC4A

Part D: Assessment and Evaluation	
Suggested Continuous Evaluation Methods: Maximum Marks:	50 Marks

Declaration

This is to certify that the syllabus is framed by the Central Board of Studies (Mathematics) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

1. Dr. Premlata Verma
   Asst. Prof.
   Govt. Bilasa Girls PG College, Bilaspur - Chairman
2. Prof. R.R. Sahu
   Asst. Prof.
   Govt. MMR PG College, Champa - Member
3. Mr. Yetendra Upadhyay
   Asst. Prof.
   Govt. N.K. College, Kota - Member
4. Ram Lakhan Pandey
   Asst. Prof.
   Dr. B.R. Ambedkar Govt. College, Baloda - Member
5. Dr. Arun Kumar Mishra
   Professor
   Govt. DT PG College, Utai - Member
6. Dr. Shabnam Khan
   Professor
   Govt. Digvijay PG College, Rajnandgaon - Member
7. Dr. Padmavati
   Professor
   Govt. VYT PG Auto. College, Durg - Member
8. Dr. Anjali Chandravanshi
   Asst. Prof.
   Govt. J.Y. Chhattisgarh College, Raipur - Member
9. Manisha Gupta
   Asst. Prof.
   GNA Govt. PG College, Bhatapara, Raipur - Member
10. Mrs. Sangeeta Pandey
    Asst. Prof.
    R.G. Govt. PG College, Ambikapur - Member
11. Dr. S.K. Bohre
    Asst. Prof.
    I.G. Govt. PG College, Vaishalinagar, Bhilai - Member
12. Dr. Samir Dashputre

Asst. Prof.
Govt. College, Arjunda, Balod

13. Dr. Chandrajeet Singh Rathore - Member
Asst. Prof.
Govt. Jajwalyadev Naveen Girls PG College, Janjgir

14. Dr. Shri Nath Gupta - Member
K. Govt. Arts & Science College, Raigarh

15. Dr. Raghu Nandan Patel - Member
Asst. Prof.
Govt. MLS College, Seepat

Part A: Introduction				
Program: Certificate Course		Class: B. A. / B.Sc. Part I	Year: 2022	Session:2022-2023
1	Course Code	Paper – MATH-2T		
2	Course Title	Algebra		
3	Course Type	Theory		
4	Pre-requisite (if any)	No		
5	Course Learning Outcome (CLO)	**This Course will enable the students to:** • Employ De Moivre's theorem in a number of applications to solve numerical problems. • Learn about the fundamental concepts of groups, subgroups, normal subgroups, isomorphism theorems, cyclic and permutation groups. • Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix, using rank. • Find eigen values and corresponding eigen vectors for a square matrix. • Understand real vector spaces, subspaces, basis, dimension and their properties.		
6	Credit Value	4		
7	Total Marks	Maximum Marks : 50	Minimum Passing Marks :	

Part B: Content of the Course Total Periods: 60		
Unit	Topics	No. of Periods
I	**Set Theory and Theory of Equations:** Sets, Relations, Equivalence relations, Equivalence classes; Finite, countable and uncountable sets; The division algorithm, Divisibility and the Euclidean algorithm, Modular arithmetic and basic properties of congruence's; Elementary theorems on the roots of polynomial equations, Imaginary roots, The fundamental theorem of algebra (statement only); The nth roots of unity, De Moivre's theorem for integer and rational indices and its applications.	12
II	**Groups, Subgroups, Normal Subgroups and Isomorphism Theorems :** Definition and properties of a group, Abelian groups, Examples of groups including D_n (dihedral groups), Q_8	12

	(quarternian group), $GL(n, \mathbb{R})$ (general linear groups) and $SL(n, \mathbb{R})$ (special linear groups); Subgroups and examples, Cosets and their properties, Lagrange's theorem and its applications, Normal subgroups and their properties, Simple groups, Factors groups; Group homomorphisms and isomorphisms with properties; First, second and third isomorphism theorems for groups.	
III	**Cyclic and Permutation Groups:** Cyclic groups and properties, Classifications of subgroup of cyclic groups, Cauchy theorem for finite abelian groups; Centralizer, Normalizer, Center of a group, Product of two subgroups, Permutation group and properties, Even and odd permutations, Cayley's theorem.	12
IV	**Row Echelon Form of Matrices and Applications:** Systems of linear equations, Row reduction and echelon forms, The rank of a matrix and its applications in solving system of linear equations; Matrix operations, Symmetric, skew- symmetric, self-adjoint, orthogonal, Hermition, skew-Hermition and unitary matrices; Determinant of a square matrix, The inverse of a square matrix, Eigen vectors and eigen values, The characteristic equation and the Cayley□Hamilton theorem, Applications of matrices to computer graphics and search engines.	12
V	**Vector Spaces and Linear Transformations:** Definitions of field and vector space with examples, Subspaces, Linear span, Quotient space and direct sum, Linearly independent and dependent sets, Bases and dimension, Linear transformation and matrix of a linear transformation, Change of coordinates, Rank and nullity of linear transformation, Rank-nullity theorem.	12

Part C - Learning Resource

Text Books and Reference Books

1. Michael Artin *Algebra* (2nd edition). Pearson 2014.
2. John B. Fraleigh. *A First Course in Abstract Algebra* (7th edition). Pearson 2007.
3. Stephen H. Friedberg, Arnold J.Insel& Lawrence E. Spence. *Linear Algebra* (4thedition). Prentice-Hall of India Pvt. Ltd. 2003
4. Joseph A. Gallian. *Contemporary Abstract Algebra* (9th edition). Cengage. 2017
5. Kenneth Hoffman & Ray Kunze. *Linear Algebra* (2nd edition). Prentice-Hall. 2015

6. I. N. Herstein. *Topics in Algebra* (2nd edition). Wiley India. 2006
7. Nathan Jacobson. *Basic Algebra* I (2nd edition). Dover Publications. 2009
8. Ramji Lal. *Algebra 1: Groups, Rings, Fields and Arithmetic*. Springer. 2017
9. I.S. Luthar & I.B.S. Passi. *Algebra: Volume 1: Groups*. Narosa. 2013

E- Resources

1. Suggested Equivalent **online courses:** Web link NPTEL/ SWAYAM/ MOOCs
2. Linear Algebra
   https://www.youtube.com/watch?v=9h_Q-R6sXbM&list=PL7oBzLzHZ1wXQvQ938Wg1-soq09GywgOw
3. Group theory
   https://www.youtube.com/watch?v=pMzcLG6s3z0&list=PLEAYkSg4uSQ1Yhxu2U-BxtRjZElrfVVcO

Part D: Assessment and Evaluation	
Suggested Continuous Evaluation Methods: Maximum Marks:	50 Marks

Declaration

This is to certify that the syllabus is framed by the Central Board of Studies (Mathematics) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

1. Dr. Premlata Verma - Chairman
   Asst. Prof.
   Govt. Bilasa Girls PG College, Bilaspur
2. Prof. R.R. Sahu - Member
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   Govt. MMR PG College, Champa
3. Mr. Yetendra Upadhyay - Member
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14. Dr. Shri Nath Gupta - Member
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15. Dr. Raghu Nandan Patel - Member
Asst. Prof.
Govt. MLS College, Seepat

Part A: Introduction				
Program: **Certificate Course**		Class: **B.A./ B.Sc. I Year**	Year: **2022**	Session: **2022-2023**
1	Course Code	**MATH-1P (I)**		
2	Course Title	I - Lab 01 - Calculus and Algebra		
3	Course Type	**Practical**		
4	Pre-requisite (if any)	No		
5	Course Learning Outcomes (CLO)	At the end of course, Students will be able to • Learn Free and Open Source Software (FOSS) tools for computer programming • Solve problems on Calculus and Algebra theories studied in Mathematics Paper 1and 2 by using FOSS softwares. • Acquire knowledge of applications of Calculus and Algebra through FOSS.		
6	**Credit Value**	**2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
	Total Periods: 30
Tentative Practical List	Mathematics practical with Free and Open Source Software (FOSS) tools forcomputer programs, such as GeoGebra/Maxima/Scilab/ Octave /Python/R. **Course Objectives:** • To learn Free and Open Source Software (FOSS) tools for computerprogramming • Acquire knowledge of applications of algebra and calculus through FOSS **List of Practicals**: (At least 15 practicals) • Programs to illustrate left hand and right hand limits for discontinuous functions. • Program to illustrate continuity of a function • Program to illustrate differentiability of a function • Program to verify Rolle's theorem • Program to verify Lagrange's theorem • Programs to verify Cauchy's mean value theorem and finding Taylor's theorem for a given function. • Program to illustrate nth derivative without Leibnitz rule.

	• Program to construct series using Maclaurin's expansion for functions of two variables. • Program to finding the asymptotes of curves. • Program to finding radius of curvature of cycloid. • Program to finding partial derivative of a given function. • Program to calculating the area under two curves. • Obtaining partial derivatives of some standard functions. • Evaluation of the line integral with constant limits. • Evaluation of the line integral with variable limits. • Evaluation of the double integral with constant limits. • Evaluation of the double integral with variable limits. • Evaluation of the triple integral with constant limits. • Evaluation of the triple integral with variable limits. • Programs for area and volume. • Verifying whether given operator is binary or not • To find identity element of a group • To find inverse element of a group. • To construct Cayley's table • Verification of a subgroup of a given subset of a group • Finding all possible subgroups of a finite group. • Examples to verify Lagrange's theorem. • To find the left and right cosets and index of a subgroup • To find all the cyclic subgroups of a given group • Verification of normality of a given subgroup of a group • Illustrating homomorphism and isomorphism of groups • Examples on different types of rings.

	• Examples on integral domains and fields. • Examples on subrings, ideals and subrings which are not ideals. • Homomorphism and isomorphism of rings- illustrative examples. • Solving polynomial equations. • Finding G.C.D of polynomials. • Finding product of two matrices • To test linear independency of a given set of a vectors in a vector space.

Part C - Learning Resource		
Text Books, Reference Books, Other Resources		
SUPPORT FROM THE GOVT FOR STUDENTS AND TEACHERS IN UNDERSTANDING AND LEARNING FOSS TOOLS: As a national level initiative towards learning FOSS tools, IIT Bombay for MHRD, government of India is giving free training to teachers interested in learning open source software's like scilab, maxima, octave, geogebra and others. (Website: http://spoken-tutorial.org;) (email: info@spokentutorial.org; contact@spoken-tutorial.org)		
Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): Not Applicable University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable

Declaration

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- Member

Part A: Introduction				
Program: **Certificate Course**		Class: **B.A./B.Sc. I Year**	Year: **2022**	Session: **2022-2023**
1	Course Code	**MATH-1P (II)**		
2	Course Title	II - Project 01 - History of Mathematician		
3	Course Type	**Project**		
4	Pre-requisite (if any)	NIL		
5	Course Learning Outcomes (CLO)	Studying history of mathematicians help students: • Develop a deeper understanding of the mathematics they hare already studied by seeing how it was developed over time and in various places. • Know the rich intellectual heritage of the country. • Develop an appreciation of mathematics and build positive attitude towards mathematics increasing student's motivation decreasing anxiety related the subject. • To acquire knowledge about development of mathematics in ancient , medieval and modern period of history.		
6	**Credit Value**	**2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
	Total Periods: 30
Project List	**Course Objectives:** An elective course designed to acquire special / advance knowledge, such as supplement study / support study to a project work and a candidate will study such a course on his own with an advisory support a teacher / faculty member. **Project** Contributions and biographies of Indian Mathematicians- Bodhayan, Apasthambh, Katyayan and Mahaveeracharya, Brahmagupta, and Bhaskaracharya in special context of Leelavati and contributions of mathematicians involved in context of the paper of calculus and algebra. (10 Mathematicians)

Part C - Learning Resource		
Text Books, Reference Books, Other Resources		
Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): Not Applicable University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable

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Part-A: Introduction				
Program: *Certificate Course*		Class: **B. Sc. Part - I**	Year: **2022**	Session:2022-2023
1	Course Code	**MICRO -1T**		
2	Course Title	**Microbial World and Microbial Techniques**		
3	Course Type	**Core Course**		
4	Pre-requisite (if, any)	As per Government norms		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able - ➢ ***to understand the nature, occurrence and diversity of Microorganisms in the environment*** ➢ ***to learn basic techniques microbial culture, identification and handling.*** ➢ ***to become familiar with the eminent microbiologists, historical background and scope of microbiology.***		
6	Credit Value	**04**		
7	TotalMarks	**Max.Marks:50**	**Min Passing Marks: 17**	

PART B: Content of the Course

Total No. of Teaching – Periods- 60 / Hours – 40

Unit	Topics (Course contents)	No. of Periods/ Hours
I	**Development of microbiology as a discipline**: Fundamental, History & Developments Introduction to various fields of Microbiology; Contributions of eminent scientists i.e. Antony von Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister, Alexander Fleming, Martinus W. Beijerinck, Sergei N. Winogradsky, Selman A. Waksman, Paul Ehrlich, Elie Metchnikoff, Edward Jenner, Hans Christian Gram.	12 Periods / 08 Hours
II	**Systems of classification:** Binomial Nomenclature, Haeckel's three kingdom concept, Whittaker's five kingdom classification and Carl Woese's three domain classification system. Concept of prokaryotic and eukaryotic microorganisms.	12 Periods / 08 Hours
III	**Diversity of Microbial World:** General features structure, reproduction and economic importance of major groups of microorganisms i.e.Virus, Bacteria, Fungi, Algae, Yeast, Protozoa, Cyanobacteria, Chlamydia, Actinomycetes, Mycoplasma.	12 Periods / 08 Hours
IV	**Basic Microbial Techniques:** Introduction to Microscopy (Bright Field, Dark Field, Phase Contrast Fluorescent Microscope and Electron Microscope) Staining Techniques (Gram staining, negative staining, acid fast staining) and Sterilization techniques (Physical and Chemical).	12 Periods / 08 Hours

V	**Pure Culture and Staining Techniques:** Culture media and theirs types (Natural, Synthetic, Complex Media- Differential, Enriched, Enrichment, Selective Media) Pure culture isolation Technique: (Streak plate, Waskman serial dilution and plating methods) Maintenance and Preservation of pure culture.	12 Periods / 08 Hours
Keywords	***Microbial Diversity, Microbial world. Microbes, Microbial techniques, Microbial culture***	

PART – C

Learning Resources: Text Books, Reference Books and Others

Suggested Readings:

Text Books Recommended

1. General Microbiology; Vol I & II, Powar C.B. and Daginawala H.I., Himalay Pub. House, Bombay.
2. A Text Book of Microbiology; Dubey & Maheshwari.
3. Microbiology: An Introduction; Tortora, G. J, Funke B. R. and Case C. L.
4. Practical Microbiology; Dubey and Maheshwari.
5. Experiments in Microbiology: Plant Pathology and Biotechnology; K. R. Aneja.
6. A Text Book of Microbiology; R. P. Singh.
7. Prescott's Microbiology. Wiley JM, Sherwood LM and Woolverton CJ
8. Microbiology. 5th edition. Pelczar MJ, Chan ECS and Krieg NR.
9. General Microbiology. 5th edition. Stanier RY, Ingraham JL, Wheelis ML, and Painter PR.

Online Resources –

- **e-Resources / e-books and e-learning portals**
- **Use of following sites**
  1. **https://nptel.ac.in/courses/102103015**
  2. **https://onlinecourses.swayam2.ac.in/cec19_bt11/preview**
  3. **https://www.britannica.com**

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods:		
Maximum Marks:	50 Marks	
Continuous Comprehensive Evaluation (CCE):	NA	
Annual /University Exam(UE):	50 Marks	
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment /Field work	NA

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Prof DSVGK Kaladhar
CBOS Chairperson
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Part-A: Introduction				
Program: *Certificate Course*		Class: **B. Sc. Part - I**	Year: **2022**	Session:2022-2023
1	Course Code	**MICRO - 2T**		
2	Course Title	**Bacteriology, Virology & Proto-zoology**		
3	Course Type	**Core Course**		
4	Pre-requisite (if, any)	As per Government norms		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to - ➢ ***understand ecological distribution of microorganism and their significance for society*** ➢ ***aware with the essential and current knowledge of bacteria, virus and protozoa*** ➢ ***become familiar with beneficial & harmful behavior of Viruses, Bacteria, Protozoan and other microbes***		
6	Credit Value	**04**		
7	Total Marks	**Max. Marks: 50**	**Min Passing Marks:** 17	

PART B: Content of the Course

Total No. of Teaching Periods – 60 / Hours - 40

Unit	Topics (Course contents)	No. of Period / Hours
I	**Morphology and Ultra structure of Bacteria:** Cell size, shape and arrangements. Composition, structure and function of cell membrane and cell wall of gram-positive, gram-negative and archaea bacteria, capsule, flagella, pili, ribosomes, inclusions, nucleoid, plasmids. Structure and stages of spore formation.	12 / 08
II	**Ecological significance and economic importance Archaea**: methanogens, thermophiles and halophiles. Eubacteria: Gram negative(non-proteobacteria– *Deinococcus, Spirochetes*. Alpha proteobacteria-, *Rhizobium, Agrobacterium*. Gamma proteo-bacteria– *Escherichia, Pseudomonas)*. Gram positive low G+C; *Bacillus, Clostridium, Staphylococcus*. High G+C: *Streptomyces, Frankia*.	12 / 08
III	**Morphology and ultrastructure of viruses;** General Introduction, morphologyand ultra- structure of viruses, capsid and their arrangements, types of envelopes and their composition. Viral genome; their types and structure, viral related forms-virions, viroids, virusoids, and prions.	12 / 08

IV	**Classification and multiplication of viruses;** Classification of Bacterial Plant and animal viruses. Salient features and life cycle of viruses: Bacteriophages (T4 & Lambda), Plant (TMV & CMV), Animal (Adenovirus, Pox virus & retrovirus).	12 / 08
V	**Basic Introduction to protozoa;**occurrence and classification of protozoa. Structure, reproduction, life cycle and diseases caused by important protozoans- *Entamoeba, Giardia, Leishmania, Trypanosoma* and *Plasmodium.*	12 / 08
Keywords	***Bacteria, Virus, Protozoan,***	

PART – C

Learning Resources: Text Books, Reference Books and Others

Suggested Readings:

Text Books Recommended -

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2. A Text Book of Microbiology; Dubey & Maheshwari.
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8. Microbiology. Pelczar MJ, Chan ECS and Krieg NR.
9. General Microbiology. Stanier RY, Ingraham JL, Wheelis ML, and Painter PR.

Online Resources –

- **e-Resources / e-books and e-learning portals**
- **Use of following sites**

1. ***www.nos.org/media/documents/dmlt/microbiology***
2. ***www.columbia.edu/itc/hs/medical/pathophys/id/2009***
3. ***https://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/botany/04._plant_genetic_engineering/strategies_for_resistance_to_plant_viral_diseases/lm/403_lm_edited_module_27_m.pdf***

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: Continuous Comprehensive Evaluation (CCE)/Field work Annual /University Exam(UE):		50 Marks NA 50 Marks
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Field work	NA

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Part - A: Introduction

Program: *Certificate Course*		Class: B. Sc. Part - I	Year: 2022	Session:2022-2023
1	Course Code	**MICRO -1P**		
2	Course Title	**BASIC MICROBIOLOGY**		
3	Course Type	**Laboratory Course**		
4	Pre-requisite (if, any)	As per Govt. norms		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to ➢ ***handle instruments in microbiology lab.*** ➢ ***isolate, purify and observe microorganisms.*** ➢ ***maintain and preserve microbial culture***		
6	Credit Value	**02**		
7	Total Marks	**Max. Marks: 50**	**Min Passing Marks: 17**	

PART -B: Content of the Course

Total No. of Teaching Hours – 20 / 30 Periods

Group	Topics (Course contents) • It is a tentative list that can be amended by teacher/ department concerned.	No. of Period / Hour
A	1. Basic information about autoclave, hot air oven, laminar air flow and other laboratory instrument 2. Microscopy - Different parts of compound microscope. Handling and care of compound microscope 3. Preparation of solid &liquid culture media 4. Isolation of microorganism from soil, Isolation of single colonies on solid media by streak plate method. 5. Enumeration of bacteria by serial dilution and plating. 6. Measurement of microorganism (micrometry) and camera Lucida drawing of isolated organism. 7. Determination of bacterial growth by optical density measurements.	15 / 10
B	1. Preparation of laboratory Glass wares (Chemical washing, cleaning and drying) and Preparation of culture media (Liquid & solid). 2. Observation of microorganisms through permanent slides - Bacteria, Cyanobacteria, Protozoa, Fungi, Yeasts, and Algae 3. Observation of bacterial motility–Hanging drop technique / Agar Stab culture 4. Staining Techniques-Simple, Differential staining; Gram staining. Aseptic transfer techniques–types–Plate to slant/ slant to slant/ broth to broth. 5. Maintenance and preservation/stocking of pure cultures. 6. Study of the methods of isolation and propagation of plant viruses. 7. Study of cytopathic effects of viruses using photographs.	15 / 10
Keywords	***Isolation method, pure culture, culture media***	

PART – C

Learning Resources: Text Books, Reference Books and Others

Suggested Readings:

Text Books Recommended:

1. Laboratory Manual of Microbiology and Biotechnology. by Aneja K. R
2. Practical Microbiology, R. C. Dubey and D. K. Maheshwari.
3. Laboratory Manual In Microbiology. By P. Gunasekaran.

OnlineResources –

1. https://open.umn.edu/opentextbooks/textbooks/499
2. https://vlab.amrita.edu/?sub=3&brch=73&sim=720&cnt=1

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: Continuous Comprehensive Evaluation (CCE): Annual /University Exam(UE):	50 Marks NA 50 Marks	
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment /Field work	NA

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Head Microbiology & Biinformatics,
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Part A Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
S.No.				
1	Course Code	GEOL - 1T		
2	Course Title	Geodynamics&Geomorphology (Paper I)		
3	Course Type	Theory		
4	Pre-requisite (if any)	Tostudy this group, a student must have passed in the subject of **Mathematics Group**or **Biology Group** in the class12th.		
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to- • Understand basics of Geology, Solar system and internal structure of the Earth, origin and age of the Earth • Understand the theories of continental drift and plate tectonics • Understand causes and effects of earthquakes and explain weathering and its products • Describe concepts of geomorphology and landforms developed by various geological agencies • Explain about the climate change and salient features of physiographic and tectonic divisions of India		
6	Credit Value	Theory : 4		
7	Total Marks	Maximum Marks: 50		Minimum Passing Marks : 17

Part B Content of the Course		
Total Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**Introduction to Geology:** Introduction to Geology and its branches and importance, Introduction to solar system: Star, planet, satellite, asteroid and meteorite Earth in the solar system; size, shape, mass, & density, Origin of Earth, Internal structure of Earth, Crust, Mantle and Core, Age of Earth: Various methods of determination of age of the Earth	12
II	**DynamicEarth**: Concept & theories of continental-drift, Sea floor spreading and evidences, Concept of plate tectonics, tectonic plates, types and plate boundaries, Introduction to paleomagnetism and polar wandering, Mid-oceanicridges, trenches and island arcs.	12
III	**GeomorphicProcesses**: Earthquakes: Causes and effects,	12

	EarthquakeBelts,measurementofEarthquakes. Seismic zones of India, Volcanoes:Types& distribution, Fundamentalconceptsof geomorphology, Geomorphologicalagentsandprocessesofrock weathering, Soilformation,soilprofileandtypesofsoil.	
IV	**GeologicalWork:** Geological work of rivers ; fluvial landforms, Drainage system, Geologicalworkofgroundwaterandkarst topography, Geologicalworkofwind;Aeolianlandforms, GeologicalworkofGlaciers;glaciallandforms.	12
V	**Geologicalwork**: Geologicalworkofoceans;coastal landforms, Volcanic landforms, Earth'sheatbudget, Climate change, global warming, greenhouse effect, Physiographicand tectonic divisionsofIndia.	12

Part C

Learning Resources

Suggested Readings

1. भौतिक–भूविज्ञान–डॉ. मुकुल घोष
2. भौतिक–भूविज्ञान–डॉ. जे.पी. तिवारी एवंबी.के. सिंह
3. भूआकृतिविज्ञान–डॉ.सविन्द्र सिंह
4. भूविज्ञान एक परिचय –डॉ. विद्यासागरदुबे
5. भूगतिकी एवंभूआकृतिविज्ञान–डॉ. दीपकराजतिवारी
6. Holmes, A. Doris L Holmes Edit., Principles of Physical Geology, Van Nostrand Reinhold, 1978.
7. Mahapatra, G.B., Text book of Physical Geology, CBS, India, 2018
8. Mathur, S.M., Physical Geology of India, NBT India, 1991
9. Miller, William J., Physical Geology : An Introduction. D Van Nostrand Co., 5th Ed.,1949
10. Mukerjee,P.K.,Text Book of Geology. World Press Private Ltd, 2013.
11. Thornbury, W.D., Principles of Geomorphology. New Age International, 2nd Edition,196
12. Principles of Geomorphology : A.F. Ahmad

e-book

1. JainSreepat,FundamentalsofPhysicalGeology. SpringerIndia,2013

E-resources

1. https://opentextbc.ca/physicalgeology2ed/front-matte/rdownload-a-pdf/
2. https://archive.org/details/in.ernet.dli.2015.233340/page/n15/mode/2up
3. https://egyankosh.ac.in/
4. https://sites.google.com/ignou.ac.in/bscgeology
5. SWAYAM – https://swayam.gov.in/explorer?searchtext
6. National digital library – https://ndl.iitkgp.ac.in
7. e-PG pathshala (MHRD) portal, https://egpg.inflibnet .ac.in

PartD AssessmentandEvaluation		
SuggestedContinuousEvaluationMethods: MaximumMarks:50 ContinuousComprehensiveEvaluation(CCE):NA UniversityExam(UE): 50marks		
InternalAssessment: ContinuousComprehensive Evaluation(CCE)	Class Test Assignment/Presentation	NA

Declaration

This is to certify that the syllabus is framed by the Central Board of Studies in Geology as per the guidelines of the Department of Higher Education, Chhattisgarh. This meeting was held at AtalBihariBajpai University Bilaspur on 3rd June 2022.

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2	Prof.Ramesh Joshi	Govt.Kaktiya PG College, Jagdalpur, Bastar (C.G.)	Member	
3	Prof.Pradeep Singh Gour	BhanuPratapDeoGovt.PG.College, Kanker(C.G.)	Member	
4	Dr.Shailendra Singh Bhadauria	Govt.Nagarjuna Science College, Raipur (C.G.)	Member	
5	Dr.S.D.Deshmukh	Govt.V.Y.T PG Autonomous College,Durg (C.G.)	Member	3-6-22
6	Prof.AmitanshuShekharJha	Govt.Kaktiya PG College, Jagdalpur, Bastar (C.G.)	Member	
7	Prof.SunilA.K.Kerketta	Rajiv Gandhi Govt.PG College, Ambikapur (C.G.)	Member	Present online
8	Dr. NinadBodhankar	Prof. & Head Department of Geology & WRM SOS in Geology, Pt. RS University Raipur	Member	Present online
9	Dr. SandeepVansutre	Govt.Nagarjuna Science College, Raipur (C.G.)	Member	Present online
10	Pro A.K.Sandilaya	Prof., Department of Applied Geology, Dr. HS Gour University Sagar, M.P.	Member	Present online
11	Dr. BhargavaAyangar	Department of Applied Geology,NIT Raipur	Member	Present online

Part A Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
S.No.				
1	Course Code	GEOL-2T		
2	Course Title	Mineralogy and Crystallography (Paper II)		
3	Course Type	Theory		
4	Pre-requisite (if any)	To study this group, a student must have passed in the subject of **Mathematics Group** or **Biology Group** in the class 12th.		
5	Course Learning Outcomes (CLO)	On completion of this course, the students should be able to - • Explain about the basics of crystallography, various crystal forms, crystallographic axes and symmetry elements • Describe various forms of normal classes of various crystal systems • Classify the minerals in various silicate groups and explain their varieties • Describe the physical properties of various minerals. • Describe the optical characteristics of various minerals		
6	Credit Value	Theory : 4		
7	Total Marks	Maximum Marks: 50	Minimum Passing Marks : 17	

Part B Content of the Course		
Total Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**IntroductiontoCrystallography:** Definition of Mineral and Crystal :Rockforming andoreminerals, Crystal structures, Unit cells, Elements of crystal. Crystal forms, Crystallographic axes and axial angles, Weiss'sParametersandMiller'sIndicessystemsof crystalnotations.	12
II	**Crystallography:** Interfacialangleand itsmeasurement, Laws of Crystallography, Crystal symmetry: Plane, axis and center of symmetry, Classificationofcrystalsintosystemsandclasses, Symmetryandformsofnormalclasses, Twinningincrystals.	12
III	**Mineralogy :** Silicate structures and classification of silicates, Bonding in Minerals, Isomorphism and Solid solution, Polymorphism andPseudomorphism, Physical properties of minerals.	12
IV	**OpticalMineralogy:**	12

	Nature of light : reflection and refraction of light, Refractive index, Critical angle. Total internal reflection and Beckeeffect, Double refraction. Nicol prism -it's construction and working, Polarizing Microscope- its parts & functions, Optical properties of minerals.	
V	**Minerals and lithosphere :** Study of Composition, Classification, physical and optical properties of the following Mineral groups - Olivine, Garnet and Mica groups, Pyroxenes and Amphiboles, Feldspars and Feldspathoids, Silica, Compositionoflithosphere, Industrial and other uses of various minerals.	12

PartC

LearningResources

SuggestedReadings

1. खनिजतथाक्रिस्टलविज्ञान–डॉ.बी.सी. जैश
2. खनिजविज्ञान के सिद्धांत–डॉ. ए.पी. अग्रवाल
3. प्रकाशीय खनिजविज्ञान के मूलतत्व–विंचेल
4. खनिजतथाक्रिस्टलविज्ञान–डॉ. दीपकराजतिवारी
5. Gribble,C.D.;Rutley'sElementsofMineralogy.CBS,2005.
6. FordW.E.;Dana'sTextBookofMineralogy.CBS,2006.
7. Perkins,D.;Mineralogy,PrenticeHallIndia,3rded.2012.
8. Rathore,B.S.;
   BasicsofCrystallography,MineralogyandGeochemistry.NotionPressIndia,2020.
9. खनिजतथाक्रिस्टलविज्ञान–डॉ.बी.सी. जैश
10. खनिजविज्ञान के सिद्धांत–डॉ. ए.पी. अग्रवाल
11. प्रकाशीय खनिजविज्ञान के मूलतत्व–विंचेल
12. खनिजतथाक्रिस्टलविज्ञान–डॉ. दीपकराजतिवारी
13. Gribble,C.D.;Rutley'sElementsofMineralogy.CBS,2005.
14. FordW.E.;Dana'sTextBookofMineralogy.CBS,2006.
15. Perkins,D.;Mineralogy,PrenticeHallIndia,3rded.2012.
16. Rathore,B.S.;
    BasicsofCrystallography,MineralogyandGeochemistry.NotionPressIndia,2020.
17. Sharma,R.S.andSharma,Anurag;CrystallographyandMineralogy-
    ConceptsandMethods.Geol.Soc.Ind.,Bengaluru,2013.

2.E-resources :
1. https://www.mindat.org
2. https://www.mooc-list.com/tags/minerals
3. https://epgp.inflibnet.ac.in/Home
4. https://archive.org/details/in.ernet.dli.2015.233340/page/n15/mode/2up
5. https://egyankosh.ac.in/
6. https://sites.google.com/ignou.ac.in/bscgeology
7. SWAYAM – https://swayam.gov.in/explorer?searchtext
8. National digital library – https://ndl.iitkgp.ac.in
9. e-PG pathshala (MHRD) portal, https://egpg.inflibnet .ac.in

PartD AssessmentandEvaluation		
SuggestedContinuousEvaluationMethods: MaximumMarks:50 ContinuousComprehensiveEvaluation(CCE):NA UniversityExam(UE): 50marks		
InternalAssessment: ContinuousComprehensive Evaluation(CCE)	Class Test Assignment/Presentation	NA

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Part A Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
S.No.				
1	Course Code	GEOL-1P		
2	Course Title	Geodynamics, Geomorphology Mineralogy & Crystallography (Paper Practical)		
3	Course Type	Practical		
4	Pre-requisite (if any)	ThispracticalcourseisrelatedtotheorycourseGeologyPaperI& II.		
5	Course Learning Outcomes (CLO)	On completion of course, the students will be able to - • Understand the megascopic properties of Quartz and Feldspar group of minerals • Understand the megascopic properties of pyroxene group of minerals • Understand megascopic properties of Amphibole group of minerals • Describe the megascopic properties of olivine and Mica group of Minerals. • Describe microscopic identification of minerals. • Identify the various crystal Systems and Symmetry through crystal models • Assess the miller Indices of the crystal models • Identify Twining in crystals. • Identify and describe various landforms in geomorphologic models. • Interpret topographical maps		
6	Credit Value	Practical : 2		
7	Total Marks	Maximum Marks: 50	Minimum Passing Marks : 17	

Part B1 Content of the Course	
Geodynamics and Geomorphology	
Topics	**No. of Periods**
Study of geomorphic features from models, map and photographs.	3
Numbering of Topographical maps (Survey of India Toposheets) on various scales.	3
Interpretation of various geomorphic landforms and drainage patterns on topographical maps.	3
Plotting of major mountain ranges, lakes and rivers on the outline map of India.	3
Plotting of seismic observatories on the outline map of India, Plotting of epicenter and magnitudes of major earthquakes of India.	3

Part B2 Content of the Course	
Mineralogy and Crystallography	
Topics	**No. of Periods**
Study of symmetry elements of crystals/ crystal models of normal classes.	03
Study of fundamental forms of crystals/ crystal models of normal classes.	04
Verification of Euler's theorem.	01
Study of physical properties of minerals.	04
Study of optical properties of important rock forming minerals using polarizing microscope.	03
Field work of two days is compulsory for the students.	

Part C

Learning Resources

Suggested Readings:

1. भौतिक–भूविज्ञान– डॉ. मुकुल घोष
2. भौतिक–भूविज्ञान–डॉ. जे.पी. तिवारी एव ंबी. के. सिंह
3. भूआकृतिविज्ञान –डॉ.सविन्द्र सिंह
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5. भूगतिकी एंवभूआकृतिविज्ञान–डॉ. दीपकराजतिवारी
6. Holmes, A. Doris L Holmes Edit., Principles of PhysicalGeology, Van Nostrand Reinhold,1978.
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11. Thornbury,W.D.,PrinciplesofGeomorphology.NewAgeInternational ,2ndEdition,1969
12. PrinciplesofGeomorphology: A.F.Ahmad
13. प्रायोगिकभू–विज्ञान (भाग–1) –डॉ. र. प्र. मांजरेकर
14. खनिजतथाक्रिस्टलविज्ञान–डॉ.बी.सी. जैश
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18. Gribble,C.D.;Rutley'sElementsofMineralogy.CBS,2005.
19. FordW.E.;Dana'sTextBookofMineralogy.CBS,2006.

20. Perkins,D.;Mineralogy,PrenticeHallIndia,3rded.2012.
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E-resources

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5. https://egyankosh.ac.in/
6. https://sites.google.com/ignou.ac.in/bscgeology
7. SWAYAM – https://swayam.gov.in/explorer?searchtext
8. National digital library – https://ndl.iitkgp.ac.in
9. e-PG pathshala (MHRD) portal, https://egpg.inflibnet .ac.in

PartD
AssessmentandEvaluation

SuggestedContinuousEvaluationMethods:
MaximumMarks:50
ContinuousComprehensiveEvaluation(CCE):NA
UniversityExam(UE): 50marks

InternalAssessment: ContinuousComprehensive Evaluation(CCE)	Class Test Assignment/Presentation	NA

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SYLLABUS
OF
B.A./B.Sc. ANTHROPOLOGY

(ANNUAL PROGRAMME)
2023

Approved by Central Board of Studies in Anthropology

(Dated : 22.02.2023)

Preamble

The learning outcomes-based curriculum framework for a B.Sc. degree in Anthropology aimsfor a comprehensive and an integrated framework for understanding of human beings and humanities and its adaptabilities across time and space dimensions. It deals with all kinds of communities including tribal, rural as well as urban societies. The curriculum is a broad framework which exposes the students to this diversity and to help them understand the challenges, best practices as well as biological and cultural adaptive features of communities that have evolved in the process of adaptations and acclimatization.

Anthropology as a discipline is oriented towards a holistic and relativistic understanding of humanity from both biology and cultural perspectives on one hand and from distant past to the present and also future possibilities. As a discipline, it is divided into three sub-branches viz., biological anthropology, social/cultural anthropology and pre-historical archaeology, which aims to study the three facets of human beings i.e. biological, cultural and pre- historical. Thus it brings together perceptive drawn from natural sciences, social sciences and the humanities. As Eric Wolf puts it, "anthropology is the most scientific of humanities and the most humane of the sciences.

A Bachelors of Science (Honors) Program in anthropology covers all the three branches of anthropology as mentioned above as well as study of courses which draws in perspectives from other allied subjects. The courses in economic environmental, molecular, medical,genetics and development anthropologies draws in the perspectives of these disciplines to the understanding of anthropological issues and problems. The curriculum is designed to expose the students to deal with real life empirical problems through case studies as well as first handunderstanding through fieldwork.

Graduate Attributes in Subject

Some of the characteristic attributes of a graduate in anthropology may include the following Disciplinary knowledge and skills: ability to understand key concepts used in the study of a society, culture and various biological aspects of human beings ; understanding of various theories of society, culture, evolution, genetics and prehistoric archaeology. The students will also have some understandings of other related areas of interdisciplinary studies like social and life sciences, environmental studies and humanities.

Communication Skills : To develop ability to communicate and express their ideas clearly and cogently both verbally as well in writing.

Critical thinking : To develop ability to think critically and understand the pros as well as criticisms relating to the key ideas and theoretical debates in anthropology. To be able to argues logically and support ones view point citing relevant data.

Problem solving : Capacity to apply the knowledge one has learned to solve problems of real life situations.

Analytical reasoning : The skill to shrift through mass of data and to identify what is relevant data relating to the problem under study; ability to judge others arguments and point out the logical flaws and contradictions if any.

Research-related skills : Ability to formulate a problem, and undertake a systematic and scientific

enquiry about it, which include the skill to generate hypotheses, prepare relevant questionnaire and schedules and apply them; ability to interpret the date, find out the relevant cause and effect relationship and based on finding draw the logical conclusions from the data Cooperation/Team work: Ability to work in a team and show the ability to cooperate with others, divide the work and work cohesively as a unit .

Cultural Relativism : Ability to appreciate the cultural backgrounds of others and appreciate the differences and put at back ones ethno-centricism and biases.

Scientific Temperament : The candidate must develop a scientific temperament and be sufficiently interested and inquisitive in things happening around them. They should have the ability to observe systematically, raise questions and search for answers.

Part A : Introduction

Programme Certificate Course	Class B.A./B.Sc. 1st Year	Year 2023	Session

1. Course Code : **ANTH-01T**
2. Course Title : **INTRODUCTION TO BIOLOGICAL ANTHROPOLOGY**
3. Course Type : **THEORY**
4. Course Objective : The Course is designed to teach basics and fundamentals of biological anthropology and its scope. The course aims to sharpen the skills of the student so that they can explain biological diversity observed in human species. The students will learn about primate and human evolution, primate behavior and social diversity amongst the human populations. Related practical are an integral part of this Course.
5. Course Learning Outcome :
   - The students will learn about various theories related to human evolution and variation. They will learn about history of Physical Anthropology and its applications.
   - They will learn about relationship between non-human and human primates. They will learn about the origin of hominoid group, distribution and characteristics of extinct hominids and the process of hominization.
   - Some basic knowledge of genetics is also imparted through this paper.
   - From the practical components they will understand Craniometric measurements, study various parts of human body which is useful in studying evolutionary changes in modern humans.

1. Credit Value : Theory-04
2. Total Marks : Maximum Marks 50 Minimum Marks 17

Part B : Content of the Course

1. Total Units : 05
2. Total Lectures : 60

Unit	Topics	No. of Lectures
Units I, II, III, IV & V	Syllabus	12 Lectures each unit

Unit – I

- History, meaning, aims, scope of Physical Anthropology and its applications.
- Organic evolution : Meaning and evidences of organic evolution.
- Theories of Organic evolution : Lamarckism, Neo-Lamarckism, Darwinism, Neo-Darwinism and synthetic theory.

Unit – II

- Man's position in animal kingdom.

- Classification and characteristics of living primates (Prosimi and Anthropoidea).
- Comparative anatomy and behavior of human and non human primates.

Unit - III

- Miocene Hominoids : Ramapithecus.
- Pleistocene Hominoids : Australopithecus, Homo erecuts (Pithecanthropus & Sinanthropus), Neanderthal, Homo sapiens (Cromagnon, Grimaldi and Chancelade).

Unit – IV :

- Concept of Race : Meaning and definition.
- Race Formation.
- Criteria of racial classification (Anthrosopic, Anthropometric and genetical traits).
- UNESCO statement, Racisim.
- Major races of the world and their distribution (Caucasoid, Negroid & Mongoloid)
- Racial Classification of Indian population : Risley and B.S. Guha.

Unit – V

- Mendelism.
- Chromosome : Types and morphology of human chromosome.
- Structure of DNA & RNA.
- Types of inheritance : Autosomal (Dominant and recessive), Sex linked (Dominate and recessive).

Part C : Learning Resources

1. Ashley, Montague, Concept of Race.
2. Barnouw, V. 1979, Anthropology : A General Introduction, The DOrsey Press Illionis.
3. Das, B.M. 1985, Outlines of Physical Anthropology, Kitab Mahal, New Delhi.
4. Harrison, G.A., Weiner, J.S. Tanner, J.M. and Barnicot, N.A. Human Biology : An Introduction to Human Evolution, Variation and Growth, Clarenden Press, Oxford.
5. Hooton, E.A. Up from the Ape, The Macmillan Co., New York.
6. M. Ember and Ember. Anthropology
7. Sarkar S.S. Aboriginal races of India.
8. Sarkar, R.M. 1976, Fundamentals of Physical Anthropology, Blackie (India).
9. Shrivastav, A.R.N. 1994, Sharirik Manav Vigyan (in Hindi), Gyandeep Prakashan, Allabhabad.
10. Shukla, B.R.K. and Rastogi, S. Physical Anthropology and Human Genetics : An Introduction, Palka Prakashan, Delhi.ettner-Janusch, J. Origins of Man, Wiley Eastern Pvt. Ltd. New Delhi.

Part D : Assessment and Evaluation

University Exam. (UE) : Max. Marks : 50 Marks

Part A : Introduction

Programme Certificate Course	Class B.A./B.Sc. 1st Year	Year 2023	Session

1. Course Code : **ANTH-02T**
2. Course Title : **INTRODUCTION TO SOCIAL-CULTURAL ANTHROPOLOGY**
3. Course Type : **THEORY**
4. Course Objective : The Course introduces ideas about "Culture" and "Society" in order to understand their meaning and what role they play in shaping human lives. Explores some basic concept, methods and characteristics of social-cultural Anthropology. Understand nature and meaning of social, religious, political and economic institution. The objective of the paper is to introduce the students about foundation of social-cultural Anthropology and also to familiarize the students with basic categories which have emerged due to comparison of groups and institution in the global context particularly the simpler societies.
5. Course Learning Outcome :
   - The Students will learn about the scope and relevance of Social-Cultural Anthropology in relationship with other branches of anthropology.
   - The Students will learn about concept of society, culture and social institutions.
   - They will also learn about economic social and political organization.
   - Understand and describe basic concepts and methods of social-cultural Anthropology, along with its past and future.
   - Comparative study of culture and society of different ethnic groups.

1. Credit Value : Theory-04
2. Total Marks : Maximum Marks 50 Minimum Marks 17

Part B : Content of the Course

1. Total Units : 05
2. Total Lectures : 60

Unit	Topics	No. of Lectures
Units I, II, III, IV & V	Syllabus	12 Lectures each unit

Unit – I

- Meaning, aims and scope of social-cultural Anthropology.
- Social Anthropology : Definition, scope and importance.
- Ethnology : Definition, scope and importance.
- Linguistics Anthropology : Definition, Structure and Linguistic Family

- Relation of Social-Cultural Anthropology with sociallogy, psychology, history, economics and demography.

Unit – II

- Culture : Definition, characteristics and component of culture.
- Society : Definition, characteristics, importance and types of society.
- Community : Definition, characteristics, importance.
- Institution : Definition, characteristics, importance.

Unit - III

- Marriage : Meaning, aims and types of marriage, marriage rules, preferential marriage and ways of acquiring mates.
- Family : Definition, Characteristics, types and function of family.
- Kinship : Definition, types, kinship terminology, degree of kinship. kinship usage.
- Status and Role : Definition and Types.

Unit – IV :

- Religion : Definition, Characteristics and function.
- Magic : Definition, types and elements of magic.
- Custom : Definition, origins, and role.
- Mythology : Definition, characteristics and importance.

Unit – V

- Economic organization: Characteristics of simple economy, stages of economic development. Barter and ceremonial exchange.
- Political organization: State and stateless society, primitive law and justice.

Part C : Learning Resources

1. A. N. Sharma. Bharatiya Manav Vigyan.
2. Davis, K. 1981. Human society, new delhi : Surjeet publications.
3. Durkheim, E. 2013. The rules of sociallogical method and selected texts on sociallogy and its method edited by steven luke (Second Edition). Pulgrave macmillan. 20-49, 78-100.
4. Ember, C.R. et. al. 2011. Anthropology, New Delhi, Dorling Kindersley.
5. Long, G. 1956. Concept of Status and role in Anthropology. Their definition and use. The American catholic sociallogical Review. 17 (3) : 206-218.
6. Makhan Jha : Samajik Manav Vigyan.
7. Nadeem Hasnain. Indian Anthropology.
8. Vandana Sharma & Ramesh Choubey : Samajik Sanskritik Manav Vigyan.

Part D : Assessment and Evaluation

University Exam. (UE) : Max. Marks : 50 Marks

Part A : Introduction

Programme Certificate Course	Class B.A./B.Sc. 1st Year	Year 2023	Session

1. Course Code : **ANTH-01P**
2. Course Title : **PRACTICAL IN HUMAN ANATOMY AND ANTHROPOMETRY**
3. Course Objectives : The objective of this practical course is to introduce the student with the human skeleton system and its importance and to learn anthropometric techniques used in living and non-living human for assessment of ethnic variation. This will be helpful to make student skill-full for further anthropological study and research.
4. Course Type : Practical

1. Credit Value : Practical - 02
2. Total Marks : Maximum Marks 50 Minimum Marks 17

Part B : Content of the Course

1. Total Units :
2. Total Lectures : 30

Unit	Topics	No. of Lectures
-	Syllabus	30 Lectures

Part – I : Craniology and Osteology :

- Overview of bones of human Skeleton.
- Sketching and labeling of various norm's of skull.
- Identification and description of pectoral girdle, pelvic girdle and long bones of human Skeleton.

Part – II : Craniometry :

- Maximum Cranial length.
- Maximum Cranial Breadth.
- Maximum frontal Breadth.
- Bizygomatic Breadth.
- Nasal Height.
- Nasal Breadth
- Minimum frontal breadth

- Bimaxillary Breadth.
- Biorbital Breadth
- Length of foramen magnum.

Part – III : Somatometry :

- Maximum head length
- Maximum head breadth
- Maximum Frontal breadth
- Maximum bizygomatic breadth
- Bigonial breadth.
- Nasal height
- Nasal length
- Nasal breadth
- Physiognomic facial height
- Morphological facial height

Part – IV : Craniometric indices

- Cranial Index
- Nasal Index

Part C : Learning Resources

1. Das, B.M. 2013. Outlines of Physical Anthropology. Allahabad : Kitab Mahal.
2. Jurmain, R., Kilgore, L., Trevathan, W., Ciochon, R.L. 2012. Introduction to Physical Anthropology. Oxford & IBH Publishing Co. Molnar, Stephen. 1975. Human Variations : Race Types and Ethnic Groups. London : Routledge.
3. Seth, P.K. and Seth, S. 1986. The Primates. New Delhi : Northern Book Centre.
4. Singh, I.P. and Bhasin, M.K. 1989. Anthropometry : A Laboratory Manual on Biological Anthropology. Delhi : Kamla-Raj Enterprises.

Part D : Assessment and Evaluation

University Exam. (UE) : Max. Marks : 50 Marks

कार्य वृत :–दिनांक 03/03/2023 को पूर्वान्ह 12:00 बजे केन्दीय अध्ययन मंडल, भूगोल की बैठक भूगोल अध्ययनशाला, पं. रविशंकर शुक्ल वि.वि., रायपुर में आयोजित हुई जिसमें निम्नानुसार अनुशंसा की गई :–

कार्य सूची – 1 के संदर्भ में सदस्यों द्वारा बी.ए./बी. एस. सी – प्रथम, द्वितीय एवं तृतीय वर्ष, 2023–24 के पाठ्यक्रम के विषय में चर्चा की गई तथा बी.ए./बी. एस. सी. – प्रथम, द्वितीय एवं तृतीय वर्ष, 2022–23 के पाठ्यक्रम में संशोधन कर निम्नलिखित संशोधित पाठ्यक्रम अनुशंसित किया गया –

Brief Summary
3 Year Integrated UG Courses (B.A./B. Sc.) in Geography

B.A. /B.Sc. Part I

The B.A. /B.Sc. Part-I Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows:

Paper - I	Physical Geography
Paper - II	Human Geography
Paper - III	Practical Geography

B.A. /B.Sc. Part-II

The B.A./B.Sc. Part-II Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows:

Paper-I	Economic and Resources Geography
Paper-II	Regional Geography of India
Paper-III	Practical Geography

B.A. /B.Sc. Part III

The B.A. /B.Sc. Part III Examination in Geography will be 150 marks. There will be two theory papers and one Practical each of 50 marks as follows

Paper – I	Remote Sensing and GIS
Paper - II	Geography of Chhattisgarh
Paper - III	Practical Geography

(Dr C.P. NAND) (A. BECK) (Dr. S Ambekar)

(Dr. Sheela Shinde)

Program: B.A./B.Sc.	Class: I Year.	Session : 2023-24

Paper I: Physical Geography (UGeo-0101)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability to: 1. Understand the internal structure of the earth, rocks that compose it and forces within the earth that act to deform it. 2. Analyze how the natural and anthropogenic operating factors affect the development of land forms. 3. Understand about the denudation processes that unceasingly act at the earth's surface to shape land forms and reduce relief. 4. Assess the role of structure, stage and time in shaping the land forms. 5. Identify the Atmospheric pressure, winds humidity, concept of precipitation, its types and understand the Air Masses and Fronts and the Weather Forecasting. 6. Identify the relief of the ocean bottom, temperature, salinity of ocean water, tide, currents coral reef and oceanic resources.

Content of the Course

Unit	Topic
1.	Origin of the Earth, Geological Time Scale, Earth's Interior, Continental Drift Theory (Wegner), Plate Tectonics, Isostasy.
2.	Earth movements: Earthquakes and Volcanoes, Rocks, Weathering, Erosion and Normal cycle of erosion, Evolution of landscapes: Fluvial, Aeolian (Arid and Semi Arid), Glacial, Karst.
3.	Elements of Weather and Climate, Composition and Structure of the Atmosphere. World patterns of Atmospheric Temperature, Pressure, and Winds.
4.	Atmospheric Humidity and Disturbances, Climatic Classification of Koppen, Geographical account of world climate patterns: Equatorial, Monsoon, Desert and Tundra.
5.	Bottom relief of Ocean, Distribution of Temperature and Salinity of Oceans and Seas, Currents and Tides, Ocean Deposition. Law of the Sea.

Learning Resources: Text Books, Reference Books, Other Resources

Suggested Readings:

1. Ahnned, E.: Coastal Geomorphology of India.
2. Chorley, R.. J.: Spatial Analysis in Geomorphology, Methuen, London, 1972.
3. Dayal, P. : A Text book of Geomorphology, R.K. Books, New Delhi.
4. Gautam, Alka : Geomorphology, Sharda Pustak Bhawan, Allahabad.
5. Holms, A.: Principles of Physical Geology, Thomas Nelson, London.
6. Jha, V.C. : Geomorphology, Vasundhara Publication, Gorakhpur.
7. Sparks, B.W. Geomorphology, Longman, London, 1960.
8. Sharma, H.S. (cd.): Perspective in Geomorphology, Concept, New Delhi, 1980.
9. Singh, S : Geomorphology, Prayag Publication, Allahabad, 1998.
10. Steers, J.A. : The Unstable Earth Methuen, London.
11. Thornbury, W.I.). Principles of Geomorphology, John Wiloy, New York, 1960.
12. Strahler, A.N.: Physical Geography, Willey, New York.
13. सिंह.एम.बी.(2001) : भौतिक भूगोल, तारा बुक ऐजेन्सी, वारणासी।
14. सिंह, सविन्द्र (2016) : भौतिक भूगोल, प्रयाग पुस्तक भवन, इलाहाबाद।
15. दयाल, परमे वर (2012) : भौतिक भूगोल, पंच ील प्रका ान, जयपुर।
16. हुसैन, माजिद (2008) : भौतिक भूगोल, रावत पब्लिके ान, जयपुर।

Suggested equivalent online course: 1. epgp.inflibnet.ac.in 2. virtual lectures available on youtube

Dr. Sheela Shirley

Program: B.A./B.Sc.	Class: I Year.	Session : 2023-24

Paper II: Human Geography (UGeo-0102)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability to: 1. Discuss and describe the major concepts and key principles of Human Geography including place, space, scale and landscape. 2. Appreciate the diversity of the cultural backgrounds and places. 3. Problem solving from a geographic perspective by understanding the role location plays.

Content of the Course

Unit	Topic
1.	Meaning, Definition, Nature and Scope of Human Geography, Man - environment relationship: Determinism, Possibilism, Determinism, Neo-Determinism and Probabilism; Human Development Index (HDI).
2.	Human Races: Formation and Evolution, Characteristics, Classification and Distribution. Human adaptation to environment: Eskimos, Bushman, Pigmy and Masai.
3.	Growth, Density and Distribution of World Population and factors influencing spatial distribution. Over, Under, and Optimum Population; Migration of Population.
4.	Rural Settlements: Characteristics, Types and Regional Pattern, Rural Houses in India, Urban Settlement- Types and Pattern.
5.	Environmental Issues: Global Warming, Climate Change, Acid rain, Deforestation, Desertification, Air, Water and Soil Pollution.

Learning Resources :Text Books, Reference Books, Other Resources

Suggested Readings:

1. Chisholm, M. (1985): Human Geography, 2nd edition, Penguin Books, London.
2. De Blij, H.J.(1996): Human Geography: Culture, Society and Space,. 2nd edition. John Wiley and Sons, New York,
3. Fellman, J. D., Arthur, G., Judith, G., Hopkins, J. and Dan, S. (2007): Human Geography: Landscapes of Human Activities. McGraw-Hill, New York. 10th edition.
4. Haggett, P. (2004): Geography: A Modern Synthesis. 8th edition, Harper and Row, New York.
5. Huggett, R. J. (1998): Fundamentals of Biogeography, Routledge, London.
6. Hussain, M. (1994): Human Geography, Rawat Publications, Jaipur.
7. Johnston, R. J., Gregory, D., Pratt, G. and Watts, M. (2009): The Dictionary of Human Geography. 5th edition, Basil Blackwell Publishers, Oxford.
8. Norton, W. (2008): Human Geography, Oxford University Press, New York. 5th ed.
9. Singh, K. N. and Singh, J. (2001): *Manav Bhugol*. Gyanodaya Prakashan, Gorakhpur. 2nd edition.
10. Singh, L.R. (2005): Fundamentals of Human Geography, Sharda Pustak Bhawan, Allahabad
11. Smith, D. M.(1977): Human Geography- A Welfare Approach, Edward Arnold (Publishers) Ltd., London

Suggested equivalent online course:
epgp.inflibnet.ac.in 2. virtual lectures available on YouTube

(Dr. Charla Shukla)

Program: B.A./B.Sc.	Class: I Year.	Session : 2023-24

Paper III :Practical Geography (UGeo-0103)

Course Learning Outcome (CLO)	After the completion of course, the students will have ability to: 1. Develop hands on skills in diagrammatic representation of data. 2. Comprehend thematic mapping techniques, its cartographic representation and interpretation. 3. Take up Cartography as a profession.

Content of the Course

Unit	Topic
Section A: Cartography And Statistical Methods	**MM- 25**
1.	Basic concept of Latitude and Longitude. Identification of tropic of Cancer, Capricorn and equator on map, name of country and state. Northern hemisphere and southern hemisphere. Practice on world and India map.
2.	Scale: Statement Scale, Representative Fraction (R.F.), Linear scale – Simple, Diagonal, Comparative, and Time Scales.
3.	Methods of showing relief; Meaning of contour, basic features of Contours line, Hachures; Representation of different landforms by Contours; Conical hill, Plateau, V and U shape valley, Waterfall.
4.	Graphs and Diagram: Triangular graph, Bar Diagram (Simple and Composite and multiple), Circle Diagram, Pie Diagram.
5.	Statistical Technique: Mean Median, Mode
Section B: Surveying	**MM-15**
6.	Chain and Tape Survey. Triangulation method, Open Traverse and Closed Traverse
Section C: Practical Record And Viva Voce	**MM-10**

Learning Resources: Text Books, Reference Books, Other Resources

Suggested Readings:

1. Davis, R.E. and Foote, F.S. (1953): Surveying, 4th edition, McGraw Hill Publication, New York
2. Jones, P.A.(1968): Fieldwork in Geography, Longmans, Green and Company Ltd., First Publication, London
3. Monkhouse, F. J. and Wilkinson, F.J. (1985): Maps and Diagrams. Methuen, London
4. Natrajan, V. (1976): Advanced Surveying, B.I. Publications., Mumbai
5. Raisz, E. (1962): General Cartography. John Wiley and Sons, New York. 5th edition.
6. Sarkar, A. K. (1997): Practical Geography: A Systematic Approach. Orient Longman, Kolkata.
7. Singh, R.L. and Singh, Rana P.B. (1993): Elements of Practical Geography. (Hindi and English editions). Kalyani Publishers, New Delhi,.
8. Singh, L.R. (2006): Fundamentals of Practical Geography, Sharda Pustak Bhawan, Allahabad.
9. Venkatramaiah, C. (1997): A Text Book of Surveying, Universities Press, Hyderabad.
10. वर्मा,जे.पी. (2001) : प्रायोगिक भूगोल, रस्तोगी पब्लिकेषन, मेटूरं
11. मिश्रा, आर.एन.एवं पी.के.वर्मा (2019) : प्रायोगिक भूगोल, रावत पब्लिकेषन्स, जयपुरं
12. तिवारी,आर.सी.एवं सुधाकर त्रिपाठी (2009) : अभिनव प्रायोगात्मक भूगोल, प्रयाग पुस्तक भवनं
13. मॉक हाऊस तथा विल्किन्सन (अनुवाद प्रो. प्रेमचन्द्र अग्रवाल) : मानचित्र तथा आरेख, मध्यप्रदेष हिंदी इलाहबाद ग्रंथ अकादमी भोपालं

Suggested equivalent online course:
1. epgp.inflibnet.ac.in 2. virtual lectures available on you tube

(Dr Sheelashida)

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.-CS I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	**COMP-1T**		
2	Course Title	**Computer Fundamental and Operating System**		
3	Course Type	**Theory**		
4	Pre-requisite (if any)	No		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Understand the history and types of computers and various input/output devices. • Understand the concept of memory and its types. • Understand the concept of operating system and process management with scheduling algorithms. • Understand the threads and their management with deadlock detection and prevention. • Understand the working principles of Operating System.		
6	**Credit Value**	**Theory: 4**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks: 17**	

Part B: Content of the Course		
Total No. of Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**Fundamental of Computer**: History of computer, Generation of computer, Types of Computers, Block diagram of CPU, Digital and Analogue computers and its evolution. Major components of digital computers, types of digital computers, Memory addressing capability of CPU, Word length and processing speed of computers, Microprocessors, Single chip Microcomputer, Large and small computers, Users interface, hardware, software and firmware, multiprogramming multiuser system, Dumb smart and intelligent terminals, Number system & Computer Codes.	12
II	**Peripheral devices:** I/O devices-Keyboard, Mouse, Monitor, Impact and Non-Impact Printers, Plotters, Scanner, other Input/output devices: Scan method of Display, Raster Scan, Vector Scan, Bit Mapped Scan, CRT Controller, I/O Port, Programmable and Non Programmable I/O port, Inbuilt I/O ports, Parallel and Serial ports, USB, IEEE 1394, AGP, Serial data transfer scheme, Microcontroller, Signal Processor, I/O processor, Arithmetic Processor.	12
III	**Memory:** Memory hierarchy, Primary and Secondary Memory, Cache memory, Virtual Memory, Direct Access storage devices (DASD) Destructive and Non-destructive Readout, Program and data memory, Memory Management Unit (MMU), PCMCIA cards and Slots.	12
IV	**Operating System Concepts:** Evolution of Operating Systems: Types of operating systems - Different views of the operating systems, Principles of Design and Implementation. The process concept, operating system services for process management. Process scheduling, Schedulers, Scheduling Algorithms.	12
V	**Process Management and Deadlock:** Structural overview, Concept of process and Process synchronization, Process Management and Scheduling, Hardware requirements: protection, context switching, privileged mode; Threads and their Management; Tools and Constructs for Concurrency, Detection and Prevention of Deadlocks, Mutual Exclusion: Algorithms, semaphores.	12

Keywords: Computer, Input /Output Devices, Memory, Operating System, Process Management, Scheduling Algorithms, Semaphores, Deadlock.

Part C - Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
2. Fundamentals of Computers, V. Rajaraman, PHI Sixth Edition.
3. Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publishers, Fifth Edition.
4. Fundamental of Computers, Raja Raman V., Prentice Hall of India, New Delhi.
5. Operating System Concepts – Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, 8th edition, Wiley-India, 2009.
6. Modern Operating Systems, Andrew S. Tanenbaum, 3rd Edition, PHI
7. Operating Systems: A Spiral Approach – Elmasri, Carrick, Levine, TMH Edition

E-learning Resources:

Introduction to Computer Fundamental:

1. https://www.w3schools.blog/computer-fundamentals-tutorial
2. https://vikaspedia.in/education/digital-litercy/it-literacy-courses-in-associating-with-msup/computer-fundamentals
3. https://www.tutorialspoint.com/computer_fundamentals/index.htm
4. https://vikaspedia.in/education/digital-litercy/it-literacy- courses-in-associating-with-msup/computer-fundamentals
5. https://nptel.ac.in/courses/106/103/106103068/

Introduction to Operating System:

6. https://www.w3schools.in/operating-system/tutorials/

Part D: Assessment and Evaluation

Maximum Marks: 50

Declaration

The syllabus of this subject is frame as per the TOR of department of higher education, Chhattisgarh.

1. Dr. H.S. Hota - Chairman
   Prof. and Head, Dept. of Computer Science and Application
2. Dr. Sanjay Kumar - Member
   Prof. and Head, SoS in Computer Science, Pt. Ravishankar Shukla University, Raipur
3. Mr. Jitendra Kumar - Member
   Asst. Prof., Dept. of Computer Science and Application
   Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur
4. Mr. H.S.P. Tonde - Member
   Asst. Prof. and Head, Dept. of Computer Science,
   Sant Gahira Guru University Sarguja, Ambikapur
5. Dr. Mamta Singh - Member
   Asst. Prof. and Head, Sai College, Bhilai
   Hemchand Yadav Vishwavidyalaya, Durg
6. Mr. Sushil Kumar Sahu - Member
   Asst. Prof. and Head, Christ College, Jagdalpur
   Shaheed Mahendra Karma Vishwavidyalaya, Bastar
7. Mr. Vikrant Gupta - Member
   Prof. and Head, Batmul Ashram College, Salheana
   Shaheed Nand Kumar Patel University, Raigarh
8. Mr. L.K. Gavel - Member
   Asst. Prof. and Head, Govt. Ghanshyam Singh Gupt, PG College, Balod
   Hemchand Yadav Vishwavidyalaya, Durg
9. Dr. Anil Kumar Sharma - Member
   Asst. Prof. and Head, A.P.S.G.M.N.S, Govt. PG College, Kawardha
   Hemchand Yadav Vishwavidyalaya, Durg
10. Mr. Vishwnath Tamrakar - Member
    Asst. Prof. and Head, Sant Guru Ghasidas Govt. PG College, Kurud,
    Pt. Ravishankar Shukla University, Raipur
11. Ms. Anjeeta Kujur - Member
    Asst. Prof. and Head, Govt. R.B.R.N.E.S. PG College, Jashpur
    Sant Gahira Guru University Sarguja, Ambikapur
12. Mr. Suresh Kumar Thakur - Member
    Asst. Prof. and Head, Indira Gandhi Govt. PG College, Vaishali Nagar
    Hemchand Yadav Vishwavidyalaya, Durg
13. Dr. Ugrasen Suman - Member (Present Online)
    Prof. and Head, Dept. of Computer Science
    Devi Ahila Vishwavidyalaya, Indore

Date : 03.06.2022

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.-CS I Year**	Year: **2022**	Session:**2022-2023**
1.	Course Code	**COMP-2T**		
2.	Course Title	**Programming with C and C++**		
3.	Course Type	**Theory**		
4.	Pre-requisite (if any)	No		
5.	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Develop programming skill and learn how to implement new software. • Develop programming and logical concepts which helps to build up source code of concern programming language. • Understand the concept of programming like Compilation, Debugging, Executing, Linking and Loading. • Familiar about the structure of C and C++ program. • Understand about the cursor movement and control structure of C and C++ program. • Write simple C and C++ programs using programming concepts. • Familiar about procedure oriented and object oriented concepts. • Understand the concept of inheritance and polymorphism which helps them to develop programs to solve real world problems. • Use file handling concepts in C and C++ to develop programs for real life projects. • Develop new applications with C and C++ which helps them to switch in Software Industry.		
6.	**Credit Value**	**Theory : 4**		
7.	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course		
Total Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**Introduction and Programming Concepts :** Definition of Program, Source file, Object file, Executable file, Header file, Language Translator- Assembler, Interpreter, Compiler, Testing, Debugging, Linker and Loader, Algorithms, Flow Charts, History of C language, Structure of C program , C Tokens : Identifiers, Keywords, Constants, Variables, Operators , Data Types , Control structure: Conditional and looping statements, Operator Precedence and Associativity, Array and it's types.	12
II	**Core Concepts of C Programming : Functions :** Standard Library and User defined functions, function prototype, Call by value and Call by reference, recursive functions, String functions, **Structure :** Declaration and Definition, Nested structure, array within structure. **Union:** Declaration and Definition, union variables, **Pointers:** Declaration and Definition, using & and * operators, pointer arithmetic, pointer to pointer, **Dynamic memory allocation functions:** malloc, calloc, realloc, free, **File Handling**: Basics, File Pointer, various file accessing functions.	12

III	**Introduction to Object Oriented Programming:** Concepts, Features of C++, Bottom up Approach, Structure of C++ program, Data types, Class and Objects, Access Specifiers: Private, Public, Protected, I/O statements, Insertion and Extraction operator, Scope resolution operator, Array, this pointer, **Constructor:** Default constructor, Copy constructor, Parameterized constructor, Destructor.	12
IV.	**Inheritance:** Definition, Concept of base and derived class, Types of Inheritance: Single, Multilevel, Multiple, Hierarchical and Hybrid Inheritance. **Polymorphism:** Definition, Compile time polymorphism: Function overloading, Operator overloading, Run time polymorphism: Virtual Function, pure virtual function. Inline function, friend function, friend class.	12
V.	**Input-Output and File Handling :** I/O classes, File and Stream classes, Char I/O, String I/O, Object I/O, File Pointer, Opening and Closing file. **Exception Handling and Standard Template Library :** Definition, Exception basics, try, catch and throws keywords, Template, Components of STL.	12
Keywords: Token, Datatype, Operators, Functions, Class, Inheritance, Polymorphism.		

Part C - Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Program Design, Peter Juliff, PHI Publications .
2. Let us C: Yashwant Kanetkar, BPB Publications .
3. Programming in ANSI C , E. Balaguruswamy, Tata McGraw Hill
4. Let us C++ ,Y. Kanetkar, B.P.B Publication .
5. Programming in C++, E. Balaguruswamy, Tata McGraw Hill.

E Resources:

1. Introduction to C and C++ from SWAYAM/NPTEL
   https://onlinecourses.nptel.ac.in/noc19_cs38/preview
   https://onlinecourses.nptel.ac.in/noc22_cs103/preview
   https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2
2. Constant and Inline Function
   https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=10
3. Pointer and Reference
   https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=12
4. Function Overloading
   https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13
5. Operator Overloading
   https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17

6. Dynamic Memory Management
   https://www.youtube.com/watch?v=lkFK2X6qIc0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18

7. Class and Object
   https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24

8. Access Specifiers
   https://www.youtube.com/watch?v=6ki_W7cXdM0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22

9. Constructor and Destructor
   https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24

10. C different topics from W3School
    https://www.w3schools.com/c/

11. C++ different topics from W3School
    https://www.w3schools.com/CPP/default.asp

12. C different topics from Javatpoint
    https://www.javatpoint.com/c-programming-language-tutorial

13. C++ different topics from Javatpoint
    https://www.javatpoint.com/cpp-tutorial

Part D: Assessment and Evaluation

Maximum Marks: 50

Declaration

The syllabus of this subject is frame as per the TOR of department of higher education, Chhattisgarh.

1. Dr. H.S. Hota - Chairman
   Prof. and Head, Dept. of Computer Science and Application
2. Dr. Sanjay Kumar - Member
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   Sant Gahira Guru University Sarguja, Ambikapur
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   Asst. Prof. and Head, Sai College, Bhilai
   Hemchand Yadav Vishwavidyalaya, Durg
6. Mr. Sushil Kumar Sahu - Member
   Asst. Prof. and Head, Christ College, Jagdalpur

Shaheed Mahendra Karma Vishwavidyalaya, Bastar

7. Mr. Vikrant Gupta - Member
   Prof. and Head, Batmul Ashram College, Salheana
   Shaheed Nand Kumar Patel University, Raigarh
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    Pt. Ravishankar Shukla University, Raipur
11. Ms. Anjeeta Kujur - Member
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    Sant Gahira Guru University Sarguja, Ambikapur
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    Asst. Prof. and Head, Indira Gandhi Govt. PG College, Vaishali Nagar
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13. Dr. Ugrasen Suman - Member
    Prof. and Head, Dept. of Computer Science (Present Online)
    Devi Ahila Vishwavidyalaya, Indore

03/06/22

03/06/22

Not agree because Syllabus is lengthy

03/06/22

03/06/22

Date: 03.06.2022

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.-CS I Year**	Year: **2022**	Session: **2022-2023**
1	Course Code	**COMP-1P**		
2	Course Title	**LAB 1 : Programming with C and C++**		
3	Course Type	**Practical**		
4	Pre-requisite (if any)	Theoretical knowledge of C and C++		
5	Course Learning Outcomes (CLO)	At the end of course, Students will be able to: • Understand the fundamental programming concepts and methodologies which are essential to create good C/C++ programs. • Code, test, and implement a well-structured, robust computer program using the C/C++ programming language. • Write reusable modules (collections of functions). • Understand design/implementation issues involved with variable allocation and binding, control flow, types, subroutines, parameter passing. • Develop an in-depth understanding of functional, logic, and object-oriented programming paradigms.		
6	**Credit Value**	**Practical: 2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
Total Periods: 30	
Tentative Practical List	**Note:** This is tentative list; the teachers concern can add more program as per requirement. 1. Write a program in C/C++ for addition of two numbers using float data type. 2. Write a program in C/C++ to find the biggest number between two numbers. 3. Write a program in C/C++ to find the factorial value of any entered number using do – while loop. 4. Write a program in C/C++ for various arithmetic operations using switch case statements. 5. Write a program in C/C++ for Multiplication of two 3X3 matrix. 6. Write a program in C/C++ to store five books information using structure. 7. Write a program in C/C++ to store six employee information using union. 8. Write a program in C/C++ to calculate simple interest using call by value and call by reference method. 9. Write a program in C/C++ for swapping of two numbers using pointer. 10. Write a program in C/C++ to make a text file using file handling. 11. Write a program to count word, space and lines in a text file. 12. Write a program to demonstrate work of calloc(). 13. Write a program to demonstrate work of malloc(), realloc() and free().

14. Write a program in C++ to find the sum and average of five numbers using class and objects.
15. Write a program in C++ to multiply two numbers using private and public member functions.
16. Write a program in C++ to print structure like this using scope resolution operator

    1

    1 2

    1 2 3

    1 2 3 4

    1 2 3 4 5
17. Write a program in C++ for constructor and Destructor.
18. Write a program in C++ for multiple inheritance.
19. Write a program in C++ for operator overloading.
20. Write a program in C++ for friend class and friend function.
21. Write a program in C++ for virtual function and virtual class.
22. Write a program in C++ for Exception Handling.
23. Write a program in C++ to open and close a file using file Handling.
24. Given two ordered arrays of integers, write a program to merge the two-arrays to get an ordered array.
25. WAP to display Fibonacci series (i) using recursion, (ii) using iteration
26. WAP to calculate Factorial of a number (i) using recursion, (ii) using iteration
27. WAP to calculate GCD of two numbers (i) with recursion (ii) without recursion.
28. Create Matrix class using templates. Write a menu-driven program to perform following Matrix Operations (2-D array implementation): a) Sum b) Difference c) Product d) Transpose 22. Create the Person class. Create some objects of this class (by taking information from the user). Inherit the class Person to create two classes Teacher and Student class. Maintain the respective information in the classes and create, display and delete objects of these two classes (Use Runtime Polymorphism).
29. Create a class Triangle. Include overloaded functions for calculating area. Overload assignment operator and equality operator.
30. Create a class Box containing length, breath and height. Include following methods in it: a) Calculate surface Area b) Calculate Volume c) Increment, Overload ++ operator (both prefix & postfix) d) Decrement, Overload -- operator (both prefix & postfix) e) Overload operator == (to check equality of two boxes), as a friend function f) Overload Assignment operator g) Check if it is a Cube or cuboid Write a program which takes input from the user for length, breath and height to test the above class.
31. Create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file.
32. Write a program to retrieve the student information from file created in previous question and print it in following format: Roll No. Name Marks

	33. Copy the contents of one text file to another file, after removing all whitespaces. 34. Write a function that reverses the elements of an array in place. The function must accept only one pointer value and return void. 35. Write a program for exception handling.

Part C - Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Program Design, Peter Juliff, PHI Publications.
2. Let us C: Yashwant Kanetkar, BPB Publications.
3. Programming in ANSI C , E. Balaguruswamy, Tata McGraw Hill
4. Let us C++ ,Y. Kanetkar, B.P.B Publication.
5. Programming in C++, E. Balaguruswamy, Tata McGraw Hill.

E Resources:

1. Introduction from SWAYAM/NPTEL
   https://onlinecourses.nptel.ac.in/noc19_cs38/preview
   https://onlinecourses.nptel.ac.in/noc22_cs103/preview
   https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2

2. Constant and Inline Function
   https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=10

3. Pointer and Reference
   https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=12

4. Function Overloading
   https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13

5. Operator Overloading
   https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17

6. Dynamic Memory Management
   https://www.youtube.com/watch?v=lkFK2X6qIc0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18

B4KrM9uOEdvPIVFUkU3jNc6D2&index=18

7. Class and Object
https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24

8. Access Specifiers
https://www.youtube.com/watch?v=6ki_W7cXdM0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22

9. Constructor and Destructor
https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24

- **C different topics from W3School**
https://www.w3schools.com/c/
- **C++ different topics from W3School**
https://www.w3schools.com/CPP/default.asp
- **C different topics from Javatpoint**
https://www.javatpoint.com/c-programming-language-tutorial
- **C++ different topics from Javatpoint**
https://www.javatpoint.com/cpp-tutorial

Part D: **Assessment and Evaluation**

Suggested Continuous Evaluation Methods:
Maximum Marks: 50
Continuous Comprehensive Evaluation (CCE): Not Applicable
University Exam(UE): 50 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable

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    Prof. and Head, Dept. of Computer Science
    Devi Ahila Vishwavidyalaya, Indore

Date: 03.06.2022

B.Sc. Electronics (Three Year)

Programme Outcomes (PO)

PO creates an educational environment to train the students to meet the challenges of modern Electronics & Communication industry through state of the art technical knowledge and present challenges. Following are the expected programme outcomes.

- Analyze, plan and apply the acquired knowledge in basic sciences and mathematics in solving Electronics and Communication Engineering problems with technical, economic, environmental and social contexts.
- Design, build and test analog & digital electronic systems for given specifications.
- Architect modern communication systems to meet stated requirements.
- Work in a team using technical knowhow, common tools and environments to achieve project objectives.
- Engage in lifelong learning, career enhancement and adapt to changing professional and societal needs.
- In addition the course caters to the requirements of providing complete exposure to NET/SET syllabus for Electronics farmed by the U.G.C.

Programme Specific Outcomes (PSO)

PSO enables the students

- To understand basic facts and concepts in Electronics while retaining the exciting aspects of Electronics so as to develop interest in the study of Electronics as a discipline.
- To develop the ability to apply the electronic circuits.
- To get benefited with the present state of art of the electronic based circuit and serve society with its applications.
- To develop the capability to work hands-on on the electronic circuits that is becoming vital for the mankind for the purpose of work regulation
- To be familiarized with the emerging areas of Electronics and their applications in various spheres of Electronic sciences.
- To appraise the capability of students to make its relevance in future studies.
- To develop skills in the building and studying the circuits along with the software implementation.
- To be exposed to get compete with present scenario of the industrial automation.

22-2-2023 22-2-2023

Syllabus

B.Sc. Part I

ELECTRONICS

Paper-I

ELC-101T: NETWORK ANALYSIS AND ANALOGELECTRONICS

Theory: **Maximum Marks 50**

Aims & Objectives

To identify the electronics circuit components- active and passive, understand basic concept of circuits, filters, semiconductor diodes, transistor, power devices, amplifiers and oscillators.

Course Learning Outcomes:

After the completion of the course, Students will be able to

1. Apply their knowledge in analyzing Circuits by using network theorems.
2. Describe the behavior of semiconductor material.
3. Understand working and applications of semiconductor devices.
4. Understand the current voltage (I-V) characteristics of semiconductor devices (Diode/BJT/MOSFET)
5. Apply standard device models to explain/calculate critical internal parameters of semiconductor devices.
6. Explain the behavior and characteristics of power devices such as SCR/UJT etc.
7. Know the concept of feedback amplifier and their characteristics.

Unit-1

Components and Circuit Concepts: Resistors, Inductors and Capacitors (types and specifications) Voltage and Current Sources

AC Circuit Analysis: Sinusoidal Voltage and Current, Definition of Instantaneous, Peak, Peak to Peak, Root Mean Square and Average Values. Impedance and reactance, Series and parallel RLC circuit, Series and Parallel Resonance, condition for Resonance, Resonant Frequency, Bandwidth, and significance of Quality Factor (Q).

Passive Filters: Low Pass, High Pass and Band Pass

Network Theorems: Principal of Duality, Superposition Theorem, Thevenin's, Norton's Theorem, Reciprocity Theorem, Millman's Theorem, Maximum Power Transfer Theorem. AC circuit analysis using Network theorems.

23.2.23 22-2-2023

Unit-2

Junction Diode and its Applications: Energy bands in Solids, Extrinsic and Intrinsic Semiconductor, P and N type semiconductors, Formation of PN junction, Shifting of Fermi level.

PN junction diode, Diode Equation and I-V characteristics. Idea of static and dynamic resistance, dc load line analysis, Quiescent (Q) point,Zener diode, Reverse saturation current, Zener and avalanche breakdown. Rectifiers- Half wave rectifier, Full wave rectifiers (center tapped and bridge), circuit diagrams, working and waveforms, ripple factor and efficiency. Filter-Shunt capacitor filter, its role in power supply, output waveform, and working. Regulation- Line and load regulation, Zener diode as voltage regulator

Unit-3

Bipolar Junction Transistor: PNP and NPN transistor, Basic Transistor action, Transistor biasing, CE, CB , CC configurations, Input and Output characteristics DC load line, operating point,

Field Effect Transistors: JFET, Construction, Idea of Channel formation, Pinch off and Saturation Voltages, Working and Characteristics. MOSFET(N channel and P channel), Construction, Working and Characteristics.

Power Devices: UJT, Construction, Working and Characteristics. SCR, Diac, Triac, Construction, Working and Characteristics.

Unit-4

Amplifiers: Transistor biasing and Stabilization circuits- Fixed Bias and Voltage Divider Bias. Thermal runaway, stability and stability factor, Current, voltage and Power gain, Transistor as a two port network, h-parameter equivalent circuit. Small signal analysis of single stage CE amplifier, Input and Output impedance, Class A, B and C Amplifiers. Application of common Collector Amplifier.

Cascaded Amplifiers: Two stage RC Coupled Amplifier and its Frequency Response.

Unit-5

Feedback in Amplifiers: Concept of feedback, negative and positive feedback, advantages of negative feedback (Qualitative only).

Sinusoidal Oscillators: Barkhausen criterion for sustained oscillations. Phase shift, Weinsbridge, Crystal and Colpitt's oscillator. Determination of Frequency and Condition of oscillation.

Reference Books:

[1] Electric Circuits, S. A. Nasar, Schaum's outline series, Tata McGraw Hill (2004)

[2] Electrical Circuits, M. Nahvi& J. Edminister, Schaum's Outline Series, Tata McGraw-Hill (2005)

[3] Electrical Circuits, K.A. Smith and R.E. Alley, 2014, Cambridge University Press

[4] Network, Lines and Fields, J.D.Ryder, Prentice Hall of India.

[5] Electronic Devices and Circuits, David A. Bell, 5th Edition 2015, Oxford University Press.

[6] Electronic Circuits: Discrete and Integrated, D.L. Schilling and C. Belove, Tata McGraw Hill

[7] Electrical Circuit Analysis, Mahadevan and Chitra, PHI Learning

[8] Microelectronic circuits, A.S. Sedra, K.C. Smith, A.N. Chandorkar, 2014, 6thEdn., Oxford University Press.

[9] J. Millman and C. C. Halkias, Integrated Electronics, Tata McGraw Hill (2001)

[10] J. J. Cathey, 2000 Solved Problems in Electronics, Schaum's outline Series, Tata McGraw Hill (1991)

22.2.23

22.2.2023

Paper- II

ELC-102T: DIGITAL ELECTRONICS

Theory: **Maximum Marks 50**

Aims & Objectives

To understand the digital electronics and its components namely building block, combinational & sequential circuits, analog to digital converter, digital to analog converter, clock and timer circuits.

Course Outcomes:

After the completion of the course, Students will be able to

1. Understand fundamentals of Number Systems, Boolean algebra and minimization techniques.
2. Design combinational and sequential digital circuits.
3. Understand working and applications of analog to digital and digital to analog converters.

Unit-1

Number System and Codes: Decimal, Binary, Octal and Hexadecimal number systems, base conversions, Representation of signed and unsigned numbers, BCD code, Binary, octal and hexadecimal arithmetic; addition, subtraction by 2's complement method, multiplication.

Logic Gates and Boolean Algebra: Truth Tables of OR, AND, NOT, NOR, NAND, XOR, XNOR, Universal Gates, Basic postulates and fundamental theorems of Boolean algebra.

Unit-2

Logic Families: Negative and Positive logic, Saturated and unsaturated logic gates, Logic families RTL, DTL, TTL, ECL, CMOS working, circuit and characteristics

Combinational Logic Analysis and Design: Standard representation of logic functions (SOP and POS), Minimization Techniques (Karnaugh map minimization up to 4variables for SOP). Arithmetic Circuits: Binary Addition. Half and Full Adder, Half and Full Subtractor, 4-bit binary Adder/Subtractor.

Unit-3

Data Processing Circuits: Multiplexers, De-multiplexers, Decoders, Encoders.

Sequential Circuits: One bit storage, Flip- flop, SR and JK Flip-Flops. Race-around conditions in JK Flip-Flop. Master-slave JK Flip-Flop. T and D flip-flop, Clocked (Level and Edge Triggered) Flip-Flops. Preset and Clear operations.

22.2.23 22-2-2023

Unit-4

Shift Registers: Serial-in-Serial-out, Serial-in-Parallel-out, Parallel-in-Serial-out and Parallel-in-Parallel-out Shift Registers (only up to 4 bits).

Counters (4 bits): Asynchronous counters, Ripple Counter, Decade Counter Ring Counter. Synchronous Counter.

Unit-5

Clock and Timer (IC 555): Introduction, Block diagram of IC 555, Astable and Monostable multivibrator circuits. **Basic Concept of Arithmetic Logic Unit**

D-A and A-D Conversion: 4 bit binary weighted and R-2R D-A converters, circuit and working, Accuracy and Resolution. A-D conversion characteristics, successive approximation ADC. (Mention of relevant ICs for all).

Reference Books:

[1] Digital Principles and Applications, A.P. Malvino, D.P.Leach and Saha, 7th Ed., 2011, Tata McGraw

[2] Fundamentals of Digital Circuits, Anand Kumar, 2nd Edn, 2009, PHI Learning Pvt. Ltd.

[3] Digital Circuits and systems, Venugopal, 2011, Tata McGraw Hill.

[4] Digital Systems: Principles & Applications, R.J.Tocci, N.S.Widmer, 2001, PHI Learning.

[5] Thomas L. Flyod, Digital Fundamentals, Pearson Education Asia (1994)

[6] R. L. Tokheim, Digital Principles, Schaum's Outline Series, Tata McGraw- Hill (1994)

22.2.23 22-2-2023

ELECTRONICS LABORATORY

ELC-103P: Network Analysis, Analog and Digital Lab

A student is required to do at least 15 experiment in an academic year. The scheme of practical examination will be as follows-

Experiment	--	**30**
Viva	--	**10**
Sessional	--	**10**
Total	--	**50**

List of Experiments:

1. Study of Electronic Components, Digital Multimeter, function Generator and Oscilloscope.
2. Determination of Energy Band –gap of a Diode.
3. Study of P-N Junction Diode Characteristics.
4. Study of Zener diode characteristics.
5. Study of tunnel diode characteristics.
6. Study of LED Characteristics.
7. Study of Transistor characteristics in Common Base Mode (CB).
8. Study of Transistor characteristics in Common Emitter Mode (CE).
9. Study of Transistor bias stability.
10. Study of Frequency response of a single CE amplifier.
11. Study of Field Effect Transistor Characteristics.
12. Verification of Norton's Theorem.
13. Verification of Super position Theorem.
14. Verification of Thevenin's Theorem.
15. Verification of Maximum Power Transfer Theorem.
16. Design a digital to Analog convertor (DAC) of given specifications.
17. Verification of Truth table of basic logic gates.
18. Verification of De Morgan's theorem.
19. Study of half adders and full adders using IC's
20. Study of RS flip-flops.
21. Study of D and T type flip fop.
22. Study of JK master slave flips flop.
23. Study of the decade counter as MOD-3and MOD-4 and verify the truth table.
24. Study of the decade counter as MOD-8 and MOD-9 and verify the truth table.
25. Study of seven segment Display.
26. Study of Binary Counter.

Note:

1. Out of above twenty six experiments at least fifteen experiments should be done, use of bread board and soldering is expected for at least four experiments.
2. Other experiments of equal standard may also be set.

22.2.23

22.2.2023

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.-IT I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	**BSCIT-1T**		
2	Course Title	Computer Fundamental and Operating System		
3	Course Type	Theory		
4	Pre-requisite (if any)	No		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Understand the history and types of computers and various input/output devices. • Understand the concept of memory and its types. • Understand the concept of operating system and process management with scheduling algorithms. • Understand the threads and their management with deadlock detection and prevention. • Understand the working principles of Operating System.		
6	**Credit Value**	**Theory:** 4		
7	**Total Marks**	**Max. Marks:** 50		**Min Passing Marks:** 17

Part B: Content of the Course		
Total No. of Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**Fundamental of Computer**: History of computer, Generation of computer, Types of Computers, Block diagram of CPU, Digital and Analogue computers and its evolution. Major components of digital computers, types of digital computers, Memory addressing capability of CPU, Word length and processing speed of computers, Microprocessors, Single chip Microcomputer, Large and small computers, Users interface, hardware, software and firmware, multiprogramming multiuser system, Dumb smart and intelligent terminals, Number system & Computer Codes.	12
II	**Peripheral devices:** I/O devices-Keyboard, Mouse, Monitor, Impact and Non-Impact Printers, Plotters, Scanner, other Input/output devices: Scan method of Display, Raster Scan, Vector Scan, Bit Mapped Scan, CRT Controller, I/O Port, Programmable and Non Programmable I/O port, Inbuilt I/O ports, Parallel and Serial ports, USB, IEEE 1394, AGP, Serial data transfer scheme, Microcontroller, Signal Processor, I/O processor, Arithmetic Processor.	12
III	**Memory:** Memory hierarchy, Primary and Secondary Memory, Cache memory, Virtual Memory, Direct Access storage devices (DASD) Destructive and Non-destructive Readout, Program and data memory, Memory Management Unit (MMU), PCMCIA cards and Slots.	12
IV	**Operating System Concepts:** Evolution of Operating Systems: Types of operating systems - Different views of the operating systems, Principles of Design and Implementation. The process concept, operating system services for process management. Process scheduling, Schedulers, Scheduling Algorithms.	12
V	**Process Management and Deadlock:** Structural overview, Concept of process and Process synchronization, Process Management and Scheduling, Hardware requirements: protection, context switching, privileged mode; Threads and their Management; Tools and Constructs for Concurrency, Detection and Prevention of Deadlocks, Mutual Exclusion: Algorithms, semaphores.	12

Keywords: Computer, Input /Output Devices, Memory, Operating System, Process Management, Scheduling Algorithms, Semaphores, Deadlock.

Part C - Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Computer Fundamentals, P.K. Sinha, BPB Publication, Sixth Edition.
2. Fundamentals of Computers, V. Rajaraman, PHI Sixth Edition.
3. Computer Fundamentals Architecture and Organization, B. Ram, New Age International Publishers, Fifth Edition.
4. Fundamental of Computers, Raja Raman V., Prentice Hall of India, New Delhi.
5. Operating System Concepts – Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, 8th edition, Wiley-India, 2009.
6. Modern Operating Systems, Andrew S. Tanenbaum, 3rd Edition, PHI
7. Operating Systems: A Spiral Approach – Elmasri, Carrick, Levine, TMH Edition

E-learning Resources:

Introduction to Computer Fundamental:

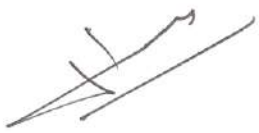
1. https://www.w3schools.blog/computer-fundamentals-tutorial
2. https://vikaspedia.in/education/digital-litercy/it-literacy-courses-in-associating-with-msup/computer-fundamentals
3. https://www.tutorialspoint.com/computer_fundamentals/index.htm
4. https://vikaspedia.in/education/digital-litercy/it-literacy- courses-in-associating-with-msup/computer-fundamentals
5. https://nptel.ac.in/courses/106/103/106103068/

Introduction to Operating System:

6. https://www.w3schools.in/operating-system/tutorials/

Part D: Assessment and Evaluation

Maximum Marks: 50



Declaration

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    Sant Gahira Guru University Sarguja, Ambikapur
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    Hemchand Yadav Vishwavidyalaya, Durg
13. Dr. Ugrasen Suman - Member (Present Online)
    Prof. and Head, Dept. of Computer Science
    Devi Ahila Vishwavidyalaya, Indore

Date : 03/06/2022

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.-IT I Year**	Year: **2022**	Session:**2022-2023**
1.	Course Code	**BSCIT-2T**		
2.	Course Title	**Programming with C and C++**		
3.	Course Type	**Theory**		
4.	Pre-requisite (if any)	No		
5.	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Develop programming skill and learn how to implement a new software. • Develop programming and logical concepts which helps to build up source code of concern programming language. • Understand the concept of programming like Compilation, Debugging, Executing, Linking and Loading. • Familiar about the structure of C and C++ program. • Understand about the cursor movement and control structure of C and C++ program. • Write simple C and C++ programs using programming concepts. • Familiar about procedure oriented and object oriented concepts. • Understand the concept of inheritance and polymorphism which helps them to develop programs to solve real world problems. • Use file handling concepts in C and C++ to develop programs for real life projects. • Develop new applications with C and C++ which helps them to switch in Software Industry.		
6.	**Credit Value**	**Theory: 5**		
7.	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course		
Total Periods: 60		
Unit	**Topics**	**No. of Periods**
I	**Introduction and Programming Concepts :** Definition of Program, Source file, Object file, Executable file, Header file, Language Translator- Assembler, Interpreter, Compiler, Testing, Debugging, Linker and Loader, Algorithms, Flow Charts, History of C language, Structure of C program , C Tokens: Identifiers , Keywords, Constants, Variables, Operators , Data Types , Control structure : Conditional and looping statements, Operator Precedence and Associativity, Array and it's types.	12
II	**Core Concepts of C Programming:** Functions : Standard Library and User defined functions, function prototype, Call by value and Call by reference, recursive functions, String functions, Structure : Declaration and Definition, Nested structure, array within structure. Union: Declaration and Definition, union variables, Pointers: Declaration and Definition, using & and * operators, pointer arithmetic, pointer to pointer, Dynamic memory allocation functions: malloc, calloc, realloc, free, File Handling: Basics, File Pointer, various file accessing functions.	12

III	**Introduction to Object Oriented Programming :** Concepts, Features of C++, Bottom up Approach, Structure of C++ program, Data types, Class and Objects, Access Specifiers : Private, Public, Protected, I/O statements, Insertion and Extraction operator, Scope resolution operator, Array, this pointer, **Constructor**, Default constructor, Copy constructor, Parameterized constructor , Destructor.	12
IV.	**Inheritance:** Definition, Concept of base and derived class, Types of Inheritance: Single, Multilevel, Multiple, Hierarchical and Hybrid Inheritance. **Polymorphism:** Definition, Compile time polymorphism: Function overloading, Operator overloading, Run time polymorphism: Virtual Function, pure virtual function. Inline function, friend function, friend class.	12
V.	**Input-Output and File Handling :** I/O classes, File and Stream classes, Char I/O, String I/O, Object I/O, File Pointer, Opening and Closing file. **Exception Handling and Standard Template Library :** Definition, Exception basics, try, catch and throws keywords, Template, Components of STL.	12
Keywords: Token, Datatypes, Operators, Functions, Class, Inheritance, Polymorphism, Friend function, Abstraction.		

Part C - Learning Resources

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Program Design, Peter Juliff, PHI Publications.
2. Let us C: Yashwant Kanetkar, BPB Publications.
3. Programming in ANSI C , E. Balaguruswamy, Tata McGraw Hill
4. Let us C++ ,Y. Kanetkar, B.P.B Publication.
5. Programming in C++, E. Balaguruswamy, Tata McGraw Hill.

E Resources:

1. Introduction (from SWAYAM/NPTEL)
   https://onlinecourses.nptel.ac.in/noc19_cs38/preview
   https://onlinecourses.nptel.ac.in/noc22_cs103/preview
   https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2

2. Constant and Inline Function
   https://www.youtube.com/watch?v=pX6LufLso2M&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=10

3. Pointer and Reference
   https://www.youtube.com/watch?v=GtsBZ5e1-cE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=12

4. Function Overloading
   https://www.youtube.com/watch?v=uJGmGAShHeU&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=13

5. Operator Overloading
   https://www.youtube.com/watch?v=0jpOwe4d-FE&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=17

6. Dynamic Memory Management
   https://www.youtube.com/watch?v=lkFK2X6qIc0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=18

7. Class and Object
   https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24

8. Access Specifiers
   https://www.youtube.com/watch?v=6ki_W7cXdM0&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=22

9. Constructor and Destructor
   https://www.youtube.com/watch?v=wtuks_f3vP4&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=24

- **C different topics from W3School**
  https://www.w3schools.com/c/
- **C++ different topics from W3School**
  https://www.w3schools.com/CPP/default.asp
- **C different topics from Javatpoint**
  https://www.javatpoint.com/c-programming-language-tutorial
- **C++ different topics from Javatpoint**
  https://www.javatpoint.com/cpp-tutorial

Part D: **Assessment and Evaluation**

Maximum Marks: 50

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    Devi Ahila Vishwavidyalaya, Indore

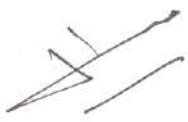
Not agree because Syllabus is lengthy

Date: 03/06/2022

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc.-IT I Year**	Year: **2022**	Session: **2022-2023**
1	Course Code	**BSCIT-1P**		
2	Course Title	**LAB 1 : Programming with C and C++**		
3	Course Type	**Practical**		
4	Pre-requisite (if any)	Theoretical knowledge of C and C++		
5	Course Learning Outcomes (CLO)	At the end of course, Students will be able to: • Understand the fundamental programming concepts and methodologies which are essential to create good C/C++ programs. • Code, test, and implement a well-structured, robust computer program using the C/C++ programming language. • Write reusable modules (collections of functions). • Understand design/implementation issues involved with variable allocation and binding, control flow, types, subroutines, parameter passing. • Develop an in-depth understanding of functional, logic, and object-oriented programming paradigms.		
6	**Credit Value**	**Practical: 2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
Total Periods: 30	
Tentative Practical List	**Note:** This is tentative list; the teachers concern can add more program as per requirement. 1. Write a program in C/C++ for addition of two numbers using float data type. 2. Write a program in C/C++ to find the biggest number between two numbers. 3. Write a program in C/C++ to find the factorial value of any entered number using do – while loop. 4. Write a program in C/C++ for various arithmetic operations using switch case statements. 5. Write a program in C/C++ for Multiplication of two 3X3 matrix. 6. Write a program in C/C++ to store five books information using structure. 7. Write a program in C/C++ to store six employee information using union. 8. Write a program in C/C++ to calculate simple interest using call by value and call by reference method. 9. Write a program in C/C++ for swapping of two numbers using pointer. 10. Write a program in C/C++ to make a text file using file handling. 11. Write a program to count word, space and lines in a text file. 12. Write a program to demonstrate work of calloc(). 13. Write a program to demonstrate work of malloc(), realloc() and free().

	14. Write a program in C++ to find the sum and average of five numbers using class and objects. 15. Write a program in C++ to multiply two numbers using private and public member functions. 16. Write a program in C++ to print structure like this using scope resolution operator 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5 17. Write a program in C++ for constructor and Destructor. 18. Write a program in C++ for multiple inheritance. 19. Write a program in C++ for operator overloading. 20. Write a program in C++ for friend class and friend function. 21. Write a program in C++ for virtual function and virtual class. 22. Write a program in C++ for Exception Handling. 23. Write a program in C++ to open and close a file using file Handling. 24. Given two ordered arrays of integers, write a program to merge the two-arrays to get an ordered array. 25. WAP to display Fibonacci series (i) using recursion, (ii) using iteration 26. WAP to calculate Factorial of a number (i) using recursion, (ii) using iteration 27. WAP to calculate GCD of two numbers (i) with recursion (ii) without recursion. 28. Create Matrix class using templates. Write a menu-driven program to perform following Matrix Operations (2-D array implementation): a) Sum b) Difference c) Product d) Transpose 22. Create the Person class. Create some objects of this class (by taking information from the user). Inherit the class Person to create two classes Teacher and Student class. Maintain the respective information in the classes and create, display and delete objects of these two classes (Use Runtime Polymorphism). 29. Create a class Triangle. Include overloaded functions for calculating area. Overload assignment operator and equality operator. 30. Create a class Box containing length, breath and height. Include following methods in it: a) Calculate surface Area b) Calculate Volume c) Increment, Overload ++ operator (both prefix & postfix) d) Decrement, Overload -- operator (both prefix & postfix) e) Overload operator == (to check equality of two boxes), as a friend function f) Overload Assignment operator g) Check if it is a Cube or cuboid Write a program which takes input from the user for length, breath and height to test the above class. 31. Create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file. 32. Write a program to retrieve the student information from file created in previous



	question and print it in following format: Roll No. Name Marks 33. Copy the contents of one text file to another file, after removing all whitespaces. 34. Write a function that reverses the elements of an array in place. The function must accept only one pointer value and return void. 35. Write a program for exception handling.

Part C - Learning Resources

Text Books, Reference Books, Other Resources

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2. Let us C: Yashwant Kanetkar, BPB Publications .
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5. Programming in C++, E. Balaguruswamy, Tata McGraw Hill.

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C/C++ different topics from SWAYAM/NPTEL

1. Introduction
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   https://onlinecourses.nptel.ac.in/noc22_cs103/preview
   https://www.youtube.com/watch?v=KG4hjVDw-p8&list=PLmp4ylk-B4KrM9uOEdvPIVFUkU3jNc6D2&index=2

2. Constant and Inline Function
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8. Access Specifiers
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https://www.w3schools.com/c/

11. C++ different topics from W3School
https://www.w3schools.com/CPP/default.asp

12. C different topics from Javatpoint
https://www.javatpoint.com/c-programming-language-tutorial

13. C++ different topics from Javatpoint
https://www.javatpoint.com/cpp-tutorial

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 50
Continuous Comprehensive Evaluation (CCE): Not Applicable
University Exam(UE): 50 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable

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Date: 03.06.2022

INDUSTRIAL MICROBIOLOGY

Paper	Title	Time	Marks
First	General Microbiology, Tools and Techniques	3 hrs.	50
Second	Molecular Biology, Biochemistry and Microbial Genetics	3 hrs.	50
	PRACTICAL (including sessionals)	4 hrs.	50 (40+10)

PAPER -

GENERAL MICROBIOLOGY, TOOLS AND TECHNIQUES M.M.50

I (paper code - 0826)

UNIT-1 History and development of Industrial Microbiology. Contributions of antony von Leeuwenhoek, Louis Pasteur, Robert Koch, Edward Jenner, Wakman, Alexandar Flaming.

UNIT-2 General characteristics and structure of Bacteria, Cyanobacteria, Fungi, Actinomycetes, Mycoplasms, Vinuses.

UNIT-3 Microscopy - Invention of Microscope, Compound microscope, Dark field, Fluorescent, Phase contrast and Electron microscope.

UNIT-4 Method of sterilization, culture media and isolation techniques. Methods of preservation of microbial cultures.

UNIT-5 Basic principles and usage - pH meter, Densitometer, Colorimeter, Spectrophotometry, Fluori-metry, Centrifugation - Principles and applications. Usage of Fermentation.

PRACTICALS

The Practical works will, in general be based on the prescribed syllabhus in theory and the candidates will be required to show the knowledge of the following :

1. Preparation of media, autoclaving and sterilization of glassware.
2. Isolation of Phytopathogens.
3. Isolation of Microorganisms from soil and water : Bacteria, Fungi, and Algae.
4. Purification of microbial cultures.
5. Camera Lucida Drawing.
6. Standard Plate count.
7. Heamocytometer.
8. Chromatographic techniques : Separation of amino acids by paper and thin layer chromatography.
9. Measurement of pH of fruit juice.
10. Estimation of cargohydrate by colorimeter.

BOOK RECOMMENDED :

1. General Microbiology, Vol. II by Power and Daginawala.
2. Microbiology by Pelczar, Reid and chan.
3. General Microgiology by Davis and Harper.
4. A Treatise on Media and Methods Used in Bacteriological Techniques by V. Iswarn.
5. Introductory Mycology by C.J. Alexopoulous & Mims.
6. Microbiology by P.D. Sharma.

PAPER - II
MOLECULAR BIOLOGY, BIOCHEMISTRY AND MICROBIAL GENETICS
(paper code - 0827)

M.M. 50

UNIT-1 Nucleic Acids - Structure of DNA and RNA(s), Replication of DNA, Synthesis of RNAs and their types, Genetic code, Concept of genes.

UNIT-2 Molecular Biology - Translation and Protein Synthesis, Operon Concept, CAMP CAP (Catabolic activator protein), Gene expression in Prokaryotes, Lac-Operon. Gene ragulation in Eukaryotes (Britton-Davison Model of Gene Expression).

UNIT-3 Genetic recombination in Bacteria - Transformation, Transduction and conjugation, Genetic Mapping, Extrachromosomal genetic material, Plasmids, Cosmids, Transposons, Overlapping genes, Silent genes and their evolutionary significance. Mutation -Molecular mechanism of mutation, Chemical and Physical Mutagens, Repair of Mutation Damage.

UNIT-4 Biochemistry - Classification of carbohydrates, Chemical structure and property of starch, Cellulose, Glycogen, Synthesis of Purines & Pyrimidine.
Lipids - Saturated and unsaturated fatty acids, Biosynthesis of fatty acids, Distribution and functions of lipids in microorganisms, Degradation of lipids by O < B and Co oxidation, Lipid peroxidation.

UNIT-5 Enzymes - Classification. Co-enzymes, Cofactors, Mechanism of enzyme action, Competitive and non-competitive inhibition. Allosteric regulations of enzymes, isoenzymes, factors contributing to catalytic efficiency of enzymes.

Amino acids - Classification of essential amino acids based on polarity. Acid-base properties and solubilities. Amino acid sequencing of proteins; Primary, Secondary and Tertiary structure.

PRACTICAL

The Practical work will, in general, be based on the syllabus prescribed in theory and the candidates will be required to show the knowledge of the following -

1. Isolation of antibiotic resistant bacteria.
2. Extimation of alkaline phosphatase activity.
3. Measurement of o<amylase activity in extra-cellular fraction of microbial cultures.
4. Estimation of glycogen in bacterial cells.
5. Measurement of cellulase activity by Viscometric technique.
6. Determination of cellulase and amylase activity by reducing sugar assay test.
7. Isolation of DNA.

29/7/12 29/7/12

BOOK RECOMMENDED :

1. General Microbiology, Vol. 1 by Power & Daginawala.
2. Bicrobial Biochemistry by Moat.
3. Principles of Biochemistry by Lehninger.
4. Outline of Biochemistry by Cohn and Stumph.
5. Biochemistry by Harper.
6. Text book of Biochemistry by Rama Rao.
7. Text book of Biochemistry by O.P. Agrawal.

29/7/12 29/7/12

BIO CHEMISTRY

PAPER-I

BIOMOLECULES M.M. 50

(paper code - 0832)

UNIT-I

Introduction to Biochemistry, water as a biological solvent, weak acids and bases, pH, buffers, Henderson-Hasselbalch equation, physiological buffers, fitness of the aqueous environment for living organisms.

CARBOHYDRATES

Structure of monosaccharides. Stereoisomerism and optical isomerism of sugars.

Reactions of aldehyde and ketone groups. Ring structure and anomeric forms, mutarotation. Reactions of sugar due to hydroxyl groups. Important derivatives of monosaccharides, disaccharides and trisaccharides (structure, occurrence and functions of important ones). Structure ocurrence and biological importance of monosaccharides, oligosaccharides and polysaccharides e.g. Cellulose, Chitin, agar, algenic acids, pectins, proteoglycans, sialic acids, blood group polysaccharides, glycogen and starch. Bacterial cell wall polysaccharides etc. Glycoproteins.

UNIT-II Lipids

Definition and classification. Fatty acids : introduction, classification, nomenclature, structure and properties of saturated and unsaturated fatty acids. Essential fatty acids, prostaglandins. Triacylglycerols: nomenclature, physical properties. chemical properities and characterzation of fats - hydrolysis, saponification value, rancidity of fats,

Reichert-Meissel number and reaction of glycerol. Biological significance of fats. Glycerophospholipids (lecithins, lysolecithins, cephalins, phosphatidyl serine, phos-phatidyl inositol, plasmalogens), sphingomyelins, glycolipids - cerebrosides, ganglio-sides. Properties and functions of phospholipids, isoprenoids and sterols.

UNIT-III Proteins

Introduction, classification based on solubility, shape, composition and functions.

Aminoacids: common structural features, stereo-isomerism and RS system of designating optical isomers, classification and chemical properties, titration of amino acids, separation of amino acids. Essential amino acids.

Peptides: structure of peptide bond, chemical synthesis of polypeptides - protection and deprotection of N-terminal, and C-terminal ends and functional groups in the side-chains, formation of peptide bonds, condensing agents, strategy of chemical synthesis, Merrifield solid-phase peptids sysnthesis. Determination of the amino acid sequence of a polypeptide chain, specific chemical and enzymatic cleavage of a polypeptide chains and separation of peptides. Protein structure: levels of structure in protein architecture, primary structure of proteins, secondary structure of proteins helix and pleated sheets, tertiary structure of proteins, forces stabilizing the tertiary structure and quaternary structure of proteins. Denaturation and renaturation of proteins. Behaviour of proteins in solutions, salting in and salting out of proteins.

Structure and biological functions of fibrous proteins (keratins, collagen and elastin), glooular proteins (hemoglobin, myoglobin), lipoproteins, metalloproteins, glycoproteins and nucleoproteins.

UNIT-IV Nature of genetic material: evidence that DNA is the genetic material, Composition of RNA and DNA, generalized structural plan of nucleic acids, nomenclature used in writing structure of nucleic acids, features of DNA double helix. Denaturation and annealing of DNA, structure and roles of different types of RNA Size of DNA in procaryotic and eucaryotic cells, central dogma of molecular biology, Gene, Genome, chromosome.

UNIT-V Porphyrins

Prophyrins: Porphyrin nucleus and classification of porphyrins. important Metalloporphyrins occurring in nature. Detection of porphyrins spectrophotometrically and by fluores-cence. Bile pigments - chemical nature and their physiological significance.

24.7.2017 24.7.17 24.7.17 24/7/17 24.7.17

PAPER - II

(paper code - 0833)

BIOPHYSICAL AND BIOCHEMICAL TECHNIQUES M.M. 50

UNIT-I Concepts of Bioenergetics

Principles of thermodynamics and their applications in biochemistry - introduction, thermodynamic system, thermodynamic state functions, first and second laws of thermodynamics, concept of free energy, standard free energy, determination of G for a reaction, relation between equilibrium constant and standard free energy change, biological standard state and standard free energy change in coupled reactions.

Biological oxidation-reduction reactions - introduction, redox potentials, relation between standard reduction potentials and free enegy change (dervations and numericals included). High-energy phosphate compounds - introduction, phosphate^{32} P, ^{35} S, 14 C and 3H group transfers-free energy of hydrolysis of ATP and sugar phosphates along with reasons for high G.

UNIT-II Hydrodynamic Methods

Sedimentation - sedimentation velocity, preparative and analytical ultracentrifugation techniques. determination of molecular weight by hydrodynamic methods (derivations excluded and numericals included).

Measurement of pH

Principles of glass and reference electrodes, types of electrodes, complications of pH measurement (dependence of pH on ionic strength, electrode contamination and sodium error) and use of pH paper.

UNIT-III Radioisotopic Techniques

Types of radioisotopes used in Biochemistry, units of radioactivity measurements, techniques used to measure radioactivity (gas ionization and liquid scintillation counting), nuclear emulsions used in biological studies (pre-mounted, liquid and stripping), isotopes commonly used in biochemical studies-Autoradiography. Biological hazards of radiation and safety measures in handling radioisotopes. Biological application.

UNIT-IV Chromatography

General principles and applications of :

1. Adsorption chromatography
2. Ion-exchange chromatography
3. Thin-layer chromatography
4. Molecular-sieve chromatography
5. Hydrophobic chromatography
6. Gas-liquid chromatography
7. HPLC
8. Affinity chromatography
9. Paper chromatography

Electrophoresis

Basic principles of agarose electrophoresis, PAGE and SDS-PAGE, Two-dimensional electrophoresis, its importance. Isoelectrofocussing.

UNIT-V Spectroscopic Techniques

Beer-Lambert law, light absorption and its transmittance, determination and application of extinction coefficient, application of visible and UV spectroscopic techniques (structure elucidation and numericals excluded). Principle and application of NMR, ESR, Mass spectroscopy. Fluorescent and emission spectroscopy.

Immunological Techniques

Immunodiffusion, immunoelectrophoresis, radioimmunoassay, ELISA, immunofluores-cence.

PRACTICAL **M.M. 50**

1. Preparation of standard buffers and determination of pH of a solution.
2. Qualitative tests for :
   a. Carbohydrates
   b. Proteins and amino acids
   c. Lipids
3. Determination of saponification value and iodine number of fats.
4. Extimation of ascorbic acid.
5. Titration curve for amino acids and determination of pK value;
6. Verification of Beer-Lambert's law.
7. Estimation of
   i) Carbohydrate by anthrone method.
   i) Blood glucose by the methods (a) Folin-Wu, (b) Nelson-Somogyi
8. Estimation of amino acids by ninhydrin method.
9. Isolation and assay of glycogen from rat liver.
10. i) Extraction of total lipids by Folch method
    i) Estimations of food adulterant.
11. Estimation of DNA and RNA.
12. Separation of sugars using paper chromatography.

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	BIOC-1T		
2	Course Title	**Chemistry of Biomolecules**		
3	Course Type	Theory		
4	Pre-requisite (if any)	As per Govt. norms		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Understand on fundamentals of biological molecules. • Understand the concept of proteins, carbohydrates, lipids, vitamins and Poryphyrins. • Understand the types and structures of proteins, carbohydrates, lipids, vitamins and Poryphyrins. • Identify their chemical elements and the difference between simple sugars and complex • On the food labels, what do sugar or sugar alcohol, and fiber refer to? • Summarize the function of proteins and recognize the importance of the three dimensional shape of a protein on its function and the role of non-covalent bonds in maintaining the shape of a protein. • Explain protein denaturation and the effect of heat on protein structure and function.		
6	Credit Value	Theory: 4		
7	Total Marks	**Max. Marks:** 50		**Min Passing Marks:** 17

Part B: Content of the Course		
Total No. of Teaching – Periods- 60 / Hours – 40		
Unit	**Topics**	**No. of Period / Hour**
1	**The foundations of biochemistry:** Cellular and chemical foundations of life. Introduction to Biomolecules. Micromolecules and Macromolecules. **Water:** Unique properties, weak interactions in aqueous systems, ionization of water, buffers, water as a reactant and fitness of the aqueous environment. **Introduction to amino acids, peptides and proteins** Amino acids and their properties - Structure and classification of Amino acids, physical, chemical and optical properties of amino acids hydrophobic, polar and charged. Biologically important peptides - hormones, antibiotics and growth factors. Determination of the amino acid sequence of a polypeptide chain, specific chemical and enzymatic cleavage of a polypeptide, Structure of proteins, Multimeric proteins, conjugated proteins and metalloproteins. Diversity of function	12 Periods / 08 Hours
2	**Carbohydrates and glycobiology :** Monosaccharides - structure of aldoses and ketoses, ring structure of sugars, conformations of sugars, mutarotation, anomers, epimers and enantiomers, structure of biologically important sugar derivatives, oxidation of sugars. Formation of disaccharides, reducing and nonreducing disaccharides. **Polysaccharides –** homo- and heteropolysaccharides, structural and storage polysaccharides. Structure and role of proteoglycans, glycoproteins and glycolipids	12 Periods / 08 Hours

	(gangliosides and lipopolysaccharides). Carbohydrates as informational molecules, working with carbohydrates	
3	**Lipids:** Building blocks of lipids - fatty acids, glycerol, ceramide. Storage lipids - triacyl glycerol and waxes. **Structural lipids in membranes** – glycerophospholipids, galactolipids and sulpholipids, sphingolipids and sterols, structure, distribution and role of membrane lipids. Plant steroids. Lipids as signals, cofactors and pigments	12 Periods / 08 Hours
4	**Nucleotides** - structure and properties. **Nucleic acid structure** – Watson-Crick model of DNA. **Structure of major species of RNA** - mRNA, tRNA and rRNA. **Nucleic acid chemistry** - UV absorption, effect of acid and alkali on DNA. **Other functions of nucleotides** - source of energy, component of coenzymes, second messengers.	12 Periods / 08 Hours
5	**Vitamins:** Structure and active forms of water soluble and fat soluble vitamins, deficiency diseases and symptoms, hypervitaminosis **Porphyrins-**Poryphyrin nucleus and classification of porphyrins, important metalloporphyrins occurring in nature. Detection of porphyrins spectrophotometrically and by fluorescence methods.	12 Periods / 08 Hours
Keywords: Biomolecules, nucleotides, proteins, carbohydrates, lipids, vitamins, Poryphyrins		

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Lehninger: Principles of Biochemistry (2013) 6th ed., Nelson, D.L. and Cox, M.M., W.H.Freeman and Company (New York), ISBN:13: 978-1-4641-0962-1 / ISBN:10:1-4292-3414-8.
2. Physical Biochemistry (2009) 2nd ed., Sheehan, D., Wiley-Blackwell (West Sussex),ISBN: 9780470856024 / ISBN: 9780470856031.
3. The Tools of Biochemistry (1977; Reprint 2011) Cooper, T.G., Wiley India Pvt. Ltd. (New Delhi), ISBN: 978-81-265-3016-8.
4. Textbook of Biochemistry with Clinical Correlations (2011) 7th ed., Devlin, T.M., John Wiley & Sons, Inc. (New York), ISBN:978-0-470-28173-4.
5. G. L. Zubay Biochemistry , Wm.C. Brown Publishers, 1998
6. Jeremy M. Berg,, Lubert Stryer, John Tymoczko, Gregory Gatto, Biochemistry, WH Freeman; 9th ed. 2019.
7. Garrett and Grisham Biochemistry, Brooks/Cole; 6th edition, 2016
8. D. Voet and J C Voet Principles of Biochemistry, Wiley; 5th edition

E-learning Resources

https://ncert.nic.in/textbook/pdf/lech205.pdf
https://www.pdfdrive.com/biomolecules-books.html
https://schools.aglasem.com/ncert-books-class-11-biology-chapter-9/
https://swayam.gov.in/
https://www.edx.org/search?q=biomolecules&tab=course
https://britannica.com
https://en.wikibooks.org/wiki/Biochemistry
https://nptel.ac.in
https://drive.google.com/file/d/0B9Hi1Cy7Y34ERXJJXzRGSjd5bm8/view?resourcekey=0-SgrHs9064AQKVk4Go-65mw

Part D: Assessment and Evaluation		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): Not Applicable University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable
External assessment University Exam (UE)		----------
Any remarks/ Suggestions: -		

Declaration

Syllabus is framed as per the ToR

Name	Signature
Dr. DSVGK Kaladhar, Chairman BOS, Biochemistry, Professor, Atal Bihari Vajpayee University, Bilaspur	
Dr. Mrigendra Dwivedi, Chairman BOS, Biochemistry, Pt.Ravishankar Shukla University Assistant Professor, Biochemistry, Govt Nagarjuna PG College of Science, Raipur	03/06/2022
Dr. Harit Jha, Subject expert, Assistant Professor, Biotechnology, Guru Ghasidas University, Bilaspur	

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	BIOC-2T		
2	Course Title	**Biochemical Techniques**		
3	Course Type	Theory		
4	Pre-requisite (if any)	As per Govt. norms		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Describe basic concepts of biophysics. • Discuss canonical and non-canonical structures of Biomolecules • Explain basic ideas of diffusion, thermodynamics and kinetics in the context of biological processes. • Differentiate working principle, instrumentation and applications of various bio-analytical instruments. • Outline formation and diffusion pattern of stripes on animals		
6	Credit Value	Theory: 4		
7	Total Marks	**Max. Marks:** 50	**Min Passing Marks:** 17	

Part B: Content of the Course		
Total No. of Teaching – Periods- 60 / Hours – 40		
Unit	**Topics**	**No. of Lectures**
1	**Safety practices in the laboratory**. Preparation and storage of solutions. Concepts of solution concentration and storing solutions. Quantitative transfer of liquids. Concept of a buffer, Henderson-Hasselbach equation, working of a pH meter	12 Periods / 08 Hours
2	**Microscopy:** Simple microscopy, phase contrast microscopy, florescence and electron microscopy (TEM and SEM), pH meter	12 Periods / 08 Hours
3	**Preliminary Biochemical Techniques:** Absorption and emission spectroscopy, Principle and law of absorption fluorimetry, colorimetry, spectrophotometry (visible, UV, infrared), centrifugation, cell fractionation techniques, isolation of sub-cellular organelles and particles	12 Periods / 08 Hours
4	**Introduction to the principle of chromatography**: Paper chromatography, thin layer chromatography, column chromatography: silica and gel filtration, affinity and ion exchange chromatography, gas chromatography, HPLC.	12 Periods / 08 Hours
5	**Advanced Techniques:** Introduction to electrophoresis. Starch-gel, polyacrylamide gel (native and SDS-PAGE), agarose-gel electrophoresis, pulse field gel electrophoresis, immuno- electrophoresis, isoelectric focusing, Western blotting. Introduction to Biosensors and Nanotechnology and their applications. Radioactivity measurement and applications. introduction and importance of virtual labs in biochemistry	12 Periods / 08 Hours
Keywords: pH meter, Microscopy, Spectroscopy, Chromatography, Electrophoresis		

Part C - Learning Resource
Text Books, Reference Books, Other Resources

Suggested Readings:

1. Lehninger: Principles of Biochemistry (2013) 6th ed., /Nelson, D.L. and Cox, M.M., W.H. Freeman and Company (New York), ISBN:13: 978-1-4641-0962-1 / ISBN:10:1-4292- 3414-8.
2. K Wilson and John Walker Practical Biochemistry: Principles & Techniques
3. RF Boyer Biochemistry Laboratory: Modern Theory & Techniques
4. S Carson, H Miller and D Scott Molecular Biology Techniques: A Classroom Laboratory Manual
5. Physical biochemistry by D Friefelder , WH Freeman & Co., USA..
6. Outlines of biochemistry by Eric E Conn, PK Stumpf, G Bruening and Ray H Doi , John Wiley & sons NY
7. Chromatography : A laboratory handbook of chromatography and electrophoretic methods by Erich Heftman, van Nostrand Reinhold, NY.

learning Resources

https://britannica.com
https://en.wikibooks.org/wiki/Biochemistry
https://nptel.ac.in

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 50
Continuous Comprehensive Evaluation (CCE): Not Applicable
University Exam(UE): 50 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable
External assessment University Exam (UE)		
Any remarks/ Suggestions: -		

Declaration

Syllabus is framed as per the ToR

Name	Signature
Dr. DSVGK Kaladhar, Chairman BOS, Biochemistry, Professor, Atal Bihari Vajpayee University, Bilaspur	3.6.22
Dr. Mrigendra Dwivedi, Chairman BOS, Biochemistry, Pt.Ravishankar Shukla University Assistant Professor, Biochemistry, Govt Nagarjuna PG College of Science, Raipur	3/06/2022
Dr. Harit Jha, Subject expert, Assistant Professor, Biotechnology, Guru Ghasidas University, Bilaspur	

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session: **2022-2023**
1	Course Code	**BIOC-1P**		
2	Course Title	**LAB 1 : Chemistry of Biomolecules and Biochemical techniques lab**		
3	Course Type	**Practical**		
4	Pre-requisite (if any)	As per Govt. norms		
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: • Describe the basic lab requirements and their uses. • Examine various instruments using in separation and isolation of various analytical compound. • Analyze the characteristics of the compound on the basis of their pH. • Examine different components present in the extract of radish leaves by using chromatography technique. • Analysis independently of various biomolecules in the laboratory. • Demonstrate the effect of inorganic compound and its percent purities in various types of sample. • Analyze characteristics of UV absorption spectra of by different methods in samples in different biomolecules. • Examine quality of the lipids by different parameters. • Examine quantity of the nucleic acid present in the sample. • Analyze characteristics and quantity of protein by different methods.		
6	**Credit Value**	**Practical: 2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
Total No. of Teaching Hours – 20 / 30 Periods	
Tentative Practical List	**Note:** This is tentative list; the teachers concern can add more practical's as per requirement. 1. Safety measures in laboratories. 2. Preparation of normal and molar solutions. 3. Preparation of buffers. 4. Determination of pKa of acetic acid and glycine. 5. Qualitative tests for carbohydrates, lipids, amino acids, proteins and nucleic acids. 6. Separation of amino acids/ sugars/ bases by thin layer chromatography. 7. Estimation of vitamin 8. Native gel electrophoresis of proteins 9. SDS-polyacrylamide slab gel electrophoresis of proteins under reducing conditions. 10. Preparation of protoplasts from leaves. 11. Separation of amino acids by paper chromatography. 12. To identify lipids in a given sample by TLC. 13. Separation of plant pigments by column chromatography 14. Differential centrifugation for organelle separation 15. Verification of Beer-Lambert law 16. Colorimetric estimation of sugars, aminoacids and proteins

Part C - Learning Resource
Text Books, Reference Books, Other Resources
Suggested Readings: 1. Lehninger: Principles of Biochemistry (2013) 6th ed., /Nelson, D.L. and Cox, M.M., W.H. Freeman and Company (New York), ISBN:13: 978-1-4641-0962-1 / ISBN:10:1-4292- 3414-8. 2. Textbook of Biochemistry with Clinical Correlations (2011) 3. Karp, G. 2010. Cell and Molecular Biology: Concepts and Experiments. 6th Edition. John Wiley& Sons. Inc. 4. De Robertis, E.D.P. and De Robertis, E.M.F. 2006. Cell and Molecular Biology. 8th edition. Lippincott Williams and Wilkins, Philadelphia. 5. Cooper, G.M. and Hausman, R.E. 2009. The Cell: A Molecular Approach. 5th edition. ASM Press & Sunderland, Washington, D.C.; Sinauer Associates, MA. 6. Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. 2009 The World of the Cell.7th edition. Pearson Benjamin Cummings Publishing, San Francisco. **E-learning Resources:** https://britannica.com https://en.wikibooks.org/wiki/Biochemistry https://nptel.ac.in

Part D: **Assessment and Evaluation**		
Suggested Continuous Evaluation Methods: Maximum Marks: 50 Continuous Comprehensive Evaluation (CCE): Not Applicable University Exam(UE): 50 Marks		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable
External assessment University Exam (UE)		

Declaration

Syllabus is framed as per the ToR

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Dr. DSVGK Kaladhar, Chairman BOS, Biochemistry, Professor, Atal Bihari Vajpayee University, Bilaspur	
Dr. Mrigendra Dwivedi, Chairman BOS, Biochemistry, Pt.Ravishankar Shukla University Assistant Professor, Biochemistry, Govt Nagarjuna PG College of Science, Raipur	3/06/2022
Dr. Harit Jha, Subject expert, Assistant Professor, Biotechnology, Guru Ghasidas University, Bilaspur	

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	BIOT-1T		
2	Course Title	**Biochemistry, Biostatistics and Computers**		
3	Course Type	Theory		
4	Pre-requisite (if any)	As per Govt. norms		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Understand on fundamentals of biological molecules. • Understand the concept of proteins, carbohydrates, lipids, vitamins and nucleic acid. • Understand the types and structures of proteins, carbohydrates, lipids, vitamins and nucleic acid.		
6	Credit Value	Theory: 4		
7	Total Marks	**Max. Marks:** 50	**Min Passing Marks:** 17	

Part B: Content of the Course		
Total No. of Teaching – Periods- 60 / Hours – 40		
Unit	**Topics**	**No. of Period / Hour**
1	1. Introduction to Biochemistry: History, Scope and Development. 2. Carbohydrates: Classification, Structure and Function of Mono, Oligo and Polysaccharides. 3. Lipids: Structure, Classification and Function. 4. pH, pK, buffer, covalent and non-covalent bond.	12 Periods / 08 Hours
2	1. Amino acids and Proteins: Classification, Structure and Properties of amino acids, Types of Proteins and their Classification and Function. 2. Enzymes: Nomenclature and Classification of enzyme, Mechanism of enzyme action, Enzyme Kinetics and Factors affecting the enzymes action. Immobilization of enzyme and their application. 3. Enzyme inhibition: Competitive and non-competitive, feedback mechanism	12 Periods / 08 Hours
3	1. Carbohydrates, Proteins and Lipid Metabolism - Glycolysis, Glycogenesis, Glyconeogenesis, Glycogenolysis and Krebs cycle. Electron Transport Chain, β-oxidation of Fatty acids and Urea cycle 2. Vitamins - Structure, Classification and Function	12 Periods / 08 Hours
4	1. Scope of Biostatistics- types of data: graphical and tabular presentation, Collection of data-sampling techniques 2. Measures of Central Tendency: Mean, Median and Mode and Standard Deviation. 3. Probability Calculation: Addition and multiplication rule. 4. Chi square test, Correlation coefficient and regression lines, ANOVA	12 Periods / 08 Hours
5	1. Computers - Organization of computer, Digital and Analogue Computers, Concept of Hardware and Software, computer languages – high and low level 2.Word, spreadsheet and presentation software 3. Application of computer in online classrooms, meeting, test and e-library	12 Periods / 08 Hours
Keywords: Biomolecules, amino acids, carbohydrates, lipids, vitamins, Biostatistics, Computers		

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Lehninger Principles of Biochemistry (4th Ed.) Nelson, D., and Cox, M.; W.H. Freeman and Company, New York, 2005
2. Todd and Howards Mason (2004) Text book of Biochemistry, Fourth Edition
3. Lubert Stryer and Berg ((2004) Biochemistry, Fifth Edition
4. Diana Rain, Marni Ayers Barby - (2006) Textbook on Q level Programming. 4th Edition.
5. Karl Schwartz: (2006) Guide of Micro Soft. Marina Raod, 4th Edition.
6. E Balaguruswamy by Programming in BASIC (1991).
7. RC Campbell by Statistics for Biologists. .
8. P Cassel et al by Inside Microsoft Office,
9. AC Wardlaw by Practical Statistics for Experimental Biologists,
10. JH Zar by Bio-statistical analysis
11. RR Sokal FJ Rohlf by Introduction to Biostatistics
12. L Y Kun (2003) Microbial Biotechnology: Principles and applications
13. Khan and Khanum (1994) Fundamental of Biostastics
14. Berg, J. M., Tymoczko, J. L. and Stryer, L.(2006). Biochemistry. 6th Edition. W.H Freeman & Co.
15. Buchanan, B., Gruissem, W. and Jones, R. (2000) Biochemistry and Molecular Biology of Plants. American Society of Plant Biologists.
16. Hopkins, W.G. and Huner, P.A. (2008) Introduction to Plant Physiology. John Wiley and Sons.
17. Salisbury, F.B. and Ross, C.W. (1991) Plant Physiology, Wadsworth Publishing Co. Ltd.
18. Le CT (2003) Introductory biostatistics. 1st edition, John Wiley, USA
19. Glaser AN (2001) High YieldTM Biostatistics. Lippincott Williams and Wilkins, USA
20. DSVGK Kaladhar, Molecular Biochemistry (2018) RBSA Publishers ISBN 9788176117708.
21. Edmondson A and Druce D (1996) Advanced Biology Statistics, Oxford University Press.
22. Danial W (2004) Biostatistics: A foundation for Analysis in Health Sciences, John Wiley and Sons Inc.

E-learning Resources

https://ncert.nic.in/textbook/pdf/lech205.pdf
https://www.pdfdrive.com/biomolecules-books.html
https://swayam.gov.in/
https://www.edx.org/search?q=biomolecules&tab=course
https://britannica.com
https://en.wikibooks.org/wiki/Biochemistry
https://nptel.ac.in

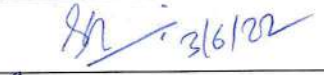
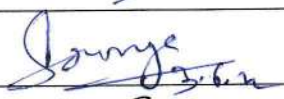
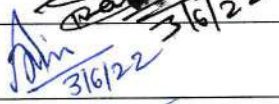
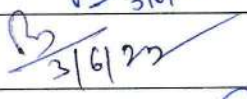
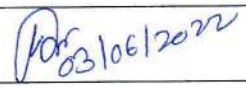
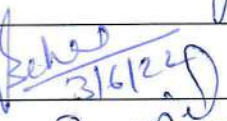
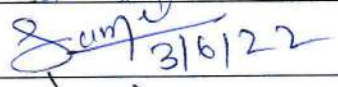
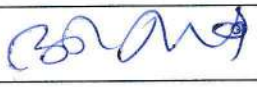
Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 50
Continuous Comprehensive Evaluation (CCE): Not Applicable
University Exam(UE): 50 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable
External assessment University Exam (UE) Time		As per Govt. norms
Any remarks/ Suggestions: -		

Declaration

Syllabus is framed as per the ToR

Name	Signature
Dr DSVGK Kaladhar, Prof & Chairperson CBoS Biotechnology, UTD ABVV	
Dr Pramod Kumar Mahish, Asst. Professor Govt. Digvijay College Rajnandgaon	
Dr Saumya Khare, Asst Prof, Kalyan PG. College Bhilai	
Dr Shubha Thakur, Asst Prof, St. Thomas College Bhilai	
Dr Akanksha Jain, Asst Prof. Shri Shankaracharya Mahavidyalaya, Bhilai	
Dr Arun Kumar Kashyap, Asst Professor, Govt. E raghavendra Rao PG. Science College Bilaspur	
Dr Tarun Kumar Patel, Asst Professor, Sant Guru Ghasidas PG. College Kurud	
Dr Neha Behar, Asst Prof. DLS PG. College Bilaspur	
Dr Sanjana Bhagat, Asst Prof. Govt Ngarjuna PG. Science College, Raipur	
Dr Kamlesh Shukla, PRSU, Raipur	
Dr Ashish Kumar, Sant Gahira Guru Vishwavidyalay Sarguja	

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session:**2022-2023**
1	Course Code	BIOT-2T		
2	Course Title	**Cell Biology, Genetics and Microbiology**		
3	Course Type	Theory		
4	Pre-requisite (if any)	As per Govt. norms		
5	Course Learning. Outcomes (CLO)	At the end of this course, the students will be able to: • Understand on fundamentals of cellular organization, microorganisms and inheritance • Understand the concept of genetics and microbial fundamentals • Understand the types of cell organelles and various microbes		
6	Credit Value	Theory: 4		
7	Total Marks	**Max. Marks:** 50	**Min Passing Marks:** 17	

Part B: Content of the Course		
Total No. of Teaching – Periods- 60 / Hours – 40		
Unit	**Topics**	No. of Period / Hour
1	1. Cell theory and its modern interpretation 2. Diversity of Cell shape and size. 3. Prokaryotic cell structure: Function and ultra-structure of cell (Gram positive and Gram negative Bacteria), Flagella, Pilli, Endospore and Capsule. 4. Eukaryotic cell: Plants and animal.	12 Periods / 08 Hours
2	1. Cytoplasm: Structure and Functions of Endoplasmic reticulum, Ribosome, Golgi complex, Lysosomes, Nucleus, Mitochondria, Chloroplast and Chromosomes 2. Cytoskeleton: Microtubules, Microfilaments and Intermediate filaments. 3. Cell division: Mitosis and Meiosis. Cell cycle 4. Programmed Cell Death.	12 Periods / 08 Hours
3	1. Mendel's Laws of Inheritance. Non-mendelian inheritance 2. Linkage and Crossing over. 3. Chromosome variation in number and structure: Deletion, Duplication, Translocation, Inversion and Aneuploidy, Euploidy (Monoploidy, Polyploidy and its importance).	12 Periods / 08 Hours
4	1. History, Scope and Development of Microbiology. 2. Basic techniques of Microbial Culture 3. Microbial Growth & Nutrition of Bacteria: Isolation, media sterilization-physical and chemical agents, pure culture- pour plate method, streak plate method and spread plate method. 4. General features and Economic importance of Fungi, bacteria and cyanobacteria.	12 Periods / 08 Hours
5	1. Bacterial Reproduction: Conjugation, Transduction and Transformation. 2. Mycoplasma – History, Classification, Structure reproduction & Diseases. 3. Viruses – Basic features, Structure, Classification, Multiplication and Bacteriophages (Morphology, life cycle, infection and medicinal importance)	12 Periods / 08 Hours
Keywords: Cell, Cytoplasm, Law of inheritance, Gene interaction, Microbial culture, microbial reproduction.		

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings:

1. C.B. Power- Cell biology, First Edition (2005), Himalaya Publishing House.
2. Gereld Karp - Dell and molecular biology, 4th Edition (2005)
3. P.K. Gupta - Cell and molecular biology, Second Edition (2003), Rastogi publications.
4. S.S. Purohit - Microbiology : Fundamentals and Applications, 6th Edition (2004)
5. R.C. Dubey and D.K. Maheshwari: Practical Microbiology. S.Chand Publication.
6. Tortora, Funke and Case - Microbiology, An introduction, sixth Edition (1995), Benjamin/Cummings Publishing Company.
7. Prescott, Harlyey and Klein - Microbiology, Third Edition, Wm. C. Brown Publishers (1996).
8. P. Chakraoborthy - Textbook of microbiology, Second Edition (2007).
9. Microbial Genetics, David Freifelder, John F Cronan, Stanley R Maloy, Jones and Bartlett Publishers.
10. Elements of Human Genetics. I.I. cavalla-Sfoeza, WA Benjamin Advanced Book Program.

E-learning Resources

https://www.easybiologyclass.com/topic-genetics/
https://freebookcentre.net/medical_text_books_journals/genetics_ebooks_online_texts_download.html
https://britannica.com
https://en.wikibooks.org/wiki/Biochemistry
https://nptel.ac.in

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 50
Continuous Comprehensive Evaluation (CCE): Not Applicable
University Exam(UE): 50 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable
External assessment University Exam (UE) Time 3Hours		As per Govt. norms.

Any remarks/ Suggestions: -

Declaration

Syllabus is framed as per the ToR

Name	Signature
Dr DSVGK Kaladhar, Prof & Chairperson CBoS Biotechnology, UTD ABVV	3/6/22
Dr Pramod Kumar Mahish, Asst. Professor Govt. Digvijay College Rajnandgaon	3/6/22
Dr Saumya Khare, Asst Prof, Kalyan PG. College Bhilai	
Dr Shubha Thakur, Asst Prof, St. Thomas College Bhilai	3/6/22
Dr Akanksha Jain, Asst Prof. Shri Shankaracharya Mahavidyalaya, Bhilai	3/6/22
Dr Arun Kumar Kashyap, Asst Professor, Govt. E raghavendra Rao PG. Science College Bilaspur	3/6/22
Dr Tarun Kumar Patel, Asst Professor, Sant Guru Ghasidas PG. College Kurud	03/06/2022
Dr Neha Behar, Asst Prof. DLS PG. College Bilaspur	
Dr Sanjana Bhagat, Asst Prof. Govt Ngarjuna PG. Science College, Raipur	3/6/22
Dr Kamlesh Shukla, PRSU, Raipur	
Dr Ashish Kumar, Sant Gahira Guru Vishwavidyalay Sarguja	

Part A: Introduction				
Program: **Certificate Course**		Class: **B.Sc. I Year**	Year: **2022**	Session: 2022-2023
1	Course Code	**BIOT-1P**		
2	Course Title	**LAB 1 : Microbiology and Biochemical Techniques**		
3	Course Type	**Practical**		
4	Pre-requisite (if any)	As per Govt. norms.		
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to: perform experiment related to biochemistry, microbial culture, statistical tools and computer applications		
6	**Credit Value**	**Practical: 2**		
7	**Total Marks**	**Max. Marks: 50**	**Min Passing Marks : 17**	

Part B: Content of the Course	
Total No. of Teaching Hours – 20 / 30 Periods	
Tentative Practical List	**Note:** This is tentative list; the teachers concern can add more practical's as per requirement. 1. Laboratory rules, Tools, Equipment and Other requirements in Microbiological laboratory. 2. Counting of bacteria by counting chamber, by plate count. 3. Preparation of media and cultivation techniques: (a) Basic liquid media (broth) (b) Basic Solid media, (agar slants and deep tubes) (c) Demonstration of selective and differential media (d) Isolation and enumeration of microorganisms (e) Isolation from air, water and Soil (f) Antibiotic sensitivity test 4. Smears and staining methods: (a) Preparation of bacterial smear (b) Gram Negative & Positive staining 5. Methods of obtaining pure cultures (a) Streak plate method (b) Pure plate method (c) Spread plate method (d) Broth cultures 6. Growth & Biochemical techniques (a) Determination of bacterial growth curve (b) Amylase production test (c) Cellulose production test (d) Estimation of Sugar in given solution (e) Extraction and separation of lipids (f) Estimation of proteins 7. Study of mitotic division 8. Biostatistics: (a) Graphical and tabular presentation of data (b) Problems on mean, mode and median. 9. Practical related to word, spreadsheet and presentation software

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Suggested Readings:

1. Tortora GJ, Funke BR and Case CL. (2008). Microbiology: An Introduction. 9th edition. Pearson Education
2. Madigan MT, Martinko JM, Dunlap PV and Clark DP. (2014). Brock Biology of Microorganisms. 14th edition. Pearson International Edition
3. Cappucino J and Sherman N. (2010). Microbiology: A Laboratory Manual. 9th edition. Pearson Education Limited
4. Atlas RM. (1997). Principles of Microbiology. 2nd edition. WM.T.Brown Publishers.
5. Pelczar MJ, Chan ECS and Krieg NR. (1993). Microbiology. 5th edition. McGraw Hill Book Company.
6. Stanier RY, Ingraham JL, Wheelis ML, and Painter PR. (2005). General Microbiology. 5th edition. McMillan.
7. Carter J and Saunders V(2007). Virology; principles and Applications. John Wiley and Sons
8. Flint SJ, Enquist, LW, Krug, RM, Racaniello, VR Skalka, AM (2004) Principles of Virology, Molecular Biology, Pathogenesis and Control.2nd edition.ASM Press
9. Shors Teri (2013) Understanding Viruses 2nd edition Jones and Bartlett Learning Burlington USA
10. Willey JM, Sherwood LM, and Woolverton CJ. (2013). Prescott's Microbiology. 9th edition. McGraw Hill Higher Education.
11. Dimmock, NJ, Easton, AL, Leppard, KN (2007). Introduction to Modern Virology. 6th edition, Blackwell Publishing Ltd.
12. Cann AJ (2012) Principles of Molecular Virology, Academic Press Oxford UK

E-learning Resources:

https://www.coursehero.com/file/83673254/Genetics-Lab-Notespdf/
https://britannica.com
https://en.wikibooks.org/wiki/Biochemistry
https://nptel.ac.in
https://learn.genetics.utah.edu/content/labs/
https://onlinelabs.in/biology

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50
Continuous Comprehensive Evaluation (CCE): Not Applicable
University Exam(UE): 50 Marks

Internal Assessment: Continuous Comprehensive Evaluation (CCE)	Class Test/Assignment/Presentation	Not Applicable
External assessment University Exam (UE)	As per Govt. norms.	

Declaration

Syllabus is framed as per the ToR

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