PHYSICS

I. Mathematical Methods of Physics

Dimensional analysis. Vector algebra and vector calculus. Linear algebra, matrices, Cayley-Hamilton Theorem. Eigenvalues and eigenvectors. Linear ordinary differential equations of first & second order, Special functions (Hermite, Bessel, Laguerre and Legendre functions). Fourier series, Fourier and Laplace transforms. Elements of complex analysis, analytic functions; Taylor & Laurent series; poles, residues and evaluation of integrals. Elementary probability theory, random variables, binomial, Poisson and normal distributions. Central limit theorem.

II. Classical Mechanics

Newton's laws. Dynamical systems, Phase space dynamics, stability analysis. Central force motions. Two body Collisions - scattering in laboratory and Centre of mass frames. Rigid body dynamics-moment of inertia tensor. Non-inertial frames and pseudoforces. Variational principle. Generalized coordinates. Lagrangian and Hamiltonian formalism and equations of motion. Conservation laws and cyclic coordinates. Periodic motion: small oscillations, normal modes. Special theory of relativity-Lorentz transformations, relativistic kinematics and mass–energy equivalence.

III. Electromagnetic Theory

Electrostatics: Gauss's law and its applications, Laplace and Poisson equations, boundary value problems. Magnetostatics: Biot-Savart law, Ampere's theorem. Electromagnetic induction. Maxwell's equations in free space and linear isotropic media; boundary conditions on the fields at interfaces. Scalar and vector potentials, gauge invariance. Electromagnetic waves in free space. Dielectrics and conductors. Reflection and refraction, polarization, Fresnel's law, interference, coherence, and diffraction. Dynamics of charged particles in static and uniform electromagnetic fields.

IV. Quantum Mechanics

Wave-particle duality. Schrödinger equation (time-dependent and time-independent). Eigenvalue problems (particle in a box, harmonic oscillator, etc.). Tunneling through a barrier. Wave-function in coordinate and momentum representations. Commutators and Heisenberg uncertainty principle. Dirac notation for state vectors. Motion in a central potential: orbital angular momentum, angular momentum algebra, spin, addition of angular momenta; Hydrogen atom. Stern-Gerlach experiment. Time-independent perturbation theory and applications. Variational method. Time dependent perturbation theory and Fermi's golden rule, selection rules. Identical particles, Pauli exclusion principle, spin-statistics connection.

V. Thermodynamic and Statistical Physics

Laws of thermodynamics and their consequences. Thermodynamic potentials, Maxwell relations, chemical potential, phase equilibria. Phase space, micro- and macro-states. Micro-canonical, canonical

and grand-canonical ensembles and partition functions. Free energy and its connection with thermodynamic quantities. Classical and quantum statistics. Ideal Bose and Fermi gases. Principle of detailed balance. Blackbody radiation and Planck's distribution law.

VI. Electronics and Experimental Methods

Semiconductor devices (diodes, junctions, transistors, field effect devices, homo- and hetero-junction devices), device structure, device characteristics, frequency dependence and applications. Opto-electronic devices (solar cells, photo-detectors, LEDs). Operational amplifiers and their applications. Digital techniques and applications (registers, counters, comparators and similar circuits). A/D and D/A converters. Microprocessor and microcontroller basics.

Data interpretation and analysis. Precision and accuracy. Error analysis, propagation of errors. Least squares fitting,

PART 'B'

I. Mathematical Methods of Physics

Green's function. Partial differential equations (Laplace, wave and heat equations in two and three dimensions). Elements of computational techniques: root of functions, interpolation, extrapolation, integration by trapezoid and Simpson's rule, Solution of first order differential equation using Runge-Kutta method. Finite difference methods. Tensors. Introductory group theory: SU(2), O(3).

II. Classical Mechanics

Dynamical systems, Phase space dynamics, stability analysis. Poisson brackets and canonical transformations. Symmetry, invariance and Noether's theorem. Hamilton-Jacobi theory.

III. Electromagnetic Theory

Dispersion relations in plasma. Lorentz invariance of Maxwell's equation. Transmission lines and wave guides. Radiation- from moving charges and dipoles and retarded potentials.

IV. Quantum Mechanics

Spin-orbit coupling, fine structure. WKB approximation. Elementary theory of scattering: phase shifts, partial waves, Born approximation. Relativistic quantum mechanics: Klein-Gordon and Dirac equations. Semi-classical theory of radiation.

V. Thermodynamic and Statistical Physics

First- and second-order phase transitions. Diamagnetism, paramagnetism, and ferromagnetism. Ising model. Bose-Einstein condensation. Diffusion equation. Random walk and Brownian motion. Introduction to nonequilibrium processes.

VI. Electronics and Experimental Methods

Linear and nonlinear curve fitting, chi-square test. Transducers (temperature, pressure/vacuum, magnetic fields, vibration, optical, and particle detectors). Measurement and control. Signal conditioning and recovery. Impedance matching, amplification (Op-amp based, instrumentation amp, feedback), filtering

and noise reduction, shielding and grounding. Fourier transforms, lock-in detector, box-car integrator, modulation techniques.

High frequency devices (including generators and detectors).

VII. Atomic & Molecular Physics

Quantum states of an electron in an atom. Electron spin. Spectrum of helium and alkali atom. Relativistic corrections for energy levels of hydrogen atom, hyperfine structure and isotopic shift, width of spectrum lines, LS & JJ couplings. Zeeman, Paschen-Bach & Stark effects. Electron spin resonance. Nuclear magnetic resonance, chemical shift. Frank-Condon principle. Born-Oppenheimer approximation. Electronic, rotational, vibrational and Raman spectra of diatomic molecules, selection rules. Lasers: spontaneous and stimulated emission, Einstein A & B coefficients. Optical pumping, population inversion, rate equation. Modes of resonators and coherence length.

VIII. Condensed Matter Physics

Bravais lattices. Reciprocal lattice. Diffraction and the structure factor. Bonding of solids. Elastic properties, phonons, lattice specific heat. Free electron theory and electronic specific heat. Response and relaxation phenomena. Drude model of electrical and thermal conductivity. Hall effect and thermoelectric power. Electron motion in a periodic potential, band theory of solids: metals, insulators and semiconductors. Superconductivity: type-I and type-II superconductors. Josephson junctions. Superfluidity. Defects and dislocations. Ordered phases of matter: translational and orientational order, kinds of liquid crystalline order. Quasi crystals.

IX. Nuclear and Particle Physics

Basic nuclear properties: size, shape and charge distribution, spin and parity. Binding energy, semi-empirical mass formula, liquid drop model. Nature of the nuclear force, form of nucleon-nucleon potential, charge-independence and charge-symmetry of nuclear forces. Deuteron problem. Evidence of shell structure, single-particle shell model, its validity and limitations. Rotational spectra. Elementary ideas of alpha, beta and gamma decays and their selection rules. Fission and fusion. Nuclear reactions, reaction mechanism, compound nuclei and direct reactions.

Classification of fundamental forces. Elementary particles and their quantum numbers (charge, spin, parity, isospin, strangeness, etc.). Gellmann-Nishijima formula. Quark model, baryons and mesons. C, P, and T invariance. Application of symmetry arguments to particle reactions. Parity non-conservation in weak interaction. Relativistic kinematics.

CHEMISTRY

Inorganic Chemistry

1. Chemical periodicity
2. Structure and bonding in homo- and heteronuclear molecules, including shapes of molecules (VSEPR Theory).
3. Concepts of acids and bases, Hard-Soft acid base concept, Non-aqueous solvents.
4. Main group elements and their compounds: Allotropy, synthesis, structure and bonding, industrial importance of the compounds.
5. Transition elements and coordination compounds: structure, bonding theories, spectral and magnetic properties, reaction mechanisms.
6. Inner transition elements: spectral and magnetic properties, redox chemistry, analytical applications.
7. Organometallic compounds: synthesis, bonding and structure, and reactivity. Organometallics in homogeneous catalysis.
8. Cages and metal clusters.
9. Analytical chemistry- separation, spectroscopic, electro- and thermoanalytical methods.
10. Bioinorganic chemistry: photosystems, porphyrins, metalloenzymes, oxygen transport, electron- transfer reactions; nitrogen fixation, metal complexes in medicine.
11. Characterisation of inorganic compounds by IR, Raman, NMR, EPR, Mössbauer, UV-vis, NQR, MS, electron spectroscopy and microscopic techniques.
12. Nuclear chemistry: nuclear reactions, fission and fusion, radio-analytical techniques and activation analysis.

Physical Chemistry:

1. Basic principles of quantum mechanics: Postulates; operator algebra; exactly-solvable systems: particle-in-a-box, harmonic oscillator and the hydrogen atom, including shapes of atomic orbitals; orbital and spin angular momenta; tunneling.

2. Approximate methods of quantum mechanics: Variational principle; perturbation theory up to second order in energy; applications.

3. Atomic structure and spectroscopy; term symbols; many-electron systems and antisymmetry principle.

4. Chemical bonding in diatomics; elementary concepts of MO and VB theories; Huckel theory for conjugated π-electron systems.

5. Chemical applications of group theory; symmetry elements; point groups; character tables; selection rules.

6. Molecular spectroscopy: Rotational and vibrational spectra of diatomic molecules; electronic spectra; IR and Raman activities – selection rules; basic principles of magnetic resonance.

7. Chemical thermodynamics: Laws, state and path functions and their applications; thermodynamic description of various types of processes; Maxwell's relations; spontaneity and equilibria; temperature and pressure dependence of thermodynamic quantities; Le Chatelier principle; elementary description of phase transitions; phase equilibria and phase rule; thermodynamics of ideal and non-ideal gases, and solutions.

8. Statistical thermodynamics: Boltzmann distribution; kinetic theory of gases; partition functions and their relation to thermodynamic quantities – calculations for model systems.

9. Electrochemistry: Nernst equation, redox systems, electrochemical cells; Debye-Huckel theory; electrolytic conductance – Kohlrausch's law and its applications; ionic equilibria; conductometric and potentiometric titrations.

10. Chemical kinetics: Empirical rate laws and temperature dependence; complex reactions; steady state approximation; determination of reaction mechanisms; collision and transition state theories of rate constants; unimolecular reactions; enzyme kinetics; salt effects; homogeneous catalysis; photochemical reactions.

11. Colloids and surfaces: Stability and properties of colloids; isotherms and surface area; heterogeneous catalysis.

12. Solid state: Crystal structures; Bragg's law and applications; band structure of solids.

13. Polymer chemistry: Molar masses; kinetics of polymerization.

14. Data analysis: Mean and standard deviation; absolute and relative errors; linear regression; covariance and correlation coefficient.

Organic Chemistry

1. IUPAC nomenclature of organic molecules including regio- and stereoisomers.

2. Principles of stereochemistry: Configurational and conformational isomerism in acyclic and cyclic compounds; stereogenicity, stereoselectivity, enantioselectivity, diastereoselectivity and asymmetric induction.

3. Aromaticity: Benzenoid and non-benzenoid compounds – generation and reactions.

4. Organic reactive intermediates: Generation, stability and reactivity of carbocations, carbanions, free radicals, carbenes, benzynes and nitrenes.

5. Organic reaction mechanisms involving addition, elimination and substitution reactions with electrophilic, nucleophilic or radical species. Determination of reaction pathways.

6. Common named reactions and rearrangements – applications in organic synthesis.

7. Organic transformations and reagents: Functional group interconversion including oxidations and reductions; common catalysts and reagents (organic, inorganic, organometallic and enzymatic). Chemo, regio and stereoselective transformations.

8. Concepts in organic synthesis: Retrosynthesis, disconnection, synthons, linear and convergent synthesis, umpolung of reactivity and protecting groups.

9. Asymmetric synthesis: Chiral auxiliaries, methods of asymmetric induction – substrate, reagent and catalyst controlled reactions; determination of enantiomeric and diastereomeric excess; enantio-discrimination. Resolution – optical and kinetic.

10. Pericyclic reactions – electrocyclisation, cycloaddition, sigmatropic rearrangements and other related concerted reactions. Principles and applications of photochemical reactions in organic chemistry.

11. Synthesis and reactivity of common heterocyclic compounds containing one or two heteroatoms (O, N, S).

12. Chemistry of natural products: Carbohydrates, proteins and peptides, fatty acids, nucleic acids, terpenes, steroids and alkaloids. Biogenesis of terpenoids and alkaloids.

13. Structure determination of organic compounds by IR, UV-Vis, ^{1}H & ^{13}C NMR and Mass spectroscopic techniques.

Interdisciplinary topics

1. Chemistry in nanoscience and technology.
2. Catalysis and green chemistry.
3. Medicinal chemistry.
4. Supramolecular chemistry.
5. Environmental chemistry.

LIFE SCIENCES

1. Molecules and their Interaction Relevant to Biology
2. Cellular Organization
3. Fundamental Processes
4. Cell Communication and Cell Signaling
5. Developmental Biology
6. System Physiology – Plant
7. System Physiology – Animal
8. Inheritance Biology
9. Diversity of Life Forms
10. Ecological Principles
11. Evolution and Behavior
12. Applied Biology
13. Methods in Biology

1. MOLECULES AND THEIR INTERACTION RELAVENT TO BIOLOGY

A. Structure of atoms, molecules and chemical bonds.
B Composition, structure and function of biomolecules (carbohydrates, lipids, proteins, nucleic acids and vitamins).
C. Stablizing interactions (Van der Waals, electrostatic, hydrogen bonding, hydrophobic interaction, etc.).
D Principles of biophysical chemistry (pH, buffer, reaction kinetics, thermodynamics, colligative properties).
E. Bioenergetics, glycolysis, oxidative phosphorylation, coupled reaction, group transfer, biological energy transducers.
F. Principles of catalysis, enzymes and enzyme kinetics, enzyme regulation, mechanism of enzyme catalysis, isozymes
G. Conformation of proteins (Ramachandran plot, secondary structure, domains, motif and folds).
H. Conformation of nucleic acids (helix (A, B, Z), t-RNA, micro-RNA).
I. Stability of proteins and nucleic acids.
J. Metabolism of carbohydrates, lipids, amino acids nucleotides and vitamins.

2. CELLULAR ORGANIZATION

A) **Membrane structure and function**
(Structure of model membrane, lipid bilayer and membrane protein diffusion, osmosis, ion channels, active transport, membrane pumps, mechanism of sorting and regulation of intracellular transport,electrical properties of membranes).

B) **Structural organization and function of intracellular organelles** (Cell wall, nucleus, mitochondria, Golgi bodies, lysosomes, endoplasmic reticulum, peroxisomes, plastids, vacuoles, chloroplast, structure & function of cytoskeleton and its role in motility).

C) **Organization of genes and chromosomes** (Operon, unique and repetitive DNA, interrupted genes, gene families, structure of chromatin and chromosomes, heterochromatin, euchromatin, transposons).

D) **Cell division and cell cycle** (Mitosis and meiosis, their regulation, steps in cell cycle, regulation and control of cell cycle).

E) **Microbial Physiology** (Growth yield and characteristics, strategies of cell division, stress response)

3. **FUNDAMENTAL PROCESSES**

A) **DNA replication, repair and recombination** (Unit of replication, enzymes involved, replication origin and replication fork, fidelity of replication, extrachromosomal replicons, DNA damage and repair mechanisms, homologous and site-specific recombination).

B) **RNA synthesis and processing** (transcription factors and machinery, formation of initiation complex, transcription activator and repressor, RNA polymerases, capping, elongation, and termination, RNA processing, RNA editing, splicing, and polyadenylation, structure and function of different types of RNA, RNA transport).

C) **Protein synthesis and processing** (Ribosome, formation of initiation complex, initiation factors and their regulation, elongation and elongation factors, termination, genetic code, aminoacylation of tRNA, tRNA-identity, aminoacyl tRNA synthetase, and translational proof-reading, translational inhibitors, Post- translational modification of proteins).

D) **Control of gene expression at transcription and translation level** (regulating the expression of phages, viruses, prokaryotic and eukaryotic genes, role of chromatin in gene expression and gene silencing).

4. **Cell communication and cell signaling**

A) **Host parasite interaction** Recognition and entry processes of different pathogens like bacteria, viruses into animal and plant host cells, alteration of host cell behavior by pathogens, virus-induced cell transformation, pathogen-induced diseases in animals and plants, cell-cell fusion in both normal and abnormal cells.

B) **Cell signaling** Hormones and their receptors, cell surface receptor, signaling through G-protein coupled receptors, signal transduction pathways, second messengers, regulation of signaling pathways, bacterial and plant two-component systems, light signaling in plants, bacterial chemotaxis and quorum sensing.

C) **Cellular communication** Regulation of hematopoiesis, general principles of cell communication, cell adhesion and roles of different adhesion molecules, gap junctions, extracellular matrix, integrins, neurotransmission and its regulation.

D) **Cancer**
Genetic rearrangements in progenitor cells, oncogenes, tumor suppressor genes, cancer and the cell cycle, virus-induced cancer, metastasis, interaction of cancer

cells with normal cells, apoptosis, therapeutic interventions of uncontrolled cell growth.

E) **Innate and adaptive immune system** Cells and molecules involved in innate and adaptive immunity, antigens, antigenicity and immunogenicity. B and T cell epitopes, structure and function of antibody molecules. generation of antibody diversity, monoclonal antibodies, antibody engineering, antigen-antibody interactions, MHC molecules, antigen processing and presentation, activation and differentiation of B and T cells, B and T cell receptors, humoral and cell-mediated immune responses, primary and secondary immune modulation, the complement system, Toll-like receptors, cell-mediated effector functions, inflammation, hypersensitivity and autoimmunity, immune response during bacterial (tuberculosis), parasitic (malaria) and viral (HIV) infections, congenital and acquired immunodeficiencies, vaccines.

5. DEVELOPMENTAL BIOLOGY

A) Basic concepts of development : Potency, commitment, specification, induction, competence, determination and differentiation; morphogenetic gradients; cell fate and cell lineages; stem cells; genomic equivalence and the cytoplasmic determinants; imprinting; mutants and transgenics in analysis of development

B) Gametogenesis, fertilization and early development: Production of gametes, cell surface molecules in sperm-egg recognition in animals; embryo sac development and double fertilization in plants; zygote formation, cleavage, blastula formation, embryonic fields, gastrulation and formation of germ layers in animals; embryogenesis, establishment of symmetry in plants; seed formation and germination.

C) Morphogenesis and organogenesis in animals : Cell aggregation and differentiation in *Dictyostelium*; axes and pattern formation in *Drosophila*, amphibia and chick; organogenesis – vulva formation in *Caenorhabditis elegans*, eye lens induction, limb development and regeneration in vertebrates; differentiation of neurons, post embryonic development- larval formation, metamorphosis; environmental regulation of normal development; sex determination.

***D)* Morphogenesis and organogenesis in plants:** Organization of shoot and root apical meristem; shoot and root development; leaf development and phyllotaxy; transition to flowering, floral meristems and floral development in *Arabidopsis* and *Antirrhinum*

E) Programmed cell death, aging and senescence

6. SYSTEM PHYSIOLOGY - PLANT

A. **Photosynthesis** - Light harvesting complexes; mechanisms of electron transport; photoprotective mechanisms; CO_2 fixation-C_3, C_4 and CAM pathways.

B. **Respiration and photorespiration** – Citric acid cycle; plant mitochondrial electron transport and ATP synthesis; alternate oxidase; photorespiratory pathway.

C. **Nitrogen metabolism** - Nitrate and ammonium assimilation; amino acid biosynthesis.

D. **Plant hormones** – Biosynthesis, storage, breakdown and transport; physiological effects and mechanisms of action.

E. **Sensory photobiology** - Structure, function and mechanisms of action of phytochromes, cryptochromes and phototropins; stomatal movement; photoperiodism and biological clocks.

F. **Solute transport and photoassimilate translocation** – uptake, transport and translocation of water, ions, solutes and macromolecules from soil, through cells, across membranes, through xylem and phloem; transpiration; mechanisms of loading and unloading of photoassimilates.

G. **Secondary metabolites** - Biosynthesis of terpenes, phenols and nitrogenous compounds and their roles.

H. **Stress physiology** – Responses of plants to biotic (pathogen and insects) and abiotic (water, temperature and salt) stresses.

7. SYSTEM PHYSIOLOGY - ANIMAL

A. **Blood and circulation** - Blood corpuscles, haemopoiesis and formed elements, plasma function, blood volume, blood volume regulation, blood groups, haemoglobin, immunity, haemostasis.

B. **Cardiovascular System:** Comparative anatomy of heart structure, myogenic heart, specialized tissue, ECG – its principle and significance, cardiac cycle, heart as a pump, blood pressure, neural and chemical regulation of all above.

C. **Respiratory system** - Comparison of respiration in different species, anatomical considerations, transport of gases, exchange of gases, waste elimination, neural and chemical regulation of respiration.

D. **Nervous system** - Neurons, action potential, gross neuroanatomy of the brain and spinal cord, central and peripheral nervous system, neural control of muscle tone and posture.

E. **Sense organs** - Vision, hearing and tactile response.

F. **Excretory system** - Comparative physiology of excretion, kidney, urine formation, urine concentration, waste elimination, micturition, regulation of water balance, blood volume, blood pressure, electrolyte balance, acid-base balance.

G. **Thermoregulation** - Comfort zone, body temperature – physical, chemical, neural regulation, acclimatization.

H. **Stress and adaptation**

I. **Digestive system** - Digestion, absorption, energy balance, BMR.

J. **Endocrinology and reproduction** - Endocrine glands, basic mechanism of hormone action, hormones and diseases; reproductive processes, gametogenesis, ovulation, neuroendocrine regulation

8. INHERITANCE BIOLOGY

A) Mendelian principles : Dominance, segregation, independent assortment.

B) Concept of gene : Allele, multiple alleles, pseudoallele, complementation tests

C) Extensions of Mendelian principles : Codominance, incomplete dominance, gene interactions, pleiotropy, genomic imprinting, penetrance and expressivity, phenocopy, linkage and crossing over, sex linkage, sex limited and sex influenced characters.

D) Gene mapping methods : Linkage maps, tetrad analysis, mapping with molecular markers, mapping by using somatic cell hybrids, development of mapping population in plants.

E) Extra chromosomal inheritance : Inheritance of Mitochondrial and chloroplast genes, maternal inheritance.

F) Microbial genetics : Methods of genetic transfers – transformation, conjugation, transduction and sex-duction, mapping genes by interrupted mating, fine structure analysis of genes.

G) Human genetics : Pedigree analysis, lod score for linkage testing, karyotypes, genetic disorders.

H) Quantitative genetics : Polygenic inheritance, heritability and its measurements, QTL mapping.

I) Mutation : Types, causes and detection, mutant types – lethal, conditional, biochemical, loss of function, gain of function, germinal verses somatic mutants, insertional mutagenesis.

J) Structural and numerical alterations of chromosomes : Deletion, duplication, inversion, translocation, ploidy and their genetic implications.

K) Recombination : Homologous and non-homologous recombination including transposition.

9. DIVERSITY OF LIFE FORMS:

A. Principles & methods of taxonomy:

Concepts of species and hierarchical taxa, biological nomenclature, classical & quantititative methods of taxonomy of plants, animals and microorganisms.

B. Levels of structural organization:
Unicellular, colonial and multicellular forms. Levels of organization of tissues, organs & systems. Comparative anatomy, adaptive radiation, adaptive modifications.

C. **Outline classification of plants, animals & microorganisms:**
Important criteria used for classification in each taxon. Classification of plants, animals and microorganisms. Evolutionary relationships among taxa.

D. **Natural history of Indian subcontinent:**
Major habitat types of the subcontinent, geographic origins and migrations of species. Comman Indian mammals, birds. Seasonality and phenology of the subcontinent.

E. **Organisms of health & agricultural importance:**
Common parasites and pathogens of humans, domestic animals and crops.

F. **Organisms of conservation concern:**

Rare, endangered species. Conservation strategies.

10. ECOLOGICAL PRINCIPLES

The Environment: Physical environment; biotic environment; biotic and abiotic interactions.

Habitat and Niche: Concept of habitat and niche; niche width and overlap; fundamental and realized niche; resource partitioning; character displacement.

Population Ecology: Characteristics of a population; population growth curves; population regulation; life history strategies (*r* and *K* selection); concept of metapopulation – demes and dispersal, interdemic extinctions, age structured populations.

Species Interactions: Types of interactions, interspecific competition, herbivory, carnivory, pollination, symbiosis.

Community Ecology: Nature of communities; community structure and attributes; levels of species diversity and its measurement; edges and ecotones.

Ecological Succession: Types; mechanisms; changes involved in succession; concept of climax.

Ecosystem Ecology: Ecosystem structure; ecosystem function; energy flow and mineral cycling (C,N,P); primary production and decomposition; structure and function of some Indian ecosystems: terrestrial (forest, grassland) and aquatic (fresh water, marine, eustarine).

Biogeography: Major terrestrial biomes; theory of island biogeography; biogeographical zones of India.

Applied Ecology: Environmental pollution; global environmental change; biodiversity: status, monitoring and documentation; major drivers of biodiversity change; biodiversity management approaches.

Conservation Biology: Principles of conservation, major approaches to management, Indian case studies on conservation/management strategy (Project Tiger, Biosphere reserves).

11. EVOLUTION AND BEHAVIOUR

A. Emergence of evolutionary thoughts

Lamarck; Darwin–concepts of variation, adaptation, struggle, fitness and natural selection; Mendelism; Spontaneity of mutations; The evolutionary synthesis.

B. Origin of cells and unicellular evolution:

Origin of basic biological molecules; Abiotic synthesis of organic monomers and polymers; Concept of Oparin and Haldane; Experiement of Miller (1953); The first cell; Evolution of prokaryotes; Origin of eukaryotic cells; Evolution of unicellular eukaryotes; Anaerobic metabolism, photosynthesis and aerobic metabolism.

C. Paleontology and Evolutionary History:

The evolutionary time scale; Eras, periods and epoch; Major events in the evolutionary time scale; Origins of unicellular and multi cellular organisms; Major groups of plants and animals; Stages in primate evolution including Homo.

D. Molecular Evolution:

Concepts of neutral evolution, molecular divergence and molecular clocks; Molecular tools in phylogeny, classification and identification; Protein and nucleotide sequence analysis; origin of new genes and proteins; Gene duplication and divergence.

E. The Mechanisms:

Population genetics – Populations, Gene pool, Gene frequency; Hardy-Weinberg Law; concepts and rate of change in gene frequency through natural selection, migration and random genetic drift; Adaptive radiation; Isolating mechanisms; Speciation; Allopatricity and Sympatricity; Convergent evolution; Sexual selection; Co-evolution.

F. Brain, Behavior and Evolution:

Approaches and methods in study of behavior; Proximate and ultimate causation; Altruism and evolution-Group selection, Kin selection, Reciprocal altruism; Neural basis

of learning, memory, cognition, sleep and arousal; Biological clocks; Development of behavior; Social communication; Social dominance; Use of space and territoriality; Mating systems, Parental investment and Reproductive success; Parental care; Aggressive behavior; Habitat selection and optimality in foraging; Migration, orientation and navigation; Domestication and behavioral changes.

12. APPLIED BIOLOGY:

A. Microbial fermentation and production of small and macro molecules.

B. Application of immunological principles, vaccines, diagnostics. Tissue and cell culture methods for plants and animals.

C. Transgenic animals and plants, molecular approaches to diagnosis and strain identification.

D. Genomics and its application to health and agriculture, including gene therapy.

E. Bioresource and uses of biodiversity.

F. Breeding in plants and animals, including marker – assisted selection

G. Bioremediation and phytoremediation

H. Biosensors

13. METHODS IN BIOLOGY

A. Molecular Biology and Recombinant DNA methods:

Isolation and purification of RNA , DNA (genomic and plasmid) and proteins, different separation methods.
Analysis of RNA, DNA and proteins by one and two dimensional gel electrophoresis, Isoelectric focusing gels.
Molecular cloning of DNA or RNA fragments in bacterial and eukaryotic systems.
Expression of recombinant proteins using bacterial, animal and plant vectors.
Isolation of specific nucleic acid sequences
Generation of genomic and cDNA libraries in plasmid, phage, cosmid, BAC and YAC vectors.
In vitro mutagenesis and deletion techniques, gene knock out in bacterial and eukaryotic organisms.
Protein sequencing methods, detection of post translation modification of proteins.
DNA sequencing methods, strategies for genome sequencing.
Methods for analysis of gene expression at RNA and protein level, large scale expression, such as micro array based techniques
Isolation, separation and analysis of carbohydrate and lipid molecules
RFLP, RAPD and AFLP techniques

B. Histochemical and Immunotechniques

Antibody generation, Detection of molecules using ELISA, RIA, western blot, immunoprecipitation, fluocytometry and immunofluorescence microscopy, detection of molecules in living cells, in situ localization by techniques such as FISH and GISH.

C **Biophysical Method:**

Molecular analysis using UV/visible, fluorescence, circular dichroism, NMR and ESR spectroscopy Molecular structure determination using X-ray diffraction and NMR, Molecular analysis using light scattering, different types of mass spectrometry and surface plasma resonance methods.

D **Statisitcal Methods:**

Measures of central tendency and dispersal; probability distributions (Binomial, Poisson and normal); Sampling distribution; Difference between parametric and non-parametric statistics; Confidence Interval; Errors; Levels of significance; Regression and Correlation; t-test; Analysis of variance; X^2 test;; Basic introduction to Muetrovariate statistics, etc.

E. **Radiolabeling techniques:**

Detection and measurement of different types of radioisotopes normally used in biology, incorporation of radioisotopes in biological tissues and cells, molecular imaging of radioactive material, safety guidelines.

F. **Microscopic techniques:**

Visulization of cells and subcellular components by light microscopy, resolving powers of different microscopes, microscopy of living cells, scanning and transmission microscopes, different fixation and staining techniques for EM, freeze-etch and freeze-fracture methods for EM, image processing methods in microscopy.

G. **Electrophysiological methods:**

Single neuron recording, patch-clamp recording, ECG, Brain activity recording, lesion and stimulation of brain, pharmacological testing, PET, MRI, fMRI, CAT .

H. **Methods in field biology:**

Methods of estimating population density of animals and plants, ranging patterns through direct, indirect and remote observations, sampling methods in the study of behavior, habitat characterization: ground and remote sensing methods..

MATHEMATICS

UNIT – 1

Analysis: Elementary set theory, finite, countable and uncountable sets, Real number system as a complete ordered field, Archimedean property, supremum, infimum.

Sequences and series, convergence, limsup, liminf.

Bolzano Weierstrass theorem, Heine Borel theorem.

Continuity, uniform continuity, differentiability, mean value theorem.

Sequences and series of functions, uniform convergence.

Riemann sums and Riemann integral, Improper Integrals.

Monotonic functions, types of discontinuity, functions of bounded variation, Lebesgue measure, Lebesgue integral.

Functions of several variables, directional derivative, partial derivative, derivative as a linear transformation, inverse and implicit function theorems.

Metric spaces, compactness, connectedness. Normed linear Spaces. Spaces of continuous functions as examples.

Linear Algebra: Vector spaces, subspaces, linear dependence, basis, dimension, algebra of linear transformations.

Algebra of matrices, rank and determinant of matrices, linear equations.

Eigenvalues and eigenvectors, Cayley-Hamilton theorem.

Matrix representation of linear transformations. Change of basis, canonical forms, diagonal forms, triangular forms, Jordan forms.

Inner product spaces, orthonormal basis.

Quadratic forms, reduction and classification of quadratic forms

UNIT – 2

Complex Analysis: Algebra of complex numbers, the complex plane, polynomials, power series, transcendental functions such as exponential, trigonometric and hyperbolic functions.
Analytic functions, Cauchy-Riemann equations.

Contour integral, Cauchy's theorem, Cauchy's integral formula, Liouville's theorem, Maximum modulus principle, Schwarz lemma, Open mapping theorem.

Taylor series, Laurent series, calculus of residues.

Conformal mappings, Mobius transformations.

Algebra: Permutations, combinations, pigeon-hole principle, inclusion-exclusion principle, derangements.

Fundamental theorem of arithmetic, divisibility in Z, congruences, Chinese Remainder Theorem, Euler's Ø- function, primitive roots.

Groups, subgroups, normal subgroups, quotient groups, homomorphisms, cyclic groups, permutation groups, Cayley's theorem, class equations, Sylow theorems.

Rings, ideals, prime and maximal ideals, quotient rings, unique factorization domain, principal ideal domain, Euclidean domain.

Polynomial rings and irreducibility criteria.

Fields, finite fields, field extensions, Galois Theory.

Topology: basis, dense sets, subspace and product topology, separation axioms, connectedness and compactness.

UNIT – 3

Ordinary Differential Equations (ODEs):

Existence and uniqueness of solutions of initial value problems for first order ordinary differential equations, singular solutions of first order ODEs, system of first order ODEs.

General theory of homogenous and non-homogeneous linear ODEs, variation of parameters, Sturm-Liouville boundary value problem, Green's function.

Partial Differential Equations (PDEs):

Lagrange and Charpit methods for solving first order PDEs, Cauchy problem for first order PDEs.

Classification of second order PDEs, General solution of higher order PDEs with constant coefficients, Method of separation of variables for Laplace, Heat and Wave equations.

Numerical Analysis :

Numerical solutions of algebraic equations, Method of iteration and Newton-Raphson method, Rate of convergence, Solution of systems of linear algebraic equations using Gauss elimination and Gauss-Seidel methods, Finite differences, Lagrange, Hermite and spline interpolation, Numerical differentiation and integration, Numerical solutions of ODEs using Picard, Euler, modified Euler and

Runge-Kutta methods.

Calculus of Variations:

Variation of a functional, Euler-Lagrange equation, Necessary and sufficient conditions for extrema. Variational methods for boundary value problems in ordinary and partial differential equations.

Linear Integral Equations:

Linear integral equation of the first and second kind of Fredholm and Volterra type, Solutions with separable kernels. Characteristic numbers and eigenfunctions, resolvent kernel.

Classical Mechanics:

Generalized coordinates, Lagrange's equations, Hamilton's canonical equations, Hamilton's principle and principle of least action, Two-dimensional motion of rigid bodies, Euler's dynamical equations for the motion of a rigid body about an axis, theory of small oscillations.

UNIT – 4

Descriptive statistics, exploratory data analysis

Sample space, discrete probability, independent events, Bayes theorem. Random variables and distribution functions (univariate and multivariate); expectation and moments. Independent random variables, marginal and conditional distributions. Characteristic functions. Probability inequalities (Tchebyshef, Markov, Jensen). Modes of convergence, weak and strong laws of large numbers, Central Limit theorems (i.i.d. case).
Markov chains with finite and countable state space, classification of states, limiting behaviour of n-step transition probabilities, stationary distribution, Poisson and birth-and-death processes.

Standard discrete and continuous univariate distributions, sampling distributions, standard errors and asymptotic distributions, distribution of order statistics and range.

Methods of estimation, properties of estimators, confidence intervals. Tests of hypotheses: most powerful and uniformly most powerful tests, likelihood ratio tests. Analysis of discrete data and chi-square test of goodness of fit. Large sample tests.

Simple nonparametric tests for one and two sample problems, rank correlation and test for independence. Elementary Bayesian inference.

Gauss-Markov models, estimability of parameters, best linear unbiased estimators, confidence intervals, tests for linear hypotheses. Analysis of variance and covariance. Fixed, random and mixed effects models. Simple and multiple linear regression. Elementary regression diagnostics. Logistic regression.

Multivariate normal distribution, Wishart distribution and their properties. Distribution of quadratic forms. Inference for parameters, partial and multiple correlation coefficients and related tests. Data reduction techniques: Principle component analysis, Discriminant analysis, Cluster analysis, Canonical correlation.

Simple random sampling, stratified sampling and systematic sampling. Probability proportional to size sampling. Ratio and regression methods.

Completely randomized designs, randomized block designs and Latin-square designs. Connectedness and orthogonality of block designs, BIBD. 2^{κ} factorial experiments: confounding and construction.

Hazard function and failure rates, censoring and life testing, series and parallel systems.

Linear programming problem, simplex methods, duality. Elementary queuing and inventory models. Steady-state solutions of Markovian queuing models: M/M/1, M/M/1 with limited waiting space, M/M/C, M/M/C with limited waiting space, M/G/1.

Code No. 20

विषय - हिन्दी

पाठ्यक्रम

इकाई - I

हिन्दी भाषा और उसका विकास।

हिन्दी की ऐतिहासिक पृष्ठभूमि : प्राचीन भारतीय आर्य भाषाएं, मध्यकालीन भारतीय आर्य भाषाएं– पालि, प्राकृत – शौरसेनी, अर्द्धमागधी, मागधी, अपभ्रंश और उनकी विशेषताएं, अपभ्रंश अवहट, और पुरानी हिन्दी का संबंध, आधुनिक भारतीय आर्य भाषाएं और उनका वर्गीकरण। हिन्दी का भौगोलिक विस्तार : हिन्दी की उपभाषाएं, पश्चिमी हिन्दी, पूर्वी हिन्दी, राजस्थानी, बिहारी तथा पहाड़ी वर्ग और उनकी बोलियां। खड़ीबोली, ब्रज और अवधी की विशेषताएं। हिन्दी के विविध रूप : हिन्दी, उर्दू, दक्खिनी, हिन्दुस्तानी। हिन्दी का भाषिक स्वरूप : हिन्दी की स्वनिम व्यवस्था – खंड्य और खंड्येतर, हिन्दी ध्वनियों के वर्गीकरण का आधार, हिन्दी शब्द रचना –उपसर्ग, प्रत्यय, समास, हिन्दी की रूप रचना – लिंग, वचन और कारक व्यवस्था के सन्दर्भ में संज्ञा, सर्वनाम, विशेषण और क्रिया रूप, हिन्दी – वाक्य – रचना। हिन्दी भाषा – प्रयोग के विविध रूप : बोली, मानक भाषा, राजभाषा, राष्ट्रभाषा और सम्पर्क भाषा। संचार माध्यम और हिन्दी, कम्प्यूटर और हिन्दी, हिन्दी की संवैधानिक स्थिति। देवनागरी लिपि : विशेषताएं और मानकीकरण।

इकाई – II

हिन्दी साहित्य का इतिहास

हिन्दी साहित्येतिहास दर्शन

हिन्दी साहित्य के इतिहास लेखन की पद्धतियां

हिन्दी साहित्य का कालविभाजन और नामकरण, आदिकाल की विशेषताएं एवं साहित्यिक प्रवृतियां, रासो-साहित्य, आदिकालीन हिन्दी का जैन साहित्य, सिद्ध और नाथ साहित्य, अमीर खुसरो की हिन्दी कविता, विद्यापति और उनकी पदावली तथा लौकिक साहित्य

भक्तिकाल

भक्ति-आंदोलन के उदय के सामाजिक-सांस्कृतिक कारण, भक्ति-आंदोलन का अखिल भारतीय स्वरुप और उसका अन्त:प्रादेशिक वैशिष्ट्य।

भक्ति काव्य की सामाजिक-सांस्कृतिक पृष्ठभूमि, आलवार सन्त। भक्ति काव्य के प्रमुख सम्प्रदाय और उनका वैचारिक आधार। निर्गुण-सुगण कवि और उनका काव्य।

रीतिकाल

सामाजिक-सांस्कृतिक पृष्टभूमि, रीतिकाल की प्रमुख प्रवृत्तियां (रीतिबद्ध, रीतिसिद्ध, रीतिमुक्त) रीतिकवियों का आचार्यत्व।

रीतिकाल के प्रमुख कवि और उनका काव्य

आधुनिक काल

हिन्दी गद्य का उद्भव और विकास। भारतेन्दु पूर्व हिन्दी गद्य, 1857 की क्रान्ति और सांस्कृतिक पुनर्जागरण, भारतेन्दु और उनका युग, पत्रकारिता का आरम्भ और 19वीं शताब्दी की हिन्दी पत्रकारिता, आधुनिकता की अवधारणा।

द्विवेदी युग : महावीर प्रसाद द्विवेदी और उनका युग, हिन्दी नवजागरण और सरस्वती, राष्ट्रीय काव्य धारा के प्रमुख कवि, स्वच्छन्दतावाद और उसके प्रमुख कवि।

छायावाद : छायावादी काव्य की प्रमुख विशेषताएं, छायावाद के प्रमुख कवि, प्रगतिवाद की अवधारणा, प्रगतिवादी काव्य और उसके प्रमुख कवि, प्रयोगवाद और नई कविता, नई कविता के कवि, समकालीन कविता (वर्ष 2000 तक) समकालीन साहित्यिक पत्रकारिता।

हिन्दी साहित्य की गद्य विधाएं

हिन्दी उपन्यास :भारतीय उपन्यास की अवधारणा।
प्रेमचन्द पूर्व उपन्यास, प्रेमचन्द और उनका युग।
प्रेमचन्द के परवर्ती उपन्यासकार (वर्ष 2000 तक)।

हिन्दी कहानी : हिन्दी कहानी का उद्भव और विकास, 20वीं सदी की हिन्दी कहानी और प्रमुख कहानी आंदोलन एवं प्रमुख कहानीकार।

हिन्दी नाटक : हिन्दी नाटक और रंगमंच, विकास के चरण, भारतेन्दुयुग, प्रसाद युग,प्रसादोत्तर युग, स्वातंत्र्योत्तर युग, साठोत्तर युग और नया नाटक
प्रमुख नाट्यकृतियाँ, प्रमुख नाटककार (वर्ष 2000 तक)।
हिन्दी एकांकी । हिन्दी रंगमंच और विकास के चरण, हिन्दी का लोक रंगमंच। नुक्कड़ नाटक ।

हिन्दी निबंध : हिन्दी निबन्ध का उद्भव और विकास, हिन्दी निबंध के प्रकार और प्रमुख निबंधकार।

हिन्दी आलोचना– हिन्दी आलोचना का उद्भव और विकास। समकालीन हिन्दी आलोचना एवं उसके विविध प्रकार। प्रमुख आलोचक।

हिन्दी की अन्य गद्य विधाएँ : रेखाचित्र, संस्मरण, यात्रा साहित्य, आत्मकथा, जीवनी और रिपोर्ताज, डायरी।

हिन्दी का प्रवासी साहित्य : अवधारणा एवं प्रमुख साहित्यकार।

इकाई – III

साहित्यशास्त्र

काव्य के लक्षण, काव्य हेतु और काव्य प्रयोजन।

प्रमुख संप्रदाय और सिद्धान्त – रस, अलंकार, रीति, ध्वनि, वक्रोक्ति और औचित्य।

रस निष्पत्ति, साधारणीकरण।

शब्दशक्ति, काव्यगुण, काव्य दोष

प्लेटो के काव्य सिद्धान्त।

अरस्तू : अनुकरण सिद्धान्त, त्रासदी विवेचन, विरेचन सिद्धान्त।

वड्सवर्थ का काव्यभाषा सिद्धान्त।

कॉलरिज : कल्पना और फैंटेसी।

टी.एस.इलिएट : निर्वैयक्तिकता का सिद्धान्त, परम्परा की अवधारणा।

आई.ए.रिचर्ड्स : मूल्य सिद्धान्त, संप्रेषण सिद्धान्त तथा काव्य-भाषा सिद्धान्त। रूसी रुपवाद।

नयी समीक्षा। मिथक, फन्तासी, कल्पना, प्रतीक, बिम्ब।

इकाई – IV

वैचारिक पृष्ठभूमि

भारतीय नवजागरण और स्वाधीनता आन्दोलन की वैचारिक पृष्ठभूमि

हिन्दी नवजागरण । खड़ीबोली आन्दोलन। फोर्ट विलियम कॉलेज

भारतेन्दु और हिन्दी नवजागरण,

महावीर प्रसाद द्विवेदी और हिन्दी नवजागरण

गांधीवादी दर्शन

अम्बेडकर दर्शन

लोहिया दर्शन

मार्क्सवाद, मनोविश्लेषणवाद, अस्तित्ववाद, उत्तर आधुनिकतावाद, अस्मितामूलक विमर्श (दलित, स्त्री, आदिवासी एवं अल्पसंख्यक)

इकाई – V

हिन्दी कविता

पृथ्वीराज रासो – रेवा तट

अमीरखुसरो – खुसरों की पहेलियाँ और मुकरियाँ

विद्यापति की पदावली (संपादक – डॉ. नरेन्द्र झा) – पद संख्या 1 - 25

कबीर – (सं.- हजारी प्रसाद द्विवेदी) – पद संख्या – 160 - 209

जायसी ग्रंथावली – (सं. राम चन्द्र शुक्ल) – नागमती वियोग खण्ड

सूरदास – भ्रमरगीत सार – (सं.- राम चन्द्र शुक्ल) – पद संख्या 21 से 70

तुलसीदास – रामचरितमानस, उत्तर काण्ड

बिहारी सतसई – (सं.- जगन्नाथ दास रत्नाकर) – दोहा संख्या 1 – 50

घनानन्द कवित्त – (सं.- विश्वनाथ मिश्र) – कवित्त संख्या 1 – 30

मीरा – (सं.- विश्वनाथ त्रिपाठी) – प्रारम्भ से 20 पद

अयोध्या सिंह उपाध्याय हरिऔध – प्रियप्रवास

मैथिलीशरण गुप्त – भारत भारती, साकेत (नवम् सर्ग)

जयशंकर प्रसाद – आंसू, कामायनी (श्रद्धा, लज्जा, इड़ा)

निराला - जुही की कली, जागो फिर एक बार, सरोजस्मृति, राम की शक्तिपूजा, कुकरमुत्ता, बाँधो न नाव इस ठाँव बंधु।

सुमित्रानंदन पंत – परिवर्तन, प्रथम रश्मि

महादेवी वर्मा – बीन भी हूँ मैं तुम्हारी रागिनी भी हूँ, मैं नीर भरी दुख की बदली, फिर विकल है प्राण मेरे, यह मन्दिर का दीप इसे नीरव जलने दो, द्रुत झरो जगत के जीर्ण पत्र

रामधारी सिंह दिनकर – उर्वशी (तृतीय अंक), रश्मिरथी

नागार्जुन – कालिदास, बादल को घिरते देखा है, अकाल और उसके बाद, खुरदरे पैर, शासन की बंदूक, मनुष्य हूँ।

सच्चिदानंद हीरानन्द वात्स्यायन अज्ञेय – कलगी बाजरे की, यह दीप अकेला, हरी घास पर क्षण भर, असाध्यवीणा, कितनी नावों में कितनी बार

भवानीप्रसाद मिश्र – गीत फरोश, सतपुड़ा के जंगल

मुक्तिबोध – भूल गलती, ब्रह्मराक्षस, अंधेरे में

धूमिल – नक्सलबाड़ी, मोचीराम, अकाल दर्शन, रोटी और संसद

इकाई –VI

हिन्दी उपन्यास

पं. गौरीदत्त – देवरानी जेठानी की कहानी

लाला श्रीनिवास दास – परीक्षा गुरू

प्रेमचन्द – गोदान

अज्ञेय – शेखर एक जीवनी (भाग – 1)

हजारी प्रसाद द्विवेदी – बाणभट्ट की आत्मकथा

फणीश्वर नाथ रेणु – मैला आंचल
यशपाल – झूठा सच
अमृत लाल नागर – मानस का हंस
भीष्म साहनी – तमस
श्रीलाल शुक्ल – राग दरबारी
कृष्णा सोबती – जिन्दगी नामा
मन्नू भंडारी – आपका बंटी
जगदीश चन्द्र – धरती धन न अपना

इकाई –VII

हिन्दी कहानी

राजेन्द्र बाला घोष (बंग महिला) - चन्द्रदेव से मेरी बातें, दुलाईवाली
माधवराव सप्रे – एक टोकरी भर मिट्टी
सुभद्रा कुमारी चौहान – राही
प्रेमचंद – ईदगाह, दुनिया का अनमोल रतन
राजा राधिकारमण प्रसाद सिंह – कानों में कंगना
चन्द्रधर शर्मा गुलेरी – उसने कहा था
जयशंकर प्रसाद – आकाशदीप
जैनेन्द्र – अपना–अपना भाग्य
फणीश्वरनाथ रेणु – तीसरी कसम, लाल पान की बेगम
अज्ञेय - गैंग्रीन
शेखर जोशी – कोसी का घटवार
भीष्म साहनी – अमृतसर आ गया है, चीफ की दावत
कृष्णा सोबती – सिक्का बदल गया
हरिशंकर परसाई – इंस्पेक्टर मातादीन चांद पर
ज्ञानरंजन – पिता
कमलेश्वर – राजा निरबंसिया
निर्मल वर्मा - परिंदे

इकाई –VIII

हिन्दी नाटक

भारतेन्दु – अंधेर नगरी, भारत दुर्दशा
जयशंकर प्रसाद – चन्द्रगुप्त, स्कंदगुप्त, ध्रुवस्वामिनी
धर्मवीरभारती – अंधायुग
लक्ष्मीनारायण लाल – सिंदूर की होली
मोहन राकेश – आधे-अधूरे, आषाढ़ का एक दिन
हबीब तनवीर – आगरा बाज़ार
सर्वेश्वरदयाल सक्सेना – बकरी
शंकरशेष – एक और द्रोणाचार्य
उपेन्द्रनाथ अश्क – अंजो दीदी
मन्नू भंडारी – महाभोज

इकाई –IX

हिन्दी निबंध

भारतेन्दु – दिल्ली दरबार दर्पण, भारतवर्षोन्नति कैसे हो सकती है
प्रताप नारायण मिश्र - शिवमूर्त्ति
बाल कृष्ण भट्ट – शिवशंभु के चिट्ठे
रामचन्द्र शुक्ल – कविता क्या है
हजारी प्रसाद द्विवेदी - नाखून क्यों बढ़ते हैं
विद्यानिवास मिश्र – मेरे राम का मुकुट भीग रहा है
अध्यापक पूर्ण सिंह - मजदूरी और प्रेम
कुबेरनाथ राय – उत्तराफाल्गुनी के आस-पास
विवेकी राय – उठ जाग मुसाफिर
नामवर सिंह – संस्कृति और सौंदर्य

इकाई –X

आत्मकथा, जीवनी तथा अन्य गद्य विधाएं

रामवृक्ष बेनीपुरी – माटी की मूरतें
महादेवी वर्मा – ठकुरी बाबा
तुलसीराम – मुर्दहिया
शिवरानी देवी – प्रेमचन्द घर में
मन्नू भंडारी – एक कहानी यह भी
विष्णु प्रभाकर - आवारा मसीहा

हरिवंशराय बच्चन – क्या भूलूँ क्या याद करूँ

रमणिका गुप्ता – आपहुदरी

हरिशंकर परसाई – भोलाराम का जीव

कृष्ण चन्दर – जामुन का पेड़

दिनकर – संस्कृति के चार अध्याय

मुक्तिबोध – एक लेखक की डायरी

राहुल सांकृत्यायन – मेरी तिब्बत यात्रा

अज्ञेय – अरे यायावर रहेगा याद

Subject: English

Unit –I: Drama

Unit –II: Poetry

Unit –III: Fiction, short story

Unit –IV: Non-Fictional Prose

(The above four units will cover all literatures in English)

Unit –V: Language: Basic concepts, theories and pedagogy. English in Use.

Unit –VI: English in India: history, evolution and futures

Unit –VII: Cultural Studies

Unit –VIII: Literary Criticism

Unit –IX: Literary Theory post World War II

Unit –X: Research Methods and Materials in English

कोड नं. : 73

पारम्परिकसंस्कृतविषयः

पाठ्यक्रमः

इकाई-I
(वेदः)

1. वैदिकसाहित्यस्य सामान्यपरिचयः
2. ऋग्वेदसंहितायां सर्गविचारः
3. माध्यन्दिनसंहितायां रुद्रस्वरूपम्
4. ब्राह्मणस्वरूपं भेदाश्च
5. आरण्यके पञ्चमहायज्ञाः, कूष्माण्डहोमः
6. उपनिषदि श्रेयःप्रेयोमार्गः, नारदसनत्कुमारसंवादश्च
7. गायत्री-उष्णिग्-अनुष्टुब्-बृहती-पङ्क्ति-त्रिष्टुब्-जगतीच्छन्दसां परिचयः
8. निरुक्ते षड्भावविकाराः, देवतास्वरूपविचारः, ऋचां त्रैविध्यम्
9. त्रैस्वर्यप्रदर्शनम्, स्वरितभेदाः, विवृत्तिः, स्वरभक्तिः
10. आधुनिकयुगे वेदोपयोगः
11. भाव्यनुसन्धानचिन्तनम्

इकाई-II
(व्याकरणम्)

1. पञ्चसन्धयः
2. समासाः
3. कारकाणि
4. प्रत्ययेषु क्त-क्तवतु-कृत्य-स्त्रीप्रत्यय-मत्वर्थीयाः

5. आधुनिकयुगे व्याकरणोपयोगः
6. भाव्यनुसन्धानचिन्तनम्

इकाई-III
(ज्यौतिषम्)

1. नक्षत्रपरिचयः
2. राशिपरिचयः
3. ग्रहपरिचयः
4. दशमभावविचारः
5. नवविधकालमानम्
6. आधुनिकयुगे ज्यौतिषोपयोगः
7. भाव्यनुसन्धानचिन्तनम्

इकाई-IV
(पुराणेतिहासः)

1. महापुराणसामान्यपरिचयः
2. पुराणलक्षणम्
3. सृष्टिविषयकावधारणम्
4. राजतरङ्गिण्याः (कल्हणविरचितायाः) विषयसारः
5. महाभारते भीष्मपर्व
6. आधुनिकयुगे पुराणेतिहासोपयोगः
7. भाव्यनुसन्धानचिन्तनम्

इकाई-V
(धर्मशास्त्रम्)

1. धर्मस्रोतांसि
2. आचारविमर्शः
3. व्यवहारविमर्शः
4. प्रायश्चित्तविमर्शः

5. श्राद्धविमर्शः
6. आधुनिकयुगे धर्मशास्त्रोपयोगः
7. भाव्यनुसन्धानचिन्तनम्

इकाई-VI
(मीमांसादर्शनम्)

1. मीमांसापरिचयः
2. धर्मलक्षणम्
3. भावना
4. विधिविमर्शः
5. षड्विधतात्पर्यनिर्णायकलिङ्गानि
6. आधुनिकयुगे मीमांसाशास्त्रोपयोगः
7. भाव्यनुसन्धानचिन्तनम्

इकाई-VII
(न्यायवैशेषिकदर्शनम्)

1. वैशेषिकशास्त्रपरिचयः
2. प्राचीननव्यन्यायशास्त्रपरिचयः
3. पदार्थविमर्शः
4. प्रमाणविचारः
5. शाब्दबोधप्रक्रिया
6. आधुनिकयुगे न्यायवैशेषिकदर्शनोपयोगः
7. भाव्यनुसन्धानचिन्तनम्

इकाई-VIII
(वेदान्ताः)

1. वेदान्तसम्प्रदायपरिचयः
2. तत्त्वमसीति वाक्यविचारः
3. ब्रह्मस्वरूपम्
4. विवर्तपरिणामयोस्तुलना
5. मोक्षः

6. आधुनिकयुगे वेदान्तदर्शनोपयोगः
7. भाव्यनुसन्धानचिन्तनम्

इकाई-IX
(सर्वदर्शनम्)

1. भारतीयवैदिकावैदिकदर्शनप्रमुखसिद्धान्तानां परिचयः
2. सांख्यतत्त्वानि
3. अष्टाङ्गयोगः
4. समाधिः
5. आगमेषु शिवशक्तिस्वरूपम्
6. शून्यवादः
7. स्याद्वादः
8. भक्तितत्त्वम्
9. आधुनिकयुगे सर्वदर्शनोपयोगः
10. भाव्यनुसन्धानचिन्तनम्

इकाई-X
(साहित्यम्)

1. संस्कृतसाहित्येतिहासः
2. काव्यलक्षणम्
3. काव्यप्रयोजनम्
4. वृत्तिविचारः
5. काव्यभेदाः
6. अलङ्कारेषु– उपमा, रूपकम्, व्यतिरेकः,
   उत्प्रेक्षा, समासोक्तिः, काव्यलिङ्गम्
   अर्थान्तरन्यासः
7. छन्दांसि– मालिनी, स्रग्धरा, शार्दूलविक्रीडितम्
   मन्दाक्रान्ता, वसन्ततिलकम्
   शिखरिणी, भुजङ्गप्रयातम्
8. आधुनिकयुगे साहित्योपयोगः
9. भाव्यनुसन्धानचिन्तनम्

Subject: **PUNJABI**

Code No.: 24

SYLLABUS

ਇਸ ਸਿਲੇਬਸ ਵਿਚ ਉਹ ਵਿਸ਼ੇ ਲਏ ਗਏ ਹਨ ਜਿਹੜੇ ਵੱਖ-ਵੱਖ ਯੂਨੀਵਰਸਿਟੀਆਂ ਵਿਚ ਪੰਜਾਬੀ ਡਿਗਰੀ ਕੋਰਸਾਂ ਵਿਚ ਜੋ ਲਾਜ਼ਮੀ ਜਾਂ ਅਖਤਿਆਰੀ ਤੌਰ 'ਤੇ ਨਿਰਧਾਰਤ ਹਨ ਅਤੇ ਜੋ ਪੜ੍ਹਾਏ ਵੀ ਜਾ ਰਹੇ ਹਨ। ਇਹ ਪੇਪਰ ਯੂ.ਜੀ.ਸੀ. ਦੀਆਂ ਨਵੀਆਂ ਹਿਦਾਇਤਾਂ ਅਨੁਸਾਰ ਦੱਸ ਯੂਨਿਟਾਂ ਵਿਚ ਵੰਡਿਆ ਗਿਆ ਹੈ।

ਸਾਹਿਤ, ਸਾਹਿਤ ਰੂਪ, ਸਾਹਿਤ [illegible]

- **ਸਾਹਿਤ** : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਤੇ ਤੱਤ।
- ਸਾਹਿਤ ਦਾ ਹੋਰ ਅਨੁਸ਼ਾਸਨਾਂ ਨਾਲ ਸਬੰਧ (ਭਾਸ਼ਾ, ਸਮਾਜ, ਇਤਿਹਾਸ, ਮਨੋਵਿਗਿਆਨ, ਸਭਿਆਚਾਰ, ਧਰਮ, ਦਰਸ਼ਨ ਅਤੇ ਰਾਜਨੀਤੀ)।
- ਸਾਹਿਤ ਪ੍ਰਗਟਾਅ ਦੀ ਵਿਧੀਆਂ : ਪ੍ਰਗੀਤਕ, ਬਿਰਤਾਂਤਕ ਅਤੇ ਨਾਟਕੀ।
- ਸਾਹਿਤ, ਸਾਹਿਤ ਵਿਗਿਆਨ ਅਤੇ ਸਾਹਿਤ ਇਤਿਹਾਸ ਦਾ ਅੰਤਰ-ਨਿਖੇੜ।
- **ਸਾਹਿਤ ਦੇ ਰੂਪ** :
  - ➢ ਮੱਧਕਾਲੀ ਰੂਪ : ਸ਼ਬਦ, ਸਲੋਕ, ਕਾਫ਼ੀ, ਬਾਰ੍ਹਮਾਹ, ਸੀਹਰਫ਼ੀ, ਕਿੱਸਾ, ਵਾਰ, ਜੰਗਨਾਮਾ, ਜਨਮਸਾਖੀ, ਟੀਕਾ ਅਤੇ ਪਰਚੀਆਂ।
  - ➢ ਆਧੁਨਿਕ ਰੂਪ : ਗੀਤ, ਨਜ਼ਮ, ਗ਼ਜ਼ਲ, ਰੁਬਾਈ, ਹਾਇਕੂ, ਨਾਵਲ, ਨਿੱਕੀ ਕਹਾਣੀ, ਨਾਟਕ ਅਤੇ ਇਕਾਂਗੀ, ਨਿਬੰਧ, ਸਫ਼ਰਨਾਮਾ, ਡਾਇਰੀ, ਜੀਵਨੀ, ਸਵੈ-ਜੀਵਨੀ ਅਤੇ ਰੇਖਾ ਚਿੱਤਰ।
- **ਯੂਨਾਨੀ ਕਾਵਿ ਸ਼ਾਸਤਰ** : ਸੁਕਰਾਤ, ਪਲੈਟੋ, ਅਰਸਤੂ, ਲੌਨਜਾਈਨਸ।
- **ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰ** :
  - ➢ ਕਾਵਿ ਦੇ ਭੇਦ : ਸ਼ਰਵ ਅਤੇ ਦ੍ਰਿਸ਼।
  - ➢ ਰਸ ਸੰਪ੍ਰਦਾਇ, ਧੁਨੀ ਸੰਪ੍ਰਦਾਇ, ਅਲੰਕਾਰ ਸੰਪ੍ਰਦਾਇ, ਵਕ੍ਰੋਕਤੀ ਸੰਪ੍ਰਦਾਇ, ਰੀਤੀ ਸੰਪ੍ਰਦਾਇ, ਔਚਿਤੈ ਸੰਪ੍ਰਦਾਇ।
- **ਪੱਛਮੀ ਸਾਹਿਤ ਚਿੰਤਨ** : ਰੂਪਵਾਦ, ਮਾਰਕਸਵਾਦ, ਸੰਰਚਨਾਵਾਦ, ਮਨੋਵਿਗਿਆਨ, ਚਿਹਨ ਵਿਗਿਆਨ, ਵਿਰਚਨਾ ਸਾਹਿਤ ਸਿਧਾਂਤ, ਨਾਰੀ ਚਿੰਤਨ, ਦਲਿਤ ਚਿੰਤਨ ਅਤੇ ਉੱਤਰ ਆਧੁਨਿਕ ਸਾਹਿਤ ਸਿਧਾਂਤ।
- **ਪੰਜਾਬੀ ਸਾਹਿਤ ਚਿੰਤਕ** : ਸੰਤ ਸਿੰਘ ਸੇਖੋਂ, ਕਿਸ਼ਨ ਸਿੰਘ, ਹਰਿਭਜਨ ਸਿੰਘ, ਨਜ਼ਮ ਹੁਸੈਨ ਸੱਯਦ, ਤਰਲੋਕ ਸਿੰਘ ਕੰਵਰ ਅਤੇ ਹਰਿਭਜਨ ਸਿੰਘ ਭਾਟੀਆ।
- ਸਾਹਿਤ ਦੀ ਇਤਿਹਾਸਕਾਰੀ : ਸੰਕਲਪ ਅਤੇ ਸਰੂਪ
- ਸਾਹਿਤ ਇਤਿਹਾਸ ਅਤੇ ਸਾਹਿਤ ਸਮੀਖਿਆ : ਅੰਤਰ ਨਿਖੇੜ
- ਸਾਹਿਤ ਇਤਿਹਾਸ ਅਤੇ ਇਤਿਹਾਸ ਸ਼ਾਸਤਰ ਦਾ ਅੰਤਰ ਨਿਖੇੜ
- ਸਾਹਿਤ ਇਤਿਹਾਸਕਾਰੀ ਦੌਰਾਨ ਸਾਹਿਤਕ ਤੱਥਾਂ ਦੇ ਨਿਰਣੈ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ
- ਸੰਯੁਕਤ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੀ ਇਤਿਹਾਸਕਾਰੀ : ਕਾਲ ਵੰਡ ਅਤੇ ਵਰਗੀਕਰਨ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ
- ਪੰਜਾਬੀ ਸਾਹਿਤ ਇਤਿਹਾਸ ਲਿਖਤਾਂ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।

ਪੰਜਾਬੀ ਸੂਫ਼ੀ ਕਾਵਿ ਧਾਰਾ ਅਤੇ ਗੁਰਮਤਿ [illegible]

- ਪੰਜਾਬੀ ਸੂਫ਼ੀ ਕਾਵਿ ਧਾਰਾ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
- ਪ੍ਰਮੁੱਖ ਪੰਜਾਬੀ ਸੂਫ਼ੀ ਕਵੀ : ਬਾਬਾ ਫ਼ਰੀਦ, ਸ਼ਾਹ ਹੁਸੈਨ, ਬੁੱਲ੍ਹੇ ਸ਼ਾਹ, ਸੁਲਤਾਨ ਬਾਹੂ ਅਤੇ ਵਜ਼ੀਦ।
- ਪੰਜਾਬੀ ਸੂਫ਼ੀ ਕਾਵਿ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ
- ਗੁਰਮਤਿ ਕਾਵਿ ਧਾਰਾ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
- ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ : ਸੰਪਾਦਨ-ਕਲਾ ਅਤੇ ਸਾਹਿਤਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
- ਪ੍ਰਮੁੱਖ ਗੁਰੂ ਕਵੀ : ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ, ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਜੀ, ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ, ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਜੀ ਅਤੇ ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਜੀ।
- ਪ੍ਰਮੁੱਖ ਭਗਤ ਕਵੀ : ਰਵੀਦਾਸ, ਨਾਮਦੇਵ ਅਤੇ ਕਬੀਰ।
- ਵਾਰਾਂ ਭਾਈ ਗੁਰਦਾਸ।
- ਗੁਰਮਤਿ ਕਾਵਿ ਧਾਰਾ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਸਮੀਖਿਆ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।

ਪੰਜਾਬੀ ਕਿੱਸਾ ਕਾਵਿ ਅਤੇ ਬੀਰ ਵਾਰ ਕਾਵਿ

- ਪੰਜਾਬੀ ਕਿੱਸਾ ਕਾਵਿ ਧਾਰਾ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।
- ਪ੍ਰਮੁੱਖ ਕਿੱਸਾਕਾਰ : ਦਮੋਦਰ, ਪੀਲੂ, ਵਾਰਿਸ, ਹਾਸ਼ਮ ਤੇ ਕਾਦਰਯਾਰ।
- ਪੰਜਾਬੀ ਬੀਰ ਵਾਰ ਕਾਵਿ ਅਤੇ ਜੰਗਨਾਮਾ ਕਾਵਿ ਧਾਰਾ : ਆਰੰਭ ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।
- ਪ੍ਰਮੁੱਖ ਵਾਰਕਾਰ : ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ, ਨਜਾਬਤ ਅਤੇ ਪੀਰ ਮੁਹੰਮਦ।
- ਪ੍ਰਮੁੱਖ ਜੰਗਨਾਮਾਕਾਰ : ਸ਼ਾਹ ਮੁਹੰਮਦ, ਮਟਕ।
- ਪੰਜਾਬੀ ਕਿੱਸਾ ਕਾਵਿ , ਬੀਰ ਵਾਰ ਕਾਵਿ ਅਤੇ ਜੰਗਨਾਮਾ ਕਾਵਿ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।

ਪੰਜਾਬੀ ਵਾਰਤਕ

- ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਵਾਰਤਕ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ (ਜਨਮਸਾਖੀ ਪਰੰਪਰਾ : ਪੁਰਾਤਨ ਜਨਮਸਾਖੀ, ਆਦਿ ਸਾਖੀਆਂ, ਨੌਂਵ ਨਾਥ ਵਾਲੀ ਜਨਮਸਾਖੀ, ਮਿਹਰਬਾਨ ਵਾਲੀ ਜਨਮਸਾਖੀ, ਜਨਮਸਾਖੀ ਭਾਈ ਬਾਲਾ; ਗਿਆਨ ਰਤਨਾਵਲੀ, ਗੁਰ ਬਿਲਾਸ, ਕੋਸ਼ਟਾਂ, ਪਰਚੀਆਂ, ਰਹਿਤਨਾਮੇ ਅਤੇ ਟੀਕੇ ਦੇ ਸੰਦਰਭ ਵਿਚ)
- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।
- ਸਮਕਾਲੀ ਪੰਜਾਬੀ ਵਾਰਤਕ ਵਿਚ ਨਵੇਂ ਝੁਕਾਅ
- ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਸਰਵੇਖਣ
- ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਸਰਵੇਖਣ
- ਪ੍ਰਮੁੱਖ ਵਾਰਤਕਕਾਰ : ਭਾਈ ਵੀਰ ਸਿੰਘ, ਪੂਰਨ ਸਿੰਘ, ਸਾਹਿਬ ਸਿੰਘ, ਤੇਜਾ ਸਿੰਘ, ਗੁਰਬਖਸ਼ ਸਿੰਘ ਪ੍ਰੀਤਲੜੀ, ਬਲਰਾਜ ਸਾਹਨੀ, ਬਲਵੰਤ ਗਾਰਗੀ, ਕੁਲਬੀਰ ਸਿੰਘ ਕਾਂਗ ਅਤੇ ਨਰਿੰਦਰ ਸਿੰਘ ਕਪੂਰ।
- ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਵਾਰਤਕ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।
- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।

ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ

- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।
- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਵਿਚ ਪ੍ਰਮੁੱਖ ਰੁਝਾਨ (ਆਦਰਸ਼ਵਾਦੀ, ਯਥਾਰਥਵਾਦੀ, ਪ੍ਰਗਤੀਵਾਦੀ, ਪ੍ਰਯੋਗਸ਼ੀਲ, ਚੁਫੇਰਵਾਦੀ, ਨਾਰੀ-ਦ੍ਰਿਸ਼ਟੀ ਅਤੇ ਦਲਿਤ-ਦ੍ਰਿਸ਼ਟੀ ਦੇ ਸੰਦਰਭ ਵਿਚ)
- ਸਮਕਾਲੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਵਿਚ ਨਵੇਂ ਝੁਕਾਅ
- ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਸਰਵੇਖਣ
- ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਸਰਵੇਖਣ
- ਪ੍ਰਮੁੱਖ ਪੰਜਾਬੀ ਕਵੀ : ਭਾਈ ਵੀਰ ਸਿੰਘ, ਪੂਰਨ ਸਿੰਘ, ਧਨੀ ਰਾਮ ਚਾਤ੍ਰਿਕ, ਮੋਹਨ ਸਿੰਘ, ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ, ਬਾਵਾ ਬਲਵੰਤ, ਹਰਿਭਜਨ ਸਿੰਘ, ਜਸਵੰਤ ਸਿੰਘ ਨੇਕੀ, ਸ਼ਿਵ ਕੁਮਾਰ, ਪਾਸ਼, ਸੁਰਜੀਤ ਪਾਤਰ ਅਤੇ ਜਸਵੰਤ ਦੀਦ।
- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।

ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਗਲਪ

- ਪੰਜਾਬੀ ਨਾਵਲ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।
- ਪੰਜਾਬੀ ਨਾਵਲ ਵਿਚ ਪ੍ਰਮੁੱਖ ਰੁਝਾਨ (ਆਦਰਸ਼ਵਾਦੀ, ਯਥਾਰਥਵਾਦੀ, ਪ੍ਰਗਤੀਵਾਦੀ, ਇਤਿਹਾਸਕ, ਮਨੋਵਿਗਿਆਨਕ, ਨਾਰੀ-ਦ੍ਰਿਸ਼ਟੀ ਅਤੇ ਦਲਿਤ ਦ੍ਰਿਸ਼ਟੀ ਦੇ ਸੰਦਰਭ ਵਿਚ)
- ਸਮਕਾਲੀ ਪੰਜਾਬੀ ਨਾਵਲ ਵਿਚ ਨਵੇਂ ਝੁਕਾਅ
- ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਨਾਵਲ ਦਾ ਸਰਵੇਖਣ
- ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਨਾਵਲ ਦਾ ਸਰਵੇਖਣ

- ਪ੍ਰਮੁੱਖ ਪੰਜਾਬੀ ਨਾਵਲਕਾਰ : ਨਾਨਕ ਸਿੰਘ, ਜਸਵੰਤ ਸਿੰਘ ਕੰਵਲ, ਗੁਰਦਿਆਲ ਸਿੰਘ, ਦਲੀਪ ਕੌਰ ਟਿਵਾਣਾ, ਰਾਮ ਸਰੂਪ ਅਣਖੀ, ਬਲਦੇਵ ਸਿੰਘ ਅਤੇ ਮਨਮੋਹਨ ਬਾਵਾ।
- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਹਾਣੀ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।
- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਹਾਣੀ ਵਿਚ ਪ੍ਰਮੁੱਖ ਰੁਝਾਨ (ਆਦਰਸ਼ਵਾਦੀ, ਯਥਾਰਥਵਾਦੀ, ਦੇਸ਼-ਵੰਡ ਨਾਲ ਸਬੰਧਤ, ਪ੍ਰਗਤੀਵਾਦੀ, ਮਨੋਵਿਗਿਆਨਕ, ਨਾਰੀ ਦ੍ਰਿਸ਼ਟੀ ਅਤੇ ਦਲਿਤ ਦ੍ਰਿਸ਼ਟੀ ਦੇ ਸੰਦਰਭ ਵਿਚ)
- ਸਮਕਾਲੀ ਪੰਜਾਬੀ ਕਹਾਣੀ ਵਿਚ ਨਵੇਂ ਝੁਕਾਅ
- ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਸਰਵੇਖਣ
- ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਸਰਵੇਖਣ
- ਪ੍ਰਮੁੱਖ ਪੰਜਾਬੀ ਕਹਾਣੀਕਾਰ : ਸੁਜਾਨ ਸਿੰਘ, ਕਰਤਾਰ ਸਿੰਘ ਦੁੱਗਲ, ਸੰਤ ਸਿੰਘ ਸੇਖੋਂ, ਕੁਲਵੰਤ ਸਿੰਘ ਵਿਰਕ, ਅਜੀਤ ਕੌਰ, ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼, ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੂ ਅਤੇ ਲਾਲ ਸਿੰਘ।
- ਪੰਜਾਬੀ ਨਾਵਲ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ
- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਹਾਣੀ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।

ਪੰਜਾਬੀ ਨਾਟਕ ਅਤੇ ਇਕਾਂਗੀ

- ਪੰਜਾਬੀ ਨਾਟਕ ਅਤੇ ਇਕਾਂਗੀ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।
- ਸਮਕਾਲੀ ਪੰਜਾਬੀ ਨਾਟਕ ਵਿਚ ਪ੍ਰਮੁੱਖ ਰੁਝਾਨ
- ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਨਾਟਕ ਤੇ ਇਕਾਂਗੀ ਦਾ ਸਰਵੇਖਣ
- ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਨਾਟਕ ਤੇ ਇਕਾਂਗੀ ਦਾ ਸਰਵੇਖਣ
- ਪ੍ਰਮੁੱਖ ਪੰਜਾਬੀ ਨਾਟਕਕਾਰ ਤੇ ਇਕਾਂਗੀਕਾਰ : ਈਸ਼ਵਰ ਚੰਦਰ ਨੰਦਾ, ਸੰਤ ਸਿੰਘ ਸੇਖੋਂ, ਹਰਚਰਨ ਸਿੰਘ, ਬਲਵੰਤ ਗਾਰਗੀ, ਸੁਰਜੀਤ ਸਿੰਘ ਸੇਠੀ, ਚਰਨਦਾਸ ਸਿੱਧੂ, ਅਜਮੇਰ ਔਲਖ, ਆਤਮਜੀਤ ਅਤੇ ਸਵਰਾਜ ਬੀਰ।
- ਪੰਜਾਬੀ ਰੰਗਮੰਚ : ਆਰੰਭ, ਵਿਕਾਸ ਪੜਾਅ, ਸਮੱਸਿਆਵਾਂ ਅਤੇ ਭਵਿੱਖ
- ਪੰਜਾਬੀ ਨਾਟਕ ਅਤੇ ਇਕਾਂਗੀ ਸੰਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ

ਲੋਕਧਾਰਾ ਤੇ ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਅਤੇ [illegible]

- ਲੋਕਧਾਰਾ : ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਿਰਤੀ ਤੇ ਤੱਤ
- ਲੋਕਧਾਰਾ, ਆਧੁਨਿਕਤਾ ਅਤੇ ਸੰਚਾਰ ਮਾਧਿਅਮ
- ਲੋਕ ਸਾਹਿਤ ਅਤੇ ਵਿਸ਼ਿਸ਼ਟ ਸਾਹਿਤ
- ਲੋਕ ਸਾਹਿਤ : ਸੰਕਲਪ ਅਤੇ ਪ੍ਰਮੁੱਖ ਵੰਨਗੀਆਂ
- ਲੋਕਧਾਰਾ ਦੀਆਂ ਵਿਭਿੰਨ ਪ੍ਰਗਟਾਅ ਵਿਧੀਆਂ (ਲੋਕ ਗੀਤ, ਲੋਕ ਕਥਾ, ਲੋਕ ਵਿਸ਼ਵਾਸ, ਰੀਤੀ ਰਿਵਾਜ, ਲੋਕ ਨਾਟਕ, ਲੋਕ ਧਰਮ, ਲੋਕ ਕਲਾਵਾਂ ਅਤੇ ਲੋਕ ਨਾਚ)
- ਵਿਸ਼ਵ ਪ੍ਰਸਿੱਧ ਲੋਕਧਾਨ ਸ਼ਾਸਤਰੀਆਂ ਦਾ ਯੋਗਦਾਨ (ਵਿਲੀਅਮ ਥਾਮਸ, ਵੀ. ਪ੍ਰਾਪ ਅਤੇ ਐਲਨ ਡੰਡੀ)।
- ਲੋਕਧਾਰਾ ਵਿਗਿਆਨ : ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਿਰਤੀ ਤੇ ਤੱਤ।
- ਲੋਕਧਾਰਾ ਵਿਗਿਆਨ ਦੀ ਦ੍ਰਿਸ਼ਟੀ ਤੋਂ ਸਾਹਿਤ ਦਾ ਅਧਿਐਨ।
- ਪੰਜਾਬੀ ਲੋਕਧਾਰਾਈ ਸਾਮੱਗਰੀ ਦੇ ਵਿਭਿੰਨ ਰੂਪ ਅਤੇ ਵਰਗੀਕਰਨ
- ਪੰਜਾਬੀ ਲੋਕ ਵਿਸ਼ਵਾਸ, ਲੋਕ ਸਿਆਣਪਾਂ, ਰੀਤਾਂ-ਰਸਮਾਂ ਅਤੇ ਤਿਉਹਾਰ
- ਪੰਜਾਬੀ ਲੋਕ-ਕਲਾਵਾਂ, ਲੋਕ-ਨਾਚ ਅਤੇ ਲੋਕ-ਸੰਗੀਤ।
- ਪੰਜਾਬੀ ਲੋਕ ਸਾਹਿਤ ਦਾ ਵਰਗੀਕਰਨ : ਲੋਕ ਗੀਤ, ਲੋਕ ਕਥਾਵਾਂ, ਲੋਕ ਨਾਟ।
- ਪੰਜਾਬੀ ਲੋਕ ਧੰਦੇ, ਲੋਕ ਗਹਿਣੇ, ਲੋਕ ਪਹਿਰਾਵਾ ਅਤੇ ਲੋਕ ਖੇਡਾਂ।
- ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਸੰਗ੍ਰਹਿ, ਸੰਪਾਦਨ ਅਤੇ ਸਮੀਖਿਆ ਦਾ ਇਤਿਹਾਸ।

- ਪੰਜਾਬੀ ਦੇ ਪ੍ਰਸਿੱਧ ਲੋਕਧਾਰਾ ਵਿਗਿਆਨੀਆਂ ਦਾ ਯੋਗਦਾਨ (ਆਰ.ਸੀ. ਟੈਂਪਲ, ਦਵਿੰਦਰ ਸਤਿਆਰਥੀ, ਸ.ਸ. ਵਣਜਾਰਾ ਬੇਦੀ, ਮਹਿੰਦਰ ਸਿੰਘ ਰੰਧਾਵਾ, ਕਰਨੈਲ ਸਿੰਘ ਥਿੰਦ ਅਤੇ ਨਾਹਰ ਸਿੰਘ)।
- ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਅਧਿਐਨ ਸਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।
- ਸਭਿਆਚਾਰ : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਤੇ ਤੱਤ।
- ਸਭਿਆਚਾਰ ਅਤੇ ਸਭਿਅਤਾ ਦਾ ਅੰਤਰ-ਨਿਖੇੜ
- ਸਭਿਆਚਾਰਕ ਰੂਪਾਂਤਰਣ ਪ੍ਰਕ੍ਰਿਆ
- ਸਭਿਆਚਾਰ, ਸਮਾਜ ਅਤੇ ਭਾਸ਼ਾ ਦਾ ਅੰਤਰ-ਸਬੰਧ
- ਸਭਿਆਚਾਰ ਅਧਿਐਨ ਦੀਆਂ ਵਿਭਿੰਨ ਦ੍ਰਿਸ਼ਟੀਆਂ
- ਸਭਿਆਚਾਰ ਦਾ ਭੂਗੋਲ, ਆਰਥਿਕਤਾ, ਧਰਮ ਅਤੇ ਰਾਜਨੀਤੀ ਨਾਲ ਸੰਬੰਧ
- ਲੋਕਧਾਰਾ ਅਤੇ ਸਭਿਆਚਾਰ ਦਾ ਅੰਤਰ-ਨਿਖੇੜ
- ਸਭਿਆਚਾਰ ਵਿਗਿਆਨ : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਤੇ ਤੱਤ
- ਵਿਸ਼ਵ ਪ੍ਰਸਿੱਧ ਸਭਿਆਚਾਰ ਸ਼ਾਸਤਰੀਆਂ ਦਾ ਯੋਗਦਾਨ (ਰੋਮੰਡ ਵਿਲੀਅਮ, ਫ੍ਰੈਜ਼ਰ ਅਤੇ ਐਡਵਰਡ ਸਈਅਦ)।
- ਪੰਜਾਬ, ਪੰਜਾਬੀ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਪਛਾਣ ਚਿੰਨ੍ਹ
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਉੱਪਰ ਭਾਰਤੀ ਤੇ ਸਾਮੀ ਸਭਿਆਚਾਰ ਦਾ ਪ੍ਰਭਾਵ
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦਾ ਕੌਮੀ ਪ੍ਰਸੰਗ
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ, ਸਿਆਸਤ ਅਤੇ ਸੰਪ੍ਰਦਾਇਕਤਾ
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਅਤੇ ਸਾਕਾਚਾਰੀ ਪ੍ਰਬੰਧ
- ਵਿਸ਼ਵੀਕਰਨ ਦੇ ਦੌਰ ਵਿਚ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਸਨਮੁਖ ਚੁਣੌਤੀਆਂ
- ਪ੍ਰਸਿੱਧ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਸ਼ਾਸਤਰੀਆਂ ਦਾ ਯੋਗਦਾਨ (ਟੀ.ਆਰ. ਵਿਨੋਦ, ਗੁਰਬਖਸ਼ ਸਿੰਘ ਫਰੈਂਕ ਅਤੇ ਜਸਵਿੰਦਰ ਸਿੰਘ)।
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਅਧਿਐਨ ਸਬੰਧੀ ਪ੍ਰਾਪਤ ਆਲੋਚਨਾ ਦਾ ਮੋਟਾ ਅਧਿਐਨ।

[redacted]

- ਭਾਸ਼ਾ : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
- ਭਾਸ਼ਾ, ਸਮਾਜ, ਸਭਿਆਚਾਰ ਅਤੇ ਸਾਹਿਤ ਦਾ ਅੰਤਰ-ਸਬੰਧ।
- ਭਾਸ਼ਾ, ਉਪਭਾਸ਼ਾ ਅਤੇ ਲਿਪੀ ਦਾ ਅੰਤਰ-ਨਿਖੇੜ।
- ਭਾਸ਼ਾ ਅਤੇ ਸੰਚਾਰ ਮਾਧਿਅਮ (ਪ੍ਰਿੰਟ, ਇਲੈਕਟ੍ਰਾਨਿਕ ਅਤੇ ਨਿਊ ਮੀਡੀਆ)।
- ਵਿਸ਼ਵ ਭਾਸ਼ਾ ਪਰਿਵਾਰ
- ਆਧੁਨਿਕ ਭਾਰਤੀ ਆਰੀਆ ਭਾਸ਼ਾਵਾਂ
- ਭਾਸ਼ਾ ਵਿਗਿਆਨ : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਤੇ ਖੇਤਰ।
- ਭਾਸ਼ਾ ਵਿਗਿਆਨ ਅਤੇ ਭਾਸ਼ਾ ਸਾਸਤਰ
- ਸਾਸਿਓਰ ਦੇ ਭਾਸ਼ਾਈ ਸੰਕਲਪ : ਚਿਹਨ : ਚਿਹਨਕ ਤੇ ਚਿਹਨਿਤ, ਲੇਂਗ ਤੇ ਪੈਰੋਲ, ਇਕਾਲਕ ਤੇ ਦੁਕਾਲਕ, ਕੜੀਦਾਰ ਤੇ ਲੜੀਦਾਰ।
- ਨੋਮ ਚੌਮਸਕੀ ਦੇ ਭਾਸ਼ਾਈ ਸੰਕਲਪ : ਯੋਗਤਾ ਤੇ ਨਿਭਾਉ, ਗਹਿਨ ਤੇ ਸਤੱਹੀ ਸੁਗਠ, ਵਾਕਾਂਸ ਢਾਂਚਾਗਤ ਨੇਮ, ਰੂਪਾਂਤਰੀ ਨੇਮ, ਧੁਨੀ ਰੂਪਾਤਮਕ ਨੇਮ।
- ਧੁਨੀ ਤੇ ਧੁਨੀ ਵਿਗਿਆਨ : ਸੰਕਲਪ ਤੇ ਵਰਗੀਕਰਨ
- ਭਾਵਾਂਸ/ਰੂਪੀਮ ਤੇ ਭਾਵਾਸ/ਰੂਪੀਮ-ਪ੍ਰਬੰਧ : ਸੰਕਲਪ ਤੇ ਵਰਗੀਕਰਨ
- ਵਾਕ ਅਤੇ ਵਾਕ ਵਿਗਿਆਨ : ਸੰਕਲਪ ਤੇ ਵਰਗੀਕਰਨ
- ਅਰਥ ਅਤੇ ਅਰਥ ਵਿਗਿਆਨ : ਸੰਕਲਪ ਤੇ ਵਰਗੀਕਰਨ
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਆਰੰਭ, ਵਿਕਾਸ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਉੱਪਰ ਹੋਰ ਭਾਸ਼ਾਵਾਂ ਦੇ ਪ੍ਰਭਾਵ
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
- ਪੰਜਾਬੀ ਦੀਆਂ ਉਪਭਾਸ਼ਾਵਾਂ
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਵਿਕਾਸ ਅਦਾਰੇ
- ਪੰਜਾਬੀ ਭਾਵਾਂਸ਼/ਰੂਪੀਮ-ਵਿਗਿਆਨ/ਵਿਉਂਤ
- ਪੰਜਾਬੀ ਵਾਕ-ਵਿਗਿਆਨ/ਵਿਉਂਤ
- ਪੰਜਾਬੀ ਅਰਥ-ਵਿਗਿਆਨ/ਵਿਉਂਤ
- ਗੁਰਮੁਖੀ ਲਿਪੀ ਦਾ ਨਿਕਾਸ, ਵਿਕਾਸ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ ਦਾ ਅੰਤਰ ਸੰਬੰਧ
- ਪ੍ਰਮੁੱਖ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਗਿਆਨੀ (ਦੁਨੀ ਚੰਦਰ, ਹਰਕੀਰਤ ਸਿੰਘ, ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼ ਸਿੰਘ ਅਤੇ ਪਰਮਜੀਤ ਸਿੰਘ ਸਿੱਧੂ)।

ਯੂਨਿਟ-2 (ਪਰਵਾਸ, ਅਨੁਵਾਦ ਅਤੇ ਖੋਜ ਵਿਧੀ)

- ਪਰਵਾਸ : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਤੇ ਤੱਤ
- ਡਾਇਸਪੋਰਾ ਅਤੇ ਪਰਵਾਸ : ਅੰਤਰ-ਨਿਖੇੜ
- ਪਾਰਰਾਸ਼ਟਰੀਅਤਾ ਅਤੇ ਪਰਵਾਸੀ ਸਾਹਿਤ
- ਬਹੁ ਸਭਿਆਚਾਰਵਾਦ : ਸੰਕਲਪ ਤੇ ਸਰੂਪ
- ਪਰਵਾਸੀ ਸੰਵੇਦਨਾ ਅਤੇ ਪਰਵਾਸੀ ਚੇਤਨਾ : ਅੰਤਰ-ਨਿਖੇੜ
- ਪੰਜਾਬੀ ਪਰਵਾਸ : ਇਤਿਹਾਸ, ਮਸਲੇ ਅਤੇ ਵੰਗਾਰਾਂ।
- ਅਨੁਵਾਦ : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਤੇ ਤੱਤ
- ਅਨੁਵਾਦ ਦੀਆਂ ਕਿਸਮਾਂ
- ਅਨੁਵਾਦ ਦੀ ਮਹੱਤਤਾ
- ਅਨੁਵਾਦ ਅਤੇ ਮਸ਼ੀਨ ਅਨੁਵਾਦ
- ਕਾਵਿ ਅਨੁਵਾਦ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ
- ਦੋ-ਭਾਸ਼ੀਆ ਦਾ ਰੋਲ
- ਅਨੁਵਾਦ ਅਤੇ ਮੀਡੀਆ
- ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦਤ ਸਾਹਿਤ : ਕੌਮੀ ਅਤੇ ਕੌਮਾਂਤਰੀ।
- ਖੋਜ : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਤੇ ਤੱਤ
- ਖੋਜ ਵਿਧੀ ਦੇ ਸੰਦ
- ਖੋਜ ਅਤੇ ਆਲੋਚਨਾ : ਅੰਤਰ-ਨਿਖੇੜ
- ਖੋਜ-ਵਿਧੀਆਂ
- ਖੋਜ-ਨਿਬੰਧ ਅਤੇ ਸ਼ੋਧ-ਪ੍ਰਬੰਧ : ਅੰਤਰ-ਨਿਖੇੜ
- ਖੋਜ ਅਤੇ ਇੰਟਰਨੈਟ ਸਾਮੱਗਰੀ
- ਖੋਜ ਅਤੇ ਡਿਜੀਟਲ ਲਾਇਬ੍ਰੇਰੀ
- ਪੰਜਾਬੀ ਖੋਜ ਦੀਆਂ ਪ੍ਰਾਪਤੀਆਂ ਤੇ ਨਵੀਨ ਸੰਭਾਵਨਾਵਾਂ
- ਪੰਜਾਬੀ ਖੋਜ-ਪਰੰਪਰਾ

URDU

SYLLABUS

UNIT - 1

تاریخ زبان اردو

۱۔ ہند آریائی کی مختصر تاریخ

۲۔ پراکرت، اپ بھرنش

۳۔ کھڑی بولی کے اوصاف

۴۔ اردو کی ابتدا کے بارے میں مختلف نظریات

(محمد حسین آزاد، محمود شیرانی، نصیر الدین ہاشمی، مسعود حسین خاں، سید سلیمان ندوی، شوکت سبزواری)

۵۔ اردو کا ابتدائی زمانہ

۶۔ اردو ساخت کے بنیادی عناصر

۷۔ دکنی اردو کی لسانی خصوصیات

(سب رس، قطب مشتری، قلی قطب شاہ، ولی، سراج اورنگ آبادی)

۸۔ اردو اور اس کی اہم بولیاں (Dialects)

۹۔ اردو کی لسانی انفرادیت

۱۰۔ اردو صوتیات / فونیمیات

۱۱۔ اردو مارفیمیات

۱۲۔ اردو نحویات

۱۳۔ اردو معنیات

☆☆☆

UNIT - 2

اردو کی شعری اصناف

۱۔ قصیدہ:

قصیدہ کا فن اور ارتقا

اردو کے اہم قصیدہ گو اور ان کے قصائد

مرزا محمد رفیع سودا : ہو اجب کفر ثابت ہے وہ تمغائے مسلمانی، تضحیک روزگار
شیخ محمد ابراہیم ذوق: زہے نشاط اگر کیجیے اسے تحریر، ہیں مری آنکھ میں اشکوں کے تماشا گوہر

۲۔ مثنوی:

مثنوی کا فن اور ارتقا

اردو کے اہم مثنوی نگار اور ان کی مثنویاں

نظامی بیدری: کدم راؤ پدم راؤ
ملا وجہی : قطب مشتری
ابن نشاطی: پھول بن
افضل جھنجھانوی: بکٹ کہانی
میر حسن: سحر البیان
دیا شنکر نسیم: گلزار نسیم

۳۔ مرثیہ:

مرثیے کا فن اور اس کا ارتقا

اردو کے اہم مرثیہ نگار اور ان کے مرثیے

مرزا ببر علی انیس : نمک خوان تکلم ہے فصاحت میری
مرزا سلامت علی دبیر: ضمیغم ڈکارتا ہوا نکلا کچھار سے
مرزا غالب : مرثیہ عارف
جمیل مظہری : جنبش سے میرے خامہ افسوں طراز کی

UNIT - 3

اردو غزل

۱۔ غزل کا فن اور ارتقا

۲۔ اردو کے اہم غزل گو شعرا اور ان کی شاعری

ولی: ''کلیات ولی'' (ردیف الف، ب اوری/ یے کی ابتدائی پانچ پانچ غزلیں)

میر: ''انتخاب میر'' از مولوی عبدالحق (ابتدائی بیس غزلیں)

غالب: ''دیوان غالب'' مطبوعہ غالب انسٹی ٹیوٹ (ردیف الف، ر، ن اوری/ یے کی ابتدائی پانچ پانچ غزلیں)

مومن: ''دیوان مومن'' (ردیف الف، اور یے کی ابتدائی پانچ پانچ غزلیں)

شاد عظیم آبادی: ''کلیات شاد''، بہار اردو اکادمی، پٹنہ (ردیف الف، ب اوری/ یے کی ابتدائی پانچ پانچ غزلیں)

حسرت موہانی: ''کلیات حسرت'' (ردیف الف، م اوری/ یے کی ابتدائی پانچ پانچ غزلیں)

فانی بدایونی: ''کلام فانی''، ناشر، مشورہ بک ڈپو، گاندھی نگر، دہلی (ابتدائی دس غزلیں)

جگر مرادآبادی: ''آتش گل'' کی ابتدائی دس غزلیں

اصغر گونڈوی: ''نشاط روح'' کی ابتدائی دس غزلیں

یگانہ چنگیزی: ''آیات وجدانی'' کی ابتدائی دس غزلیں

فراق گورکھپوری: ''گل نغمہ'' کی ابتدائی دس غزلیں

مجروح سلطان پوری: ''غزل'' کی ابتدائی پانچ غزلیں

کلیم عاجز: ''وہ جو شاعری کا سبب ہوا'' کی ابتدائی پانچ غزلیں

شہریار: ''اسم اعظم'' کی ابتدائی پانچ غزلیں

عرفان صدیقی: ''عشق نامہ'' کی ابتدائی پانچ غزلیں

☆☆☆

UNIT - 4

اردو نظم

۱۔ نظم کی صنفی شناخت

۲۔ اردو میں نظم نگاری کا آغاز وارتقا

۳۔ اردو کے اہم نظم نگار اور ان کی نظمیں:

نظیر اکبر آبادی:	مفلسی، آدمی نامہ، بنجارہ نامہ
محمد حسین آزاد:	شب قدر، صبح امید
الطاف حسین حالی:	نشاط امید، برکھارت، مناجات بیوہ
اسمٰعیل میرٹھی:	خدا کی صنعت، آثار سلف
اکبر الہ آبادی:	فرضی لطیفہ، برق کلیسا، دربار دہلی
برج نرائن چکبست:	رامائن کا آخری سین، خاک ہند، حب وطن
علامہ اقبال:	لالہ صحرائی، شعاع امید، ساقی نامہ، ذوق وشوق، لینن خدا کے حضور میں
جوش ملیح آبادی:	کسان، جنگل کی شہزادی، شکست زنداں کا خواب
میراجی:	کلرک کا نغمہ محبت، جاتری، سمندر کا بلاوا
فیض احمد فیض:	تنہائی، صبح آزادی، مجھ سے پہلی سی محبت ------
اختر الایمان:	ایک لڑکا، پگ ڈنڈی، بازآمد
مخدوم محی الدین:	چاند تاروں کا بن، حویلی، انقلاب
ن م راشد:	حسن کوزہ گر (مکمل)
ساحر لدھیانوی:	چکلے، تاج محل، گریز
شفیق فاطمہ شعریٰ:	بازیابی، بازگشت

☆☆☆

UNIT - 5

اردو داستان اور ڈراما

۱۔ داستان کا فن اور روایت

۲۔ اردو کے اہم داستان گو اور داستانیں:

ملا وجہی :	سب رس
فضل علی خاں فضلی:	کربل کتھا
انشاءاللہ خاں انشا:	رانی کیتکی کی کہانی
میر امن :	باغ و بہار
رجب علی بیگ سرور:	فسانہ عجائب
میر محمد تقی خیال:	بوستان خیال

۳۔ ڈرامے کا فن اور اس کا آغاز و ارتقا

۴۔ اردو کے اہم ڈراما نگار اور ان کے ڈرامے

امانت لکھنوی:	اندر سبھا
آغا حشر کاشمیری:	یہودی کی لڑکی
امتیاز علی تاج:	انارکلی
حبیب تنویر:	آگرہ بازار
محمد حسن:	ضحاک

☆☆☆

UNIT - 6

ناول اور افسانہ

۱۔ ناول کا فن اور اس کا آغاز وارتقا

۲۔ اردو کے اہم ناول نگار اور ان کے ناول:

پنڈت رتن ناتھ سرشار:	فسانہ آزاد
ڈپٹی نذیر احمد:	توبۃ النصوح
عبدالحلیم شرر:	فردوس بریں
مرزا ہادی رسوا:	امراؤ جان ادا
پریم چند:	گئودان
عصمت چغتائی:	ٹیڑھی لکیر
راجندر سنگھ بیدی:	ایک چادر میلی سی
قرۃ العین حیدر:	آگ کا دریا
شوکت صدیقی:	خدا کی بستی
عبداللہ حسین:	اداس نسلیں
انتظار حسین:	بستی
الیاس احمد گدی:	فائر ایریا

۳۔ افسانے کا فن اور اس کا آغاز وارتقا

۴۔ اردو کے اہم افسانہ نگار اور ان کے افسانے

پریم چند:	واردات (افسانوی مجموعہ)
سعادت حسن منٹو:	ٹھنڈا گوشت (افسانوی مجموعہ)
کرشن چندر:	ہم وحشی ہیں (افسانوی مجموعہ)
راجندر سنگھ بیدی:	اپنے دکھ مجھے دے دو (افسانوی مجموعہ)

عصمت چغتائی:	چوٹیں (افسانوی مجموعہ)
خواجہ احمد عباس:	ایک لڑکی (افسانوی مجموعہ)
قرۃ العین حیدر:	روشنی کی رفتار (افسانوی مجموعہ)
سہیل عظیم آبادی:	الاؤ (افسانوی مجموعہ)
جیلانی بانو:	راستہ بند ہے (افسانوی مجموعہ)
سریندر پرکاش:	بجوکا (افسانوی مجموعہ)
غیاث احمد گدی:	بابا لوگ (افسانوی مجموعہ)
اقبال مجید:	تماشا گھر (افسانوی مجموعہ)

☆☆☆

UNIT - 7

تنقید و تحقیق

۱۔ تنقید کی تعریف اور اس کی اہمیت

۲۔ تذکروں کی تنقیدی اہمیت

۳۔ مشرقی تصور تنقید:

عربی شعریات: سلام الجمحی، ابن قتیبہ، قدامہ ابن جعفر، ابن رشیق، ابن خلدون، عبدالقاہر جرجانی

فارسی شعریات: امیر کیکاؤس ابن اسکندر ابن قابوس، رشید الدین وطواط، شمس قیس رازی، عروضی سمرقندی

سنسکرت شعریات: بھرت منی، ابھینو گپت، آنندوردھن، اچاریہ شنکک

۴۔ مغربی تصور نقد:

افلاطون، ارسطو، لان جائنس، آئی اے رچرڈس، میتھیو آرنلڈ، ٹی ایس ایلیٹ

۵۔ دبستان تنقید:

تاثراتی، مارکسی، جمالیاتی، نفسیاتی، سائنٹفک، متنی، ہیئتی، اسلوبیاتی

۶۔ اردو کے اہم ناقدین:

محمد حسین آزاد، حالی، امداد امام اثر، شبلی، احتشام حسین، کلیم الدین احمد، آل احمد سرور، محمد حسن، شمس الرحمن فاروقی، گوپی چند نارنگ، شکیل الرحمن، وزیر آغا، مجنوں گورکھپوری، شبیہ الحسن

۷۔ تحقیق کی اہمیت

۸۔ تحقیق اور تنقید کا باہمی رشتہ

۹۔ اصول تحقیق اور طریقہ کار

۱۰۔ اردو کے اہم محققین:

محی الدین قادری زور، قاضی عبدالودود، مولوی عبدالحق، امتیاز علی عرشی، رشید حسن خاں، گیان چند جین، جمیل جالبی

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UNIT - 8

غیر افسانوی نثر

۱۔ سوانح اور خودنوشت سوانح نگاری کا فن اور اس کا آغاز وارتقا

۲۔ اردو کے اہم سوانح نگار اور ان کے سوانح:

الطاف حسین حالی: حیات جاوید

علامہ شبلی نعمانی: الفاروق

۳۔ اردو کے اہم خودنوشت سوانح نگار:

اختر الایمان: اس آباد خرابے میں

آل احمد سرور: خواب باقی ہیں

مسعود حسین خاں: ورود مسعود

۴۔ اردو میں مکتوب نگاری کا فن اور اس کا آغاز وارتقا

۵۔ اردو کے اہم مکتوب نگار:

مرزا غالب: اردوئے معلی

مولانا ابوالکلام آزاد غبار خاطر

۶۔ اردو میں مضمون نگاری: آغاز وارتقا

۷۔ اردو کے اہم مضمون نگار: سرسید احمد خاں: مضامین سرسید

۸۔ اردو میں انشائیہ نگاری کا فن اور اس کا آغاز وارتقا

۹۔ اردو کے اہم انشائیہ نگار اور ان کے انشائیے:

سجاد حیدر یلدرم: مجھے میرے دوستوں سے بچاؤ

کنہیا لال کپور: غالب جدید شعرا کی محفل میں، چینی شاعر

رشید احمد صدیقی: چارپائی، وکیل صاحب

پطرس بخاری: لاہور کا جغرافیہ، سائکل کی سواری

احمد جمال پاشا: پورکاٹن، شامت اعمال

مشتاق احمد یوسفی: جنون لطیفہ، گھر میں آنا مرغیوں کا

۱۰۔ اردو میں خاکہ نگاری کا فن اور اس کا آغاز وارتقا

۱۱۔ اردو کے اہم خاکہ نگار اور ان کے خاکے

مولوی عبدالحق: نام دیو مالی

رشید احمد صدیقی: کندن

فرحت اللہ بیگ: نذیر احمد کی کہانی: کچھ ان کی کچھ میری زبانی

۱۲۔ اردو میں سفرنامہ کا آغاز وارتقا

۱۳۔ اردو کے اہم سفرنامہ نگار اور ان کے سفرنامے:

سرسید احمد خاں: مسافران لندن

شبلی نعمانی: سفرنامہ روم ومصر وشام

ابن انشائی: ابن بطوطہ کے تعاقب میں

مجتبیٰ حسین: جاپان چلو جاپان چلو

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UNIT - 9

اردو کے ادبی دبستان، ادارے اور تحریکات ور جحانات

۱۔ دبستان دہلی

۲۔ دبستان لکھنو

۳۔ فورٹ ولیم کالج

۴۔ دلی کالج

۵۔ دارالترجمہ عثمانیہ

۶۔ اردو میں اصلاح زبان کی روایت

۷۔ اردو میں ایہام گوئی

۸۔ اردو ادب میں رومانی تحریک

۹۔ علی گڑھ تحریک

۱۰۔ ترقی پسند ادبی تحریک

۱۱۔ حلقہ ارباب ذوق

۱۲۔ جدیدیت

۱۳۔ مابعد جدیدیت

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UNIT - 10

اردو کی دیگر شعری اور نثری اصناف اور ہئیتیں

رباعی، قطعہ، شہر آشوب، ریختی، واسوخت، تضمین، مستزاد، مثلث، مربع مخمس، مسدس، مثمط، مثمن، گیت، چہاربیت، ہائکو، ترائلے، ثلاثی

تبصرہ، رپورتاژ، پیروڈی

ترجمہ اور ذرائع ابلاغ:

ترجمہ: فن اور روایت

ریڈیو فیچر، اداریہ نگاری، کالم نگاری، منظر نامہ (اسکرپٹ رائٹنگ)، کمنٹری

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Subject: HISTORY

SYLLABUS

The History paper consists of all the aspects of Indian History, Pre-history, Ancient period, Medieval Indian history and Modern India including National Movement and post independent phase. It also consists of Historical Method, Research Methodology and Historiography. Since, the subject and the boundaries of Indian history are vast and comprehensive, it has been systematically analysed and synthesized into **Ten Units**. However, the concepts, the ideas and the terms given here would specify the extent the subject included though it is not mentioned in the units. It is to make the student realize the comprehension of the syllabus prepared.

Concepts, Ideas and Terms

Bharatvarsha
Sabha and Samiti
Varnasrama
Vedanta
Purusharthas
Rina
Samskaras
Yajna
Ganarajya
Janapada
Doctrine of Karma
Dandaniti / Arthasastra / Saptanga
Dharmavijaya
Stupa / Chaitya/ Vihara
Nagara / Dravida / Vesara
Bodhisattva / Tirthankara
Alvars / Nayanars
Sreni
Bhumi-chidra-vidhana-nyaya
Kara-bhoga-bhaga
Vishti
Stridhana
Memorial Stones
Agraharas

Khilafat
Sulah-i-kul
Turkan-i-Chahlghani
Watan
Baluta
Taquavi
Iqta
Jaziya
Zakat
Madad-i-maash
Amaram
Raya-Rekho
Jangama / Dasa
Madarasa / Maqtab
Chauth / Sardeshmukhi
Sarai
Polygars
Jagir / Shariyat
Dastur
Mansab (Rank)
Deshmukh
Nadu / Ur
Ulema
Firman

Ain-i-Dashsalah
Pargana
Shahna-i-Mandi
Mahalwari
Hind Swaraj
Mercantilism
Economic Nationalism
Indian Renaissance
Economic Drain
Colonialism
Paramountcy
Dyarchy
Federalism
Utilitarianism
Filtration Theory
Forward Policy
Doctrine of Lapse
Satyagraha
Swadeshi
Revivalism
Communalism
Orientalism
Oriental Despotism
De-Industrialisation
Subsidiary Alliance
Evangelicalism
Bhudan
Panchsheel
Mixed Economy
Socialism
Hindu Code Bill
Historical Methods
Plagiarism
Ethics and Morality in History Writing

Unit – I

Negotiating the Sources: Archaeological sources: Exploration, Excavation, Epigraphy and Numismatics. Dating of Archaeological Sites. Literary Sources: Indigenous Literature: Primary and Secondary: problem of dating Religious and Secular Literature, Myths, Legends, etc. Foreign Accounts: Greek, Chinese and Arabic.

Pastoralism and Food production: Neolithic and Chalcolithic Phase: Settlement, distribution, tools and patterns of exchange.

Indus/Harappa Civilization: Origin, extent, major sites, settlement pattern, craft specialization, religion, society and polity, Decline of Indus Civilization, Internal and external trade, First urbanization in India.

Vedic and later Vedic periods; Aryan debates, Political and Social Institutions, State Structure and Theories of State; Emergence of Varnas and Social Stratification, Religious and Philosophical Ideas. Introduction of Iron Technology, Megaliths of South India.

Expansion of State system: Mahajanapadas, Monarchical and Republican States, Economic and Social Developments and Emergence of Second Urbanization in 6th century BCE; Emergence of heterodox sects-Jainism, Buddhism and Ajivikas.

Unit – II

From State to Empire: Rise of Magadha, Greek invasion under Alexander and its effects, Mauryan expansion, Mauryan polity, society, economy, Asoka's Dhamma and its Nature, Decline and Disintegration of the Mauryan Empire. Mauyan art and architecture, Asokan edicts: language and script.

Dissolution of Empire and Emergence of Regional Powers: Indo-Greeks, Sungas, Satavahanas, Kushanas and Saka-Ksatrapas, Sangam literature, polity and society in South India as reflected in Sangam literature. Trade and commerce from 2nd century BCE to 3rd century CE, Trade with the Roman World, Emergence of Mahayana Buddhism, Kharavela and Jainism, Post-Mauryan art and Architecture. Gandhara, Mathura and Amaravati schools.

Gupta Vakataka age: Polity and Society, Agrarian Economy, Land Grants, Land Revenue and Land Rights, Gupta Coins, Beginning of Temple Architecture, Emergence of Puranic Hinduism, Development of Sanskrit Language and Literature. Developments in Science Technology, Astronomy, Mathematics and Medicine.

Harsha and his Times: Administration and Religion.

Salankayanas and Visnukundins in Andhradesa.

Unit – III

Emergence of Regional Kingdoms: Kingdoms in Deccan: Gangas, Kadmabas, Western and Eastern Chalukyas, Rashtrakutas, Kalyani Chalukyas, Kakatiyas, Hoysalas and Yadavas.

Kingdoms in South India: Pallavas, Ceras, Colas and Pandyas,

Kingdoms in Eastern India: Palas and Senas of Bengal, Varmans of Kamarupa, Bhaumakaras and Somavamsis of Odisha.

Kingdoms in Western India: Maitrakas of Vallabhi and Chalukyas of Gujarat.

Kingdoms in North India: Gurjara-Pratiharas, Kalacuri-Chedis, Gahadavalas and Paramaras.

Characteristics of Early Medieval India: Administration and Political Structure Legitimation of Kingship.

Agrarian economy; land grants, changing production relations; graded land rights and peasantry, water resources, taxation system, coins and currency system;

Trade and urbanization: patterns of trade, and urban settlements, ports and trade routes, merchandise and exchange, trade guilds; trade and colonization in south-east Asia.

Growth of Brahminical religions: Vaisnavism and Saivism; Temples; Patronage and Regional Ramification; Temple Architecture and Regional Styles. Dana, Tirtha and Bhakti, Tamil Bhakti movement - Shankara, Madhava and Ramanujacharya.

Society: Varna, Jati and Proliferation of Castes, Position of women; Gender, marriage and property relations; Women in public life. Tribes as peasants and their place in Varna order. Untouchability.

Education and Educational Institutions: Agraharas, Mathas and Mahaviharas as Centres of Education. Growth of Regional Languages.

Debates of state formation in early medieval India: A) Feudal model; B) Segmentary model; C) Integrative model

Arab contracts: Suleiman Ghaznavid conquests. Alberuni's Accounts.

Unit – IV

Source of Medieval Indian History: Archaeological, Epigraphic and Numismatic sources, Material evidences and Monuments; Chronicles; Literary sources – Persian, Sanskrit and Regional languages; Daftar Khannas: Firmans, Bahis / Pothis / Akhbarat; Foreign Travellers' Accounts – Persian and Arabic.

Political Developments – The Delhi Sultanate – the Ghorids, the Turks, the Khaljis, the Tughlaqs, theSayyids and the Lodis. Decline of Delhi Sultanate.

Foundation of the Mughal Empire – Babur, Humayun and the Suris ; Expansion and Consolidation from Akbar to Aurangzeb. Decline of the Mughal Empire.

Later Mughals and Disintegration of the Mughal Empire.

The Vijayanagara and the Bahmanis - Deccan Sultanate; Bijapur, Golkonda, Bidar, Berar and Ahmadnagar – Rise, Expansion and Disintegration; Eastern Gangas and Suryavamshi Gajapatis.

Rise of the Marathas & the foundation of Swaraj by Shivaji ; its expansion under the Peshwas ; Mughal – Maratha relations, Maratha Confederacy, Causes of Decline.

Unit – V

Administration & Economy: Administration under the Sultanate, Nature of State – Theocratic and Theocentric, Central, Provincial and Local Administration, Law of succession.

Sher Shah's Administrative Reforms ; Mughal Administration – Central, Provincial and Local : Mansabdari and Jagirdari Systems.

Administrative System in the Deccan – The Vijayanagara State & Polity, Bahamani Administrative System; Maratha Administration – Asta Pradhan.

Frontier Policies under Delhi Sultanate and Mughals.

Inter-State Relations during the Sultanate and the Mughals.

Agricultural Production and Irrigation System, Village Economy, Peasantry, Grants and Agricultural Loans, Urbanization and Demographic Structure.

Industries – Cotton Textiles, Handicrafts, Agro-Based industries, Organisation, Factories & Technology.

Trade and Commerce – State Policies, Internal and External Trade: European Trade, Trade Centres and Ports, Transport and Communication.

Hundi (Bills of Exchange) and Insurance, State Income and Expenditure, Currency, Mint System; Famines and Peasant Revolts.

Unit – VI

Society and Culture: Social Organisation and Social Structure.

The Sufis – Their Orders, Beliefs and Practices, the leading Sufi Saints, Social Synchronization.

Bhakti Movement – Shaivism; Vaishnavism, Shaktism.

The Saints of the Medieval Period – North and South – their impact on Socio-Political and Religious Life – Women Saints of Medieval India.

The Sikh Movement – Guru Nanak Dev: his teachings and practices, Adi Granth; the Khalsa.

Social Classification: Ruling Class, Major Religious Groups, the Ulemas, the Mercantile and Professional Classes – Rajput Society.

Rural society – Petty Chieftains, Village Officials, Cultivators and Non-Cultivating Classes, Artisans.

Position of Women – Zanana System – Devadasi System.

Development of Education, Centres of Education and Curriculum, Madarasa Education.

Fine Arts – Major Schools of Painting – Mughal, Rajasthani, Pahari, Garhwali; Development of Music.

Art and Architecture, Indo-Islamic Architecture, Mughal Architecture, Regional Styles.

Indo-Arabic Architecture, Mughal Gardens, Maratha Forts, Shrines and Temples.

Unit –VII

Sources of Modern Indian History: Archieval Materials, Biographies and Memoirs, Newspapers, Oral Evidence, Creative Literature and Painting, Monuments, Coins.

Rise of British Power: European Traders in India in the 16th to 18th Centuries – Portuguese, Dutch, French and the British.

Establishment and Expansion of British Dominion in India.

British Relations with Principal Indian States – Bengal, Oudh, Hyderabad, Mysore, Carnatic and Punjab.

Revolt of 1857, Causes, Nature and Impact.

Administration of the Company and the Crown; Evolution of Central and Provincial Structure under East India Company.

Paramountcy, Civil Service, Judiciary, Police and the Army under the Company; British Policy and Paramountcy in the Princely States under the Crown.

Local Self-Government.

Constitutional Changes, 1909 – 1935.

Unit – VIII

Colonial Economy: Changing Composition, Volume and Direction of Trade.

Expansion and Commercialization of Agriculture, Land Rights, Land Settlements, Rural Indebtedness, Landless Labour, Irrigation and Canal System.

Decline of Industries – Changing Socio-Economic Conditions of Artisans; De-urbanisation; Economic Drain; World Wars and Economy.

British Industrial Policy; Major Modern Industries; Nature of Factory Legislation; Labour and Trade Union Movements.

Monetary Policy, Banking, Currency and Exchange, Railways and Road Transport, Communications – Post & Telegraph.

Growth of New Urban Centres; New Features of Town Planning and Architecture, Urban Society and Urban Problems.

Famines, Epidemics and the Government Policy.

Tribal and Peasant Movements.

Indian Society in Transition: Contact with Christianity – the Missions and Missionaries; Critique of Indian Social and Economic Practices and Religious Beliefs; Educational and Other Activities.

The New Education – Government Policy; Levels and Contents; English Language; Development of Science, Technology, Public Health & Medicine – Towads Modernism.

Indian Renaissance – Socio-Religious Reforms; Emergence of Middle Class; Caste Associations and Caste Mobility.

Women's Question – Nationalist Discourse; Women's Organisations; British Legislation concerning Women, Gender Identity & Constitutional Position.

The Printing Press – Journalistic Activity and the Public opinion.

Modernisation of Indian Languages and Literary Forms – Reorientation in Painting, Music and Performing Arts.

Unit – IX

Rise of Indian Nationalism: Social and Economic basis of Nationalism.

Birth of Indian National Congress; Ideologies and Programmes of the Indian National Congress, 1885-1920: Early Nationalists, Assertive Nationalists and Revolutionaries.

Swadeshi and Swaraj.

Gandhian Mass Movements; Subas Chandra Bose and INA; Role of Middle Class in National Movement; Women Participation in National Movement.

Left Wing Politics.

Depressed Class Movement.

Communal Politics; Muslim League and Genesis of Pakistan.

Towards Independence and Partition.

India after Independence: Challenges of Partition; Integration of the Indian Princely States; Kashmir, Hyderabad & Junagarh.

B.R. Ambedkar – The making of the Indian Constitution, its Features.

The Structure of Bureaucracy.

New Education Policy.

Economic Policies and the Planning process; Development, Displacement and Tribal Issues.

Linguistic Reorganisation of States; Centre-State Relations.

Foreign Policy Initiatives – Panchsheel; Dynamics of Indian Politics-Emergency; Liberalisation, Privatisation & Globalisation of Indian Economy.

Unit – X

Historical Method, Research, Methodology and Historiography:

Scope and Importance of History
Objectivity and Bias in History
Heuristics Operation, Criticism in History, Synthesis and Presentation
History and its Auxiliary Sciences
History a Science, Arts or a Social Science
Causation and Imagination in History
Significance of Regional History
Recent Trends of Indian History
Research Methodology
Hypothesis in History
Area of Proposed Research
Sources – Data Collection, Primary / Secondary, Original and Transit Sources
Trends in Historical Research
Recent Indian Historiography
Selection of Topic in History
Notes Taking, References, Footnotes and Bibliography
Thesis and Assignment Writing
Plagiarism, Intellectual Dishonesty and History Writing
Beginnings of Historical Writings – Greek, Roman and Church Historiography
Renaissance and its Impact on History Writing
Negative and Positive Schools of Historical Writing
Berlin Revolution in History Writing – Von Ranke
Marxist Philosophy of History – Scientific Materialism
Cyclical Theory of History – Oswald Spengler
Challenge and Response Theory – Arnold Joseph Toynbee
Post – Modernism in History

Education in India in Ancient , Buddhist, Medieval and British periods; Committees and Commissions' Contribution to Education, Radhakrishnan Commission (1948), Secondary Education Commission (1953), Kothari Education Commission (1964-66), National Policy of Education (1986,1992), National Curriculum Framework 2005, National Knowledge Commission (2007), Yashpal Committee Report (2009), National Curriculum Framework for Teacher Education (2009), National Education Policy (2020).

Subject : POLITICAL SCIENCE

SYLLABUS

Unit - 1 : Political Theory

Concepts
Liberty, Equality, Justice, Rights, Democracy, Power, Citizenship,

Political Traditions
Liberalism
Conservatism
Socialism
Marxism
Feminism
Ecologism
Multiculturalism
Postmodernism

Unit - 2 : Political Thought

Confucius, Plato, Aristotle, Machiavelli, Hobbes, Locke, Rousseau, Hegel, Mary Wollstonecraft, John Stuart Mill, Karl Marx, Gramsci, Hannah Arendt, Frantz Fanon, Mao Zedong, John Rawls

Unit - 3 : Indian Political Thought

Dharamshastra, Kautilya, Aggannasutta, Barani, Kabir, Pandita Ramabai, Bal Gangadhar Tilak, Swami Vivekanand, Rabindranath Tagore, M.K Gandhi, Sri Aurobindo, Periyar E. V. Ramasamy, Muhammad Iqbal, M.N.Roy, V D Savarkar, Dr. B.R.Ambedkar, J L Nehru, Ram Manohar Lohia, Jaya Prakash Narayan, Deendayal Upadhyaya

Unit - 4 : Comparative Political Analysis

Approaches: Institutional, Political Culture, Political Economy and New Institutionalism; Comparative Methods

Colonialism and decolonization: forms of colonialism, anti-colonial struggles and decolonization

Nationalism: European and non-European.

State theory: debate over the nature of state in capitalist and socialist societies; post-colonial state; welfare state; globalization and nations-states

Political regimes: democratic (Electoral, Liberal, Majoritarian and Participatory) and non-democratic regimes (Patrimonialism, Bureaucratic authoritarianism, Military dictatorship, Totalitarianism, and fascist).

Constitutions and Constitutionalism: forms of constitutions, rule of law, judicial independence and liberal constitutionalism; emergency powers and crisis of constitutionalism.

Democratisation: democratic transition and consolidation.

Development: Underdevelopment, Dependency, Modernization, World Systems Theory, development and democracy.

Structures of Power: ruling class, power elites, democratic elitism

Actor and Processes: Electoral Systems, Political Parties and Party System, Interest groups, Social movements, new social movements, Non Governmental Organisations (NGOs) and civil society campaigns; Revolutions.

Unit - 5 : International Relations

Approaches to the study of International relations: Idealism, Realism, Structural Marxism, Neoliberalism, Neorealism, Social Constructivism, Critical International Theory, Feminism, Postmodernism.

Concepts: State, state system and non-state actors, Power, Sovereignty, Security: traditional and non- traditional.

Conflict and Peace: Changing Nature of Warfare; Weapons of mass destruction; deterrence; conflict resolution, conflict transformation.

United Nations: Aims, Objectives, Structure and Evaluation of the Working of UN; Peace and Development perspectives; Humanitarian intervention. International law; International Criminal Court

Political Economy of IR; Globalisation; Global governance and Bretton Woods system, North-South Dialogue, WTO, G-20, BRICS.

Regional Organisations: European Union, African Union, Shanghai Cooperation Organisation, ASEAN.

Contemporary Challenges: International terrorism, Climate change and Environmental Concerns, Human Rights, Migration and Refugees; Poverty and

Development; Role of Religion, Culture and Identity Politics.

Unit - 6 : India's Foreign Policy

Perspectives on India's Foreign Policy: India's Identity as postcolonial, development, rising power and as emerging political economy

Continuity and change in India's Foreign Policy: Principles and determinants; Non-Alignment movement: historical background and relevance of Non Aligned Movement; India's Nuclear Policy

India's relations with major powers: USA, USSR/Russia, People's Republic of China

India's Engagement with multipolar world: India's relations with European Union, BRICS, ASEAN, Shanghai Cooperation Organisation, African Union, Southern African Development Community, Gulf Cooperation Council

India's relations with neighbourhood: SAARC, Gujaral doctrine, Look Eas t/ Act East, Look West.

India's Negotiation Strategies in International Regimes: The United Nations, World Trade Organisation, International Monetary Fund, Intergovernmental Panel on Climate Change

Contemporary challenges: maritime security, energy security, environmental security, migrants and refugees, water resources, international terrorism, cyber security

Unit - 7 : Political Institutions in India

Making of the Indian Constitution: Colonialism heritage and the contribution Indian National Movement to the making of the Indian Constitution

Constituent Assembly: Composition, Ideological Moorings, Constitutional Debates

Philosophy of the Constitution: Preamble, Fundamental Rights, Directive Principles

Constitutionalism in India: Democracy, Social Change, National Unity, Checks and Balances, Basic Structure Debate, Constitutional Amendments

Union Executive: President, Prime Minister and Council of Ministers

Union Parliament: Structure, Role and Functioning, Parliamentary Committees

Judiciary: Supreme Court, High Court, Judicial Review, Judicial Activism, Judicial

Reform.

Executive and Legislature in the States: Governor, Chief Minister, State Legislature

Federalism in India: Strong Centre Framework, Asymmetrical Federal Provisions and Adaption, Role of Intergovernmental Coordination Mechanisms, Inter-State Council, Emerging Trends.

Electoral Process and Election Commission of India: Conduct of Elections, Rules, Electoral Reforms.

Local Government Institutions: Functioning and reforms.

Constitutional and Statutory Bodies: Comptroller and Auditor General, National Commission for Scheduled Castes, National Commission for Scheduled Tribes, National Commission for Human Rights, National Commission for Women, National Commission for Minorities.

Unit - 8 : Political Processes in India

State, Economy and Development: Nature of Indian State, Development Planning model, New Economic Policy, Growth and Human Development.

Process of globalisation: social and economic implications.

Identity Politics: Religion, Tribe, Caste, Region, Language.

Social Movements: Dalit, Tribal, Women, Farmers, labour

Civil Society Groups: Non-Party Social Formations, Non-Governmental Organisations, Social Action Groups.

Regionalisation of Indian Politics: Reorganisation of Indian States, States as Political and Economic Units, Sub-State Regions, Regional disparities, Demand for New States,

Gender and Politics in India: Issues of Equality and Representation.

Ideology and Social basis of Political Parties: National Parties, State Parties.

Electoral Politics: Participation, Contestation, Representation, Emerging trends.

Unit - 9 : Public Administration

Public Administration: meaning and evolution; public and private administration Approaches: System Theory, Decision Making, Ecological Approach

Public administration theories and concepts: Scientific Management Theory, Rational Choice theory, New Public Administration, Development Administration,

Comparative Public Administration, New Public Management, changing nature of Public Administration in the era of liberalisation and Globalisation

Theories and Principles of Organization: Scientific Management Theory, Bureaucratic Theory, Human Relations Theory

Managing the organization: Theories of leadership and motivation.

Organisational Communication: Theories and Principles, Chester Bernard Principles of Communication, Information Management in the organization

Managing Conflict in the Organization: Mary Parker Follett

Management by Objectives- Peter Drucker

Unit – 10 : Governance and Public Policy in India

Governance, good governance and democratic governance, role of state, civil society and individuals.

Accountability and control: Institutional mechanism for checks and balances, legislative control over executive, administrative and budgetary control, control through parliamentary committees, judicial control over legislature and executive, administrative culture, corruption and administrative reforms

Institutional mechanisms for good governance: Right to Information, Consumer Protection Act, Citizen Charter; Grievance redress system: Ombudsman, Lokpal, Lokayukta

Grassroots Governance: Panchayati Raj Institutions and their functioning

Planning and Development: Decentralised planning, planning for development, sustainable development, participatory development, e-governance; NITI Aayog

Public policy as an instrument of socio-economic development: public policies with special reference to housing, health, drinking water, food security, MNREGA, NHRM, RTE

Monitoring and evaluation of public policy; mechanisms of making governance process accountable: jansunwai, social audit.

Relationship between Policies and Education, Linkage between Educational Policy and National Development, Determinants of Educational Policy and Process of Policy formulation: Analysis of the existing situation, generation of policy options, evaluation of policy options, making the policy decision, planning of policy implementation, policy impact assessment and subsequent policy cycles.

Relationship between Politics and Education, Perspectives of Politics of Education Liberal, Conservative and Critical, Approaches to understanding Politics (Behaviouralism, Theory of Systems Analysis and Theory of Rational Choice), Education for Political Development and Political Socialization.

Subject: ECONOMICS

Unit-1 : Micro Economics

- Theory of Consumer Behaviour
- Theory of Production and Costs
- Decision making under uncertainty Attitude towards Risk
- Game Theory – Non Cooperative games
- Market Structures, competitive and non-competitive equilibria and their efficiency properties
- Factor Pricing
- General Equilibrium Analysis
- Efficiency Criteria: Pareto-Optimality, Kaldor – Hicks and Wealth Maximization
- Welfare Economics: Fundamental Theorems , Social Welfare Function
- Asymmetric Information: Adverse Selection and Moral Hazard

Unit-2 : Macro Economics

- National Income: Concepts and Measurement
- Determination of output and employment: Classical & Keynesian Approach
- Consumption Function
- Investment Function
- Multiplier and Accelerator
- Demand for Money
- Supply of Money
- IS – LM Model Approach
- Inflation and Phillips Curve Analysis
- Business Cycles
- Monetary and Fiscal Policy
- Rational Expectation Hypothesis and its critique

Unit- 3 : Statistics and Econometrics

- Probability Theory: Concepts of probability, Distributions, Moments, Central Limit theorem
- Descriptive Statistics – Measures of Central tendency & dispersions, Correlation, Index Numbers
- Sampling methods & Sampling Distribution
- Statistical Inferences, Hypothesis testing

- Linear Regression Models and their properties – BLUE
- Identification Problem
- Simultaneous Equation Models – recursive and non-recursive
- Discrete choice models
- Time Series Analysis

Unit-4 : Mathematical Economics

- Sets, functions and continuity, sequence, series
- Differential Calculus and its Applications
- Linear Algebra – Matrices, Vector Spaces
- Static Optimization Problems and their applications
- Input-Output Model, Linear Programming
- Difference and Differential equations with applications

Unit-5 : International Economics

- International Trade: Basic concepts and analytical tools
- Theories of International Trade
- International Trade under imperfect competition
- Balance of Payments: Composition, Equilibrium and Disequilibrium and Adjustment Mechanisms
- Exchange Rate: Concepts and Theories
- Foreign Exchange Market and Arbitrage
- Gains from Trade, Terms of Trade, Trade Multiplier
- Tariff and Non-Tariff barriers to trade; Dumping
- GATT, WTO and Regional Trade Blocks; Trade Policy Issues
- IMF & World Bank

Unit-6 : Public Economics

- Market Failure and Remedial Measures: Asymmetric Information, Public Goods, Externality
- Regulation of Market – Collusion and Consumers' Welfare
- Public Revenue: Tax & Non-Tax Revenue, Direct & Indirect Taxes, Progressive and non-Progressive Taxation, Incidence and Effects of Taxation
- Public expenditure
- Public Debt and its management

- Public Budget and Budget Multiplier
- Fiscal Policy and its Implications

Unit-7 : Money and Banking

- Components of Money Supply
- Central Bank
- Commercial Banking
- Instruments and Working of Monetary Policy
- Non-banking Financial Institutions
- Capital Market and its Regulation

Unit-8 : Growth and Development Economics

- Economic Growth and Economic Development
- Theories of Economic Development: Adam Smith, Ricardo, Marx, Schumpeter, Rostow, Balanced & Unbalanced growth, Big Push approach.
- Models of Economic Growth: Harrod-Domar, Solow, Robinson, Kaldor
- Technical progress – Disembodied & embodied; endogenous growth
- Indicators of Economic Development: PQLI, HDI, SDGs
- Poverty and Inequalities – Concepts and Measurement
- Social Sector Development: Health, Education, Gender

Unit-9 : Environmental Economics and Demography

- Environment as a Public Good
- Market Failure
- Coase Theorem
- Cost-Benefit Analysis and Compensation Criteria
- Valuation of Environmental Goods
- Theories of Population
- Concepts and Measures: Fertility, Morbidity, Mortality
- Age Structure, Demographic Dividend
- Life Table
- Migration

Unit-10 : Indian Economy

- Economic Growth in India: Pattern and Structure

- Agriculture: Pattern & Structure of Growth, Major Challenges, Policy Responses
- Industry: Pattern & Structure of Growth, Major Challenges, Policy Responses
- Services: Pattern & Structure of Growth, Major Challenges, Policy Responses
- Rural Development – Issues, Challenges & Policy Responses
- Urban Development – Issues, Challenges and Policy Responses.
- Foreign Trade: Structure and Direction, BOP, Flow of Foreign Capital, Trade Policies
- Infrastructure Development: Physical and Social; Public-Private Partnerships
- Reforms in Land, Labour and Capital Markets
- Centre-State Financial Relations and Finance Commissions of India; FRBM
- Poverty, Inequality & Unemployment

Concept of Economics of Education: Cost Benefit Analysis Vs Cost Effective Analysis in Education, Economic returns to Higher Education, Signaling Theory Vs Human Capital Theory, Concept of Educational Finance; Educational finance at Micro and Macro Levels, Concept of Budgeting.

Subject : GEOGRAPHY

Unit I - Geomorphology

Unit II - Climatology

Unit III- Oceanography

Unit IV- Geography of Environment

Unit V - Population and Settlement Geography

Unit VI- Geography of Economic Activities and Regional Development

Unit VII - Cultural, Social and Political Geography

Unit VIII - Geographic Thought

Unit IX - Geographical Techniques

Unit X- Geography of India

UNIT-I

Geomorphology

Continental Drift, Plate Tectonics, Endogenetic and Exogenetic forces. Denudation and Weathering, Geomorphic Cycle (Davis and Penck), Theories and Process of Slope Development, Earth Movements (seismicity, folding, faulting and vulcanicity), Landform Occurrence and Causes of Geomorphic Hazards (earthquakes, volcanoes, landslides and avalanches)

UNIT –II

Climatology

Composition and Structure of Atmosphere; Insolation, Heat Budget of Earth, Temperature, Pressure and Winds, Atmospheric Circulation (air-masses, fronts and upper air circulation, cyclones and anticyclones (tropical and temperate), Climatic Classification of Koppen & Thornthwaite, ENSO Events (El Nino, La Nina and Southern Oscillations), Meteorological Hazards and Disasters (Cyclones, Thunderstorms, Tornadoes, Hailstorms, Heat and Cold waves Drought and Cloudburst , Glacial Lake Outburst (GLOF), Climate Change: Evidences and Causes of Climatic Change in the past, Human impact on Global Climate.

UNIT-III

Oceanography

Relief of Oceans, Composition: Temperature, Density and Salinity, Circulation: Warm and Cold Currents, Waves, Tides, Sea Level Changes, Hazards: Tsunami and Cyclone

UNIT –IV

Geography of Environment

Components: Ecosystem (Geographic Classification) and Human Ecology, Functions: Trophic Levels, Energy Flows, Cycles (geo-chemical, carbon, nitrogen and oxygen), Food Chain, Food Web and Ecological Pyramid, Human Interaction and Impacts, Environmental Ethics and Deep Ecology, Environmental Hazards and Disasters (Global Warming, Urban Heat Island, Atmospheric Pollution, Water Pollution, Land Degradation), National Programmes and Policies: Legal Framework, Environmental Policy, International Treaties, International Programmes and Polices (Brundtland Commission, Kyoto Protocol, Agenda 21, Sustainable Development Goals, Paris Agreement)

UNIT –V

Population and Settlement Geography

Population Geography

Sources of population data (census, sample surveys and vital statistics, data reliability and errors). World Population Distribution (measures, patterns and determinants), World Population Growth (prehistoric to modern period). Demographic Transition, Theories of Population Growth (Malthus, Sadler, and Ricardo). Fertility and Mortality Analysis (indices, determinants and world patterns). Migration (types, causes and consequences and models), Population Composition and Characteristics (age, sex, rural-urban, occupational structure and educational levels), Population Policies in Developed and Developing Countries.

Settlement Geography

Rural Settlements (types, patterns and distribution), Contemporary Problems of Rural Settlements (rural-urban migration; land use changes; land acquisition and transactions), Theories of Origin of Towns (Gordon Childe, Henri Pirenne, Lewis Mumford), Characteristics and Processes of Urbanization in Developed and Developing Countries (factors of urban growth, trends of urbanisation, size, structure and functions of urban areas). Urban Systems (the law of the primate city and rank size rule) Central Place Theories (Christaller and Losch), Internal Structure of the City, Models of Urban Land Use (Burgess, Harris and Ullman , and Hoyt), Concepts of Megacities, Global Cities and Edge Cities, Changing Urban Forms (peri-urban areas, rural-urban fringe, suburban , ring and satellite towns), Social Segregation in the City, Urban Social Area Analysis, Manifestation of Poverty in the City (slums, informal sector growth, crime and social exclusion).

Unit–VI:

Geography of Economic Activities and Regional Development

Economic Geography

Factors affecting spatial organisation of economic activities (primary, secondary,

tertiary and quarternary), Natural Resources (classification, distribution and associated problems), Natural Resources Management. World Energy Crises in Developed and Developing Countries.

Agricultural Geography

Land capability classification and Land Use Planning, Cropping Pattern: Methods of delineating crop combination regions (Weaver, Doi and Rafiullah), Crop diversification, Von Thunen's Model of Land Use Planning. Measurement and Determinants of Agricultural Productivity, Regional variations in Agricultural Productivity, Agricultural Systems of the World.

Industrial Geography

Classification of Industries, Factors of Industrial Location; Theories of Industrial Location (A. Weber, E. M. Hoover, August Losch, A. Pred and D. M. Smith). World Industrial Regions, Impact of Globalisation on manufacturing sector in Less Developed Countries, Tourism Industry, World distribution and growth of Information And Communication Technology (ICT) and Knowledge Production (Education and R & D) Industries.

Geography of Transport and Trade

Theories and Models of spatial interaction (Edward Ullman and M. E. Hurst) Measures and Indices of connectivity and accessibility; Spatial Flow Models: Gravity Model and its variants, World Trade Organisation, Globalisation and Liberalisation and World Trade Patterns. Problems and Prospects of Inter and Intra Regional Cooperation and Trade.

Regional Development

Typology of Regions, Formal and Fictional Regions, World Regional Disparities, Theories of Regional Development(Albert O. Hirschman, Gunnar Myrdal, John Friedman, Dependency theory of Underdevelopment, Global Economic Blocks, Regional Development and Social Movements in India

Unit – VII: Cultural, Social and Political Geography

Cultural and Social Geography

Concept of Culture, Cultural Complexes, Areas and Region, Cultural Heritage, Cultural Ecology. Cultural Convergence, Social Structure and Processes, Social Well-being and Quality of Life, Social Exclusion, Spatial distribution of social groups in India (Tribe, Caste, Religion and Language), Environment and Human Health, Diseases Ecology, Nutritional Status (etiological conditions, classification and spatial and seasonal distributional patterns with special reference to India) Health Care Planning and Policies in India, Medical Tourism in India.

Political Geography

Boundaries and Frontiers (with special reference to India), Heartland and Rimland Theories. Trends and Developments in Political Geography, Geography of Federalism, Electoral Reforms in India, Determinants of Electoral Behaviour, Geopolitics of Climate Change, Geopolitics of World Resources, Geo-politics of India Ocean, Regional Organisations of Cooperation (SAARC, ASEAN, OPEC, EU). Neopolitics of World Natural Resources.

Unit VIII: Geographic Thought

Contributions of Greek, Roman, Arab, Chinese and Indian Scholars, Contributions of Geographers (Bernhardus Varenius, Immanuel Kant, Alexander von Humboldt, Carl Ritter, Scheafer & Hartshorne), Impact of Darwinian Theory on Geographical Thought. Contemporary trends in Indian Geography: Cartography, Thematic and Methodological contributions. Major Geographic Traditions (Earth Science, man-environment relationship, area studies and spatial analysis), Dualisms in Geographic Studies (physical vs. human, regional vs. systematic, qualitative vs. quantitative, ideographic vs. nomothetic), Paradigm Shift, Perspectives in Geography (Positivism, Behaviouralism, Humanism, Structuralism, Feminism and Postmodernism).

Unit IX: Geographical Techniques

Sources of Geographic Information and Data (spatial and non-spatial), Types of Maps, Techniques of Map Making (Choropleth, Isarithmic, Dasymetric, Chorochromatic, Flow Maps) Data Representation on Maps (Pie diagrams, Bar diagrams and Line Graph, GIS Database (raster and vector data formats and attribute data formats). Functions of GIS (conversion, editing and analysis), Digital Elevation Model (DEM), Georeferencing (coordinate system and map projections and Datum), GIS Applications (thematic cartography, spatial decision support system), Basics of Remote Sensing (Electromagnetic Spectrum, Sensors and Platforms, Resolution and Types, Elements of Air Photo and Satellite Image Interpretation and Photogrammetry), Types of Aerial Photographs, Digital Image Processing: Developments in Remote Sensing Technology and Big Data Sharing and its applications in Natural Resources Management in India, GPS Components (space, ground control and receiver segments) and Applications, Applications of Measures of Central Tendency, Dispersion and Inequalities, Sampling, Sampling Procedure and Hypothesis Testing (*chi* square test, *t* test, ANOVA), Time Series Analysis, Correlation and Regression Analysis, Measurement of Indices, Making

Indicators Scale Free, Computation of Composite Index, Principal Component Analysis and Cluster Analysis, Morphometric Analysis: Ordering of Streams, Bifurcation Ratio, Drainage Density and Drainage Frequency, Basin Circularity Ratio and Form Factor, Profiles, Slope Analysis, Clinographic Curve, Hypsographic Curve and Altimetric Frequency Graph.

Unit – X: Geography of India

Major Physiographic Regions and their Characteristics; Drainage System (Himalayan and Peninsular), Climate: Seasonal Weather Characteristics, Climatic Divisions, Indian Monsoon (mechanism and characteristics), Jet Streams and Himalayan Cryosphere, Types and Distribution of Natural Resources: Soil, Vegetation, Water, Mineral and Marine Resources. Population Characteristics (spatial patterns of distribution), Growth and Composition (rural-urban, age, sex, occupational, educational, ethnic and religious), Determinants of Population, Population Policies in India, Agriculture (Production, Productivity and Yield of Major Food Crops), Major Crop Regions, Regional Variations in Agricultural Development, Environmental, Technological and Institutional Factors affecting Indian Agriculture; Agro-Climatic Zones, Green Revolution, Food Security and Right to Food. Industrial Development since Independence, Industrial Regions and their characteristics, Industrial Policies in India. Development and Patterns of Transport Networks (railways, roadways, waterways, airways and pipelines), Internal and External Trade (trend, composition and directions), Regional Development Planning in India, Globalisation and its impact on Indian Economy, Natural Disasters in India (Earthquake, Drought, Flood, Cyclone, Tsunami, Himalayan Highland Hazards and Disasters.)

Subject : F I N E / VISUAL ARTS

SYLLABUS

UNIT:-I

Fundamentals of visual art (line, shape, form, space, colour, texture, tonal values, perspective, design etc.). Understanding visual principles of composition (proportion, unity, harmony, rhythm, contrast, balance, foreshortening and emphasis etc.). Representation through two and three dimensions in visual art. Environmental, conceptual and perceptual aspects of art.

UNIT:-II

Various forms of visual arts and their inter-relationship with other modes of creative expression, e.g. performing art, cinema and literature.

UNIT:-III

Knowledge of traditional medium, materials and techniques, and their application in all disciplines of visual expression – e.g. carving and casting processes; handling of colour/pigment (impasto, glazing, etc.); intaglio/relief print; fresco; preparation of ground for murals, preparation of *wasli* for miniatures, etc.

UNIT:-IV

Developments in modern techniques, processes and procedures and their application in contemporary visual practices (installation; multi-colour print; computer-aided design – vector & rector; multimedia and digital technologies in art; *trompe l'oeil* illusory hyper-realism etc.)

UNIT:-V

The study of Indian and Western aesthetics and art appreciation.

UNIT:-VI

Study of chronological periods from prehistory to post-modern art and artists of the West, with a focus on the various movements that transformed its history

UNIT:-VII

Study of chronological periods and developments in Indian art from prehistory to the 19th century.

UNIT:-VIII

Contemporary practices in Indian art during the 20th & 21st centuries with reference to art movements & major exponents; modern concept of advertising, designing and visual communication; experimental modes in contemporary visual expression; development of art education in India from colonial (British) art schools till the present.

UNIT:-IX

The study of art in the Far East, South East and Central Asia and the ancient Near-East

UNIT:-X

Understanding visual practices of traditional communities and their contemporary transformations – the 'folk', 'tribal' and craft practices in India

Syllabus for Visual Arts Electives

Elective: I: Art History

Principles of Art Historical methodology – Formalism; Iconology; Semiotic analysis; Psychoanalytic method in Art History; Gestalt Theory of Visual Perception; impact of theories in class and gender on the discipline; Deconstruction and its transformative role for Art History; contemporary shifts towards a "New" Art History; art history as an evolving discipline in India from colonial period to post-Independent era; introduction of curatorial practices – confluence of museum, gallery and art history; aesthetic theories and their relevance to art historical/critical analysis of the visual object

Indian Iconography:

Antiquity of image worship in India and principles of iconometry; iconography and its development through Vedic to Brahmanical images: Indra, Surya, Agni, Varuna, Kubera, Yama, *Ashta-dikpalas*, Vishnu, Shiva, Shakti, the *Saptamtrikas*, Kartikeya, Ganesha, and river goddesses (Ganga and Yamuna) etc.

Buddhist iconography: the evolution of the Buddha image (including *Dhyani* Buddhas, *Manushi* Buddhas, etc.), Bodhisattva (Avalokiteshvara, Manjushri, Maitreya etc.), Tara, Kubera etc.

Jain iconography: Tirthankara (Adinath, Parshvanath, Neminath, Mahavira), Bahubali; Ambika, Saraswati, Yaksha and Yakshi (in the Jain context) etc.

Indian Sculpture (pre-modern developments):

A comprehensive study of early Indian sculpture from Indus valley civilization to the post-Gupta period – dynasties like Maurya, Sunga, Satavahana, Kushana, Gupta, Pala-Sena, Chandela, Solanki, Parmar, Chalukya, Pallava, Rashtrakuta, Ganga, Chola, Hoysala, etc..

Indian Architecture:

Early Indian architecture (with reference to ancient literature and *shilpa* texts): Indus valley; Maurya

Origin and development of the stupa: Bharhut, Sanchi, Sarnath and Amaravati
Evolution of rock-cut caves (Lomas-rishi, Khandagiri, Udaigiri, Bhaja, Karle, Kanheri, Ajanta, Elephanta, Ellora and Mamallapuram)

Evolution of temple architecture & their classification into *Nagara, Dravida* and *Vessara* categories: Gupta temples; Orissan developments (Parashurameshwara, Mukteshvara, Lingaraj and Konark); Chandella, Pratihar, Parmara and Solanki temple styles; Chalukyan, Rastrakuta and Hoysala temple architecture (including Virupaksha, Kaliashnatha in Ellora, Hoyasaleshvara; Pallava monolithic and structural temples; Chola temples; Martand Sun temple in Kashmir

Imperial architecture during Sultanate & Mughal rule: features of provincial Indo-Islamic architecture; Mughal architecture (Humayun's Tomb, Fatehpur Sikari and Sikandra, Taj Mahal, Red Fort and Jama Masjid)

Colonial & Modern architecture: Le Corbusier, Charles Correa, B.V. Doshi and others.

Indian painting (pre-modern developments):
A comprehensive study of pre-historic painting, wall paintings at Ajanta and later mural tradition (Bagh, Badami, Ellora, Sittanvasal, Lepakshi, Kerala murals such as Mattancherry palace etc.); manuscript painting & the miniature traditions: Eastern and Western Indian manuscripts; Sultanate painting (the *Chaurpanchasika* and pre-Mughal schools), Mughal miniature painting from Akbar to Shah Jahan; Rajasthani miniature painting; Pahari miniature painting ; Deccani painting (Ahmednagar, Bijapur and Golconda).

Modern Indian Art:
Modernity in Indian Art; Ravi Varma; E.B. Havell, A.K. Coomaraswamy, Stella Kramrisch, Abanindranath Tagore and the "Bengal School"; Nandalal Bose, Benodebehari Mukherjee and Ramkinkar Baij; Amrita Sher-Gil; Jamini Roy; the 1940s artists' collectives: Calcutta Group (Kolkata), Progressive Artists Group (Mumbai), Delhi Shilpi Chakra (Delhi), Cholamandala Artists' Village (Chennai); Indigenism and the trends in 1950s and 1960s; trends in abstraction since the 1970s; the 20th & 21st century contemporary trends towards globalization (including the introduction of installation, performance, digital/video etc.) with a study of select individual artists

Western Art:
Overview of Western art from prehistory to the present: Prehistoric art, art in ancient Egypt, Aegean art, Greece and Rome; Early-Christian and Byzantine art; Romanesque and Gothic art; Renaissance painting and sculpture; Mannerism and Baroque painting and sculpture; Rococo, Neoclassicism and Romanticism; Modern movements including Realism, Impressionism, Post-Impression, Fauvism, Expressionism, Cubism, Constructivism, Futurism, Dada and Surrealism, Abstract Expressionism, Op art, Pop art; Post-modern developments

including, Minimal and Conceptual Art, Fluxus movement, Arte Povera, Body art, Land and Environment Art, Graffiti, Process art, Performance art, Installation, Neo-figuration, Happening, Feminist and Gay art.

Art of Ancient Near-East:
Visual expression from ancient Mesopotamia (Sumer, Akkad, Babylonia, Assyria); art in Achaemanid and Sassanian Persia.

Art of Far East, Central and South-East Asia:
Introduction to cultural exchange between India and these ancient cultures and the emergence of distinctive visual expressions: ancient China (Shang, Zhou, and Han dynasties); Buddhist sculpture from upto Tang dynasty; Six Dynasties and Tang painting; Chinese landscape tradition from Song to Qing; Japan (*Haniwa* pottery figures; Buddhist sculptures from Nara to Kamakura periods); late Heian and Kamakura painting including the *Tale of Genji* and the *Heiji Monogatari Emaki* scrolls; Japanese scroll painting in the Momoyama & Edo periods; *ukiyo-e* woodblock prints from the Edo period); Tibet (Buddhist icons and the *thangka* painting tradition); Nepal (Buddhist and Brahmanical sculptures and painting); Sri Lanka (sculpture and painting – including Sigiriya murals); Cambodia (sculpture and architecture, especially Angkor Wat and Angkor Thom); Java (sculpture and architecture, including the Dieng plateau *candi*-s, the Borobudur stupa, and Prambanan complex); Buddhist art in Myanmar/Burma and Siam/Thailand etc..

Indian Folk and Tribal Art:
Phad, *Pichhwai* and *Kavad* painting (Rajasthan); *Pata* painting in Bengal and Orissa; Madhubani/Mithila painting (Bihar), Warli painting (Maharastra), Pithora painting (Gujarat); *Dhokra* bronze casting; votive terracotta objects (including votive horses offered across various states in India); wood carving and wooden dolls (Kondapalli, Karnataka, Bengal, Madhya Pradesh); leather puppets (Andhra Pradesh, Karnataka); traditional and modern textiles and functional objects (textiles of Banaras, Kanchipuram, Gujrat, Orissa, and the North-Eastern states; tie-and-dye fabrics; embroidery; *kantha*, *Phulkari*, Chamba *rumal*; metal-ware including Bidri, repousse, enamelling; jewellery including jade, beads etc.

Elective-II: Drawing and Painting

Aesthetics:
Fundamental elements of drawing and painting. Imagery in visual arts. Origin and development of art (visual). Classification of Arts. Conceptual and Visual reality.

Relevance of study of aesthetics in painting: The early philosophical thoughts in Indian Culture. Nature and Function of Art in the society.

Indian aesthetics: Concept of Ras-Sutra and its commentaries: The Theory of Rasa,

Sadharanikarana, Dhvani, Alankara, Auchitya,etc; *shilpa* texts like the *Chitrasutra* of the *Vishnudharmottara Purana*, *Shadanga* from Yashodhara's commentary on the Kamasutra, etc.; A.K. Coomaraswamy and Rabindranath Tagore's contributions towards Indian aesthetics

Western Aesthetics: Theory of imitation and representation, catharsis (Plato and Aristotle). Aesthetical views of Kant, Hegel, Croce, Tolstoy, Baumgarten, Schopenhauer, Clive Bell, Roger Fry, I. A. Richards, Susanne Langer, Sigmund Freud, and George Santayana.

History of Drawing and Painting:

Indian painting: Prehistoric Paintings in India, Wall paintings of Ajanta, Bagh, Badami and Sittanavasal.Manuscript painting tradition Pala and Western Indian.Tradition of Miniature paintings: Pre-Mughal, Mughal, Rajasthani, Pahari (Basohli, Guler-Kangra and Garhwal) and Deccani painting (Ahmendagar, Bijapur & Golconda). Company School of painting. Advent of Modernism with Raja Ravi Varma, Bengal School: Abanindranath Tagore and his disciples, Nandalal Bose and his disciples.

Breakthrough in Indian painting: Contribution of Amrita Sher-Gil. Progressive artist group – Bombay, Calcutta Group – Calcutta, Shilpi Chakra – Delhi, Chola mandala – Madras and Baroda School – Baroda.

In Indian Art the Major trends of Indigenous since 1970, Contemporary painting and eminent artists: Impressionistic, Expressionistic, Abstraction, Decoration, Neo-Tantric, Figurative and Non-figurative, Surrealistic, Representational and Non-representational painting.

Western Painting: Prehistoric paintings of France and Spain. Egyptian, Aegean Art, Greece and Roman painting. Byzantine, Gothic, Renaissance, Mannerism, Baroque, Rococo, Neo-Classicism, Romanticism, Realism, Impressionism, Post Impressionism, Fauvism & Symbolism, Cubism, Futurism, Dada & Surrealism Expressionism, Abstract Expressionism, Op and Pop Art, Minimal Art & Post Modern Trends, New Media, Installation and Illusory Hyper Realism, etc.

Material and Method:

Application of Materials, Support in Painting (Canvas, Paper, Wall surface, Panels), Mix media. Oil painting and its technique – Traditional and Non-traditional. Techniques of Wall paintings – Traditional (Fresco Secco and Buono) and Modern. Water color painting, wash technique, pastel and crayon, Acrylic color, color preparation and technical aspect of pigments. Color theory and color harmony.

Art Schools and Art Education:

The introduction of formal training in art through Colonial Art Schools, and the transition from Colonial understanding to Post-Independent art education in the art schools at Chennai, Kolkata, Lahore, Mumbai, Delhi, Lucknow, Jaipur; art promotion and education through art academies; rethinking institutional art education at Santiniketan and Baroda; role of art

galleries and museums in art education; increase in curatorial venture as a collaboration between the museum, galleries and practicing artists and historians; role of art journals and magazines in the dialogue between viewing public and the artist.

Elective III: Applied Art

Elements & principles of design

The term 'Graphic Design' and William Addison Diggings; Basics of Graphic Design/Applied Art: Image and Text; Developing message to promote product.

Terms and terminologies relevant to advertising Industry: Understanding of the 'Portmanteau' terms such as, Advertorials, Info graphics, Infomercials, Edutainment etc.

Innovations and Movements

History of advertising in India and rest of the world; Calligraphy, Advent of moveable types, Typefaces, fronts and families; Architecture and anatomy of letters; Classifications of types and size, Early Typographers and study of traditional hand writing and script like Indian manuscripts, Persian, Chinese, Japanese and Roman etc.

Development of printing processes in India and rest of the world: letterpress, gravure, silk-screen and Offset etc.

Movements that influenced graphic design: Art Nouveau, The Art of War), The ISMs of Art: Futurism, Dada, De Stijl, & Constructivism, Art and Craft movement, Bauhaus movement and new typography, history of graphic design and the nature of advertising history, Illustrated Modernism & Psychedelia, New Wave and Post Modernism, Digital Expressionism & Postscript, The Digital Future.

Advertising forms and media

Print, outdoor, electronic and new media advertising; Media Options: newspapers and magazines, radio, TV and cinema, posters, Direct Mail, Ambient and Guerrilla advertising, digital and online advertising. Viral Advertising. Boom in Outdoor advertising: billboards and transits, innovative Materials and advantages.

Emergence of Poster as a 'new genre of art': Study of posters with reference to Poland, Japan, UK and America and Bolshevik Russia. Placards and propagandas, Protest and Wartime posters, Subway culture.

Cultural frames of advertising phases: Idolatry, Iconology, Narcissism, and Transition from 'Totemism' (the fourth cultural frame) to 'Mise-en-Scene' (Fifth Frame); Evolution from Traditional to Industrial to Consumer society & development of communications media. Future of advertising and advertising agencies. Blurring the lines between advertising and entertainment

The impact of Graphic Design with advance technology; Re-defining "Graphic design"; Attributes needed by the modern designers.

Design, campaign and packaging

Designing of logo, rebus, symbol, mark and corporate identity; stories behind the development of most well-known symbols/identities the world; Brands, rebranding and brand positioning; Precursors and prophets of advertising theories and principles; Designing events –Event Mascots and other global entertainments, films and festivals.

Campaign planning and strategy: the client, market research, account planning, creative brief.

Developing visuals and messages for print-ads (newspaper and magazines), Direct Mail, posters, outdoor advertising (billboards and transits), merchandising, show-windows and supermarket items (Point of sales / Point of Purchase items, dispensers, stands, stalls etc.)

Media selection, Approaches& the target audience. Innovations in media. New technologies, TV graphics, multimedia presentation, web-page designing and understanding of rector and vector software; Internet – its use in advertising products and services, net marketing.

Prepress, Printing presses, and Post-press: manipulations of pixels and resolutions, colour corrections, knowledge of computer-to-plate graphic reproductions, offset printing, Finishing and Converting. Additive and subtractive colours, four colour printing mechanics, Spot Colours and Lainations, UVs etc.

Design of packaging, merchandising and novelties.

Advertising corporate and new trends

Origin and growth of advertising agencies: Role and responsibilities of a Graphic designer. Creative core: Creative/Art Director, Visualizer, and Copywriter, interaction in developing concepts.

World's leading Advertising Corporates, Multinationals and Indian scenario: Indian Advertising Agencies with all India branches. Ad-Gurus or remarkable Ad-Men and epoch making advertising campaigns by them. Highest honours, Awards in the advertising creativity and extraordinary contribution.

Famous designers of the world on branding and corporate identity design, Film titles.

Interdisciplinary participation approach with disciplines of art, collaboration and internship with industries and corporates.

Computers and its role in creating new visual effects (Photography, Digital Graphics, Film titles, Multimedia presentations, Image Editing, Web Graphics and types of online Advertising, Web page designing); Importance of market research in advertising. Print media vs. Electronic Media.

Elective –IV: Printmaking (Graphic Art)

Aesthetics and history:

Understanding of fundamentals of visual art (space, form, size, shape, line, colour, texture, tonal values, perspective, design and aesthetic) in relation to print making.

Understanding visual principles of composition (proportion, unity, harmony, rhythm, contrast, balance and emphasis). Reproduction of two dimensional identical prints.

Knowledge of history, invention, development and definition of print making (Graphic Art) process, techniques and materials in Asia and Europe. Japanese woodcuts and important masters of *Ukiyo-e* School and works of masters such as Hokusai, Hiroshige, Utamaro etc.

Print making as a mode of creative expression during 19^{th} –20^{th} century from book production to establishing of atelier/workshops, groups, experiments and influences on advertising.

Mode, medium and process:

Knowledge of types of print making techniques (i) wood-cut and lino-cut (ii) intaglio- wood and metal (iii) etching – line, aquatint, soft ground, etc. (iv) surface printing (planography, offset, oleograph etc.), (v) stencil and serigraph (iv) other techniques- colography, *chine-collé*, monoprint, unique print, dry-point, engraving, mezzotint, viscosity, digital imaging, mix medium etc.

Knowledge on use of different kinds of mediums, materials and printing process used in print making (wood, lino, copper, zinc, plywood, stone, acrylic, paper, cardboard, gum, acids, chemicals, ink, resin, software, tools, machine, equipment etc. Preparation of different types of surface from identification of material to designing till printing.

Work of art:

Knowledge of works of master print makers and their contribution in development of printmaking from historic to modern like Durer, Rembrandt, Hogarth, Goya, Gauguin, Degas, Lautrec, Daumier, German expressionists (Kathe Kollwitz, Nolde, Heckel, Grosz, Munch etc.), Picasso, Pop and figurative artists (Rauschenberg, Lichtenstein, Jim Dine), David Hockney, Krishna Reddy, Peter Daglish, Stanley Jones, Paul Lingren, Carol Summers etc.

Development of Printmaking in India, contribution and influence of British during colonial period, establishment of press and schools, popular printmaking in mid-19th century till pre independence. Print making trends in India post independence.

Contribution of Indian print makers: Raja Ravi Varma, member of Vichitra club, Mukul Dey, Gangendranath Tagore etc. Santiniketan School, Nandalal Bose, Binode Behari Mukherjee, Ramkinkar, Biswarup Bose, Ramen Chakraborty, Haren Das, Somnath Hore, Chittaprasad, Jyoti Bhatt, Kanwal Krishna, Devyani Krishna, Y.K. Shukla, Vasant Parab, Jagmohan Chopra, Paramjeet Singh, Lalita Lajmi, Naina Dalal, Laxma Goud, R.B. Bhaskaran, R.M. Pallaniappan, Sanat Kar, Lalu Prasad Shaw, Amitabh Banerjee, Debraj Dakoji, Bhupen Khakhar, Waman Chincholkar, Paul Koli, Deepak Banerjee, Jai Zharotia, Prayag Jha, Rini Dhumal, Anupam Sud, Jayant Parikh, Kanchan Chander etc.

Print and issues:

Good quality prints - criteria (technically and aesthetically), conventions to identify the authenticity of prints – signature, editions, artists proof etc. Display - mounting and preservation of prints. Various issues related to the contemporary printmaking (mechanical production, computer graphics, influences of advertising, atelier, workshops and groups etc.)

Elective –V: Sculpture

Elements & principles of sculpture

Fundamentals and elements of sculpture; origin and development of imagery in sculpture; classification of sculpture; sculptural form vis-a-vis conceptual reality.

Relevance of the study of aesthetics for sculptural practice: the early philosophical ideas in India and the West; the role and function of sculpture in the society.

History of sculpture in Western and Oriental traditions; traditional sculptural program as integral part of architectural structures such as churches, temples and secular buildings
Study of form, material, methods, and techniques relevant to sculptural practice; clarity of understanding of terminologies related to the art of sculpture.

Study of varied media in sculptural practice:

1. Clay and wax
   Preparation of natural clay for sculpture; modelling and casting with clay; terracotta & firing of clay; types of kilns; possibilities in the range of colours and pigments in ceramic works; two-dimensional and three-dimensional modes in clay sculptures; modelling and carving in wax.

2. Plaster of Paris (POP)
   History, chemical composition and physical nature of POP; advantages and disadvantages of working with POP; accelerating and retarding agents; surface treatment of POP; casting and carving in POP.

3. Wood
   Nature and varieties of wood; carving tools and methods of carving for sculpting in wood; seasoning and preservation of wood; finishing and staining of wood.

4. Stone
   Origin of sculpting in stone; tools and equipment, methods and approach relevant to stone carving; treatment and preservation of stone against weathering.

5. Metal
   History of metal sculptures; processes involved in the use of metal as medium for sculpture; physical properties and classification of metals as ferrous and non-ferrous, alloy, etc.; bronze as the primary sculptural metal; the Lost-wax method (*cire-perdue*); indigenous methods including "gravity casting", "sand casting", etc.; melting points of metals; surface treatment viz. anodising, oxidation and patination; welding and forging processes for working with metals; preservation of metal sculptures.

Assemblage and Installation

History & background of mix-media; new hybrid forms of 1960's and more recent developments; public sculptures; environmental art.

Monumental sculpture:

Scope, problems, limitations, concept and development; eminent exponents such as D.P. Roychowdhary, Ramkinkar Baij, Prodosh Dasgupta, Sankho Chaudhurai, Piloo Pochkhanawla, Chintamoni Kar, Sarbari Roy Chowdhury, Amarnath Sehgal, Dhanraj Bhagat, Kanayi Kunhiraman, M. Dharmani, Nagji Patel, Balbir Singh Katt.

Contemporary Indian Sculptors:

Combine indigenous knowledge with new materials and techniques; select individuals – B.C Sanyal, Somnath Hore, K.G. Subramanyan, Biman B. Das, Meera Mukherjee, Raghav Kaneria, Himmat Shah, Latika Katt, Jeram Patel, Ajit Chakraborty, Sushen Ghose, Satish Gujral, Ved Nayar, P.V Janakiram, Shiv Singh, Balan Nambiar, S. Nandgopal, Mahendra Pandya, Rajnikant Panchal, Mrinalini Mukherjee, K.S. Radhakrishnan, S. Nandgopal, Dhruva Mistri, Pritpal Singh Ladi, Anita Dube, Ravindra Reddy, N.N. Rimzon, Pushpamala N., Sudarshan Shetty, Subodh Gupta , Anish Kapoor, etc.

Contribution of select modern & contemporary sculptors from the West:

Honore Daumier, Auguste Rodin, Camille Claudel, Paul Gauguin, Aristide Maillol, Antoine Bourdelle, Henri Matisse, Ernst Barlach, Constantin Brancusi, Pablo Picasso, Aleksandr Archipenko, Raymond Duchamp-Villon, Jacques Lipchitz, Henri Laurens, Umberto Boccioni, Vladimir Tatlin, Naum Gabo, Sophie Tauber, Jean Arp, Max Ernst, Antoine Pevsner, Alexander Calder, Henry Moore, Barbara Hepworth, David Smith, Louise Bourgeois, Isamu Noguchi, Alberto Giacometti, Cesar, Marino Marini, Lucio Fontana, George Segal, Claes Oldenburg, Anthony Caro, Tony Smith, Donald Judd, Carl Andre, Eva Hesse, Duane Hanson, Judy Chicago, Joel Schapiro, Barry Flanagan, Georg Baselitz, Jimmie Durham, Jeff Koons, Kiki Smith.

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Subject: PERFORMING ARTS – DANCE, DRAMA, THEATRE

Unit 1. Cultural History of India

- Cultures of India from pre-historic to CE 1200
- Evolution of Art in pre-historic and historic periods, as evidenced in cave paintings, sculptures and other visual representations
- Evolution of dance and drama (*Natya*), (a) the divine origin theory according to *Natyasastra*, and, (b) art as a product of society, its rituals and belief systems
- The *Vedas*, major epics and *puranas* (Ramayana, Mahabharata, *Cilappadikaram* and *Bhagavatapurana*) in terms of their content, character and relevance to dance and theatre
- Bhakti and various religious movements and their influence on different representative aspects of culture with focus on dance and theatre

Unit 2. Folk and Traditional Theatre Forms of India

- Understanding and defining the terms Tribal, Folk, Traditional and Classical in the context of Indian dance and drama and their interrelation
- Introduction to the different tribal, folk and traditional dance and theatre forms spread over various regions of India
- Introduction to regional theatrical practices of *Kudiattam, Yakshagana, Bhagavatamela, Tamasha, Ramalila, Rasalila, Bhavai, Nautanki, Jatra, Chhau, Laiharaoba, Therukoothu, Theyyam, Ankia-nat, Pandvani, Chindu Bhagavata, Bhand Jashan* and others
- Awareness of various musical instruments, costumes and make-up used in these forms

Unit 3. The Natyasastra

- Knowledge of *Natyasastra* and the concept of *Natya* and *Nritta*
- Study of chapters relating to the eleven aspects (*ekadash sangraha*) such as, *Abhinayas, Dharmis, Vrittis, Pravrittis* and *Aatodyas. Samanya* and *Chitrabhinayas* and their classification
- *Dasarupakas*
- *Natyagruha* (Playhouse) and *Ranga* – Construction, types and different elements
- *Poorvarangavidhi* and Stage conventions viz. *Kakshya vibhag* etc.

Unit 4. Art and Aesthetics

- '*Rasasutra*' of Bharata
- Elaboration of the theory of *Rasa* by commentators like Bhattalollata, Sri Sankuka, Bhattanayaka and Abhinavagupta.

- Rasa and its constituent elements, viz., *Sthayi*, *Sanchari* and *Sattvika bhavas* and their corresponding *Vibhavas* and *Anubhavas*
- Definition, purpose and elements of Art
- A brief introduction to Performance studies and significant western theories on Art : 'Art as Imitation/Catharsis' , 'as Imagination', 'as Beauty', 'as Communication' and 'as Utility' put forth by various Philosophers

Unit 5. Dance and Theatre forms of East and South Asian Countries

- An overview of dance and theatre forms of East Asian (China, Japan and Korea), South Asian (Bangladesh, Pakistan and Sri Lanka) and South- East Asian (Indonesia, Thailand, Vietnam, Cambodia, Myanmar, Philippines and Laos) countries
- History and presentation techniques of various popular theatre and dance forms of the above countries

DANCE

Unit 6. Dance in Sanskrit Literature and Treatises

- A brief study of references to dance in the works of Kalidasa, Bhasa, Sudraka and others
- General understanding of the concepts relating to dance from texts of ancient and medieval period- *Natyasastra*, *Abhinaya Darpana*, *Sangeeta Ratnakara*, *Nritta Ratnavali* and *Nartana Nirnaya*. Concepts include *Natya*, *Nritta*, *Nritya*, *Lasya*, *Tandava*, *Marga*, *Desi*, *Baddha*, *Anibaddha*, *Nartaki lakshana*, *Sabha lakshana* and the like. Also specific study of the *padas*, *hastas*, *caris*, *mandalas* and *karanas*, and *anga*, *upanga* and *pratyanga* movements
- Detailed study of *Abhinaya Darpana* along with introduction to other region/form specific texts like *Hasta Lakshana Deepika*, *Balarama Bharatam*, *Abhinaya Chandrika*, *Srihasta Muktavali* and others
- The various categories and typologies of *Nayakas* and *Nayikas* and their *avasthas* according to Bharata's *Natyasastra*, Saradatanaya's *Bhavaprakasana*, Bhanudatta's *Rasamanjari* and Akbar Shah's *Sringaramanjari*

Unit 7. India Classical Dance

- Origin and history of Indian classical dance
- Evolution, technique, costumes, music, Gurus and pioneers of Bharatanatyam, Kathak, Kathakali, Kuchipudi, Manipuri, Mohiniattam, Odissi and Sattriya
- General understanding of major Talas of Hindustani and Carnatic music traditions
- A brief study of Composers/*Vaggeyakaras* and their works including Jayadeva, Narayanateertha, Surdas, Meera Bai, Tulasidas, Vanamalidas, Kshetrayya, Srimanta Shankar Deva, Govindadas, Vidyapati, and others.

- Study of the role of Rabindranath Tagore, Rukmini Devi Arundale, Vallathole Narayana Menon, Madame Menaka and others in the revival and reconstruction of classical dance

Unit 8 Indian Classical Dance in Independent India

- An overview of major Gurus, performers, their works and important institutions in Independent India
- Institutionalization of dance and its effect on form, pedagogy, repertoire etc.
- The new wave in Indian dance - Its development through the works of Uday Shanker and Ram Gopal and the later major contemporary artists and their works. (eg. Shantibardhan, Narendra Sharma, Sachin Shanker, Mrinalini Sarabhai, Maya Rao, Kumudini Lakhia, Manjusri Chaki Sarkar, Chandralekha, Astad Deboo and others)
- Indian classical dances in diaspora
- Patronage to Dance- the role of government and private bodies
- Awareness of important dance festivals, awardees and current happenings in dance

Unit 9. Dance Education, Pedagogy and Research

- Dance as part of curriculum in school education and Universities
- Movement Analysis based on kinesthetics and Laban system
- Eminent scholars and their works, who contributed significantly to the knowledge of Indian dance
- Key inroads in dance training and research in India from the 1930's to the present like applied areas of dance, therapy, cross- cultural training etc.

Unit 10. International dance and interactions

- Study of the history and development of classical ballet in Europe, Russia and America
- Emergence of Modern Dance in the west and major personalities involved
- Influence of the West on Indian dance in terms of production design

DRAMA/THEATRE

Unit 6. Drama and its theories: Indian and Western

- Concept of drama- Indian and Western
- Elements and structure of drama according to Indian and Western Dramaturgy
- A brief study of different classifications of Western dramas – Tragedy, comedy, tragic comedy, melodrama and farce
- A brief introduction to various 'isms' in relation to drama including realism, naturalism,

symbolism, expressionism, absurd and epic

- Playwrights and their contribution:
  Sanskrit – Kalidasa, Bhasa, Sudraka, Bhavabhuti, Visakhadutta, Bhattanarayana;
  Ancient Greek and Roman – Aeschylus, Sophocles, Euripides, Aristophanes, Seneca
  Western – Shakespeare, Moliere, Ibsen, Brecht, Pirandello, Miller, Chekov, Beckett, Ionesco

Unit 7. Modern Indian Theatre

- Origin and development of modern Indian theatre with reference to region, state and personalities
- A brief study of new trends in theatre since Independence movement both at national and regional level, such as, IPTA movement, Navanatya movement, Root Theatre movement, Third Theatre, Alternate theatre, Street theatre, Theatre of the Oppressed, Applied theatre, Forum Theatre, Site Specific theatre
- An overview of major playwrights, directors and other contributing personalities of various regions, whose plays are widely performed at the national level.
- Popular Play Houses, Theatre Companies, Institutions and Groups in India and their contribution

Unit 8. Acting and Direction

(A)

- Different schools of acting – Western and Eastern
  1. Early period- Greek, Roman, Elizabethan, Commedia Dell' arte
  2. Modern Period – Representational, Stanislavsky, Meyerhold, Brecht, Grotowski
  3. Eastern – Sanskrit, Peking Opera, Noh, Kabuki

- Role of Mime, Voice, Speech, Improvisation and Physical Theatre in actor's training

(B)

- Different directorial innovations and methods
- Role of director in Theatre
- Fundamentals of play direction: Balance, emphasis, composition, picturisation, movement, tempo and rhythm
- Process of production: Script to performance

(C)

- Ideas on Production
  1. Realistic : Duke of Sexe Meiningen, Stanislavsky, Elia Kazan, Antione
  2. Non-realistic : Brecht, Meyerhold, Peter Brook, Augusto Boal
- Impact of above ideas on post independent Indian Theatre movements

Unit 9. Theatre Design and techniques

(A)

- Theatre architecture: Greek, Roman, Elizabethan, Thrust Stage, Proscenium, Arena, Open Stage.
- Sanskrit : Vikrishta – Madhyam Natyagruha

- Chinese, Japanese play houses of classical era

(B)

- Stage craft: Fundamentals and functions of sets, lights, costumes, make-up, sound, props, other arts and theatre music in terms of various kinds of play production
- Aharya and Nepathya vidhi in classical Indian, Chinese, Japanese and Indian Traditional theatre

(C)

- Theatre management and organization

(D)

- Children's theatre, applied theatre, community theatre, theatre in education, theatre of oppressed and feminist theatre

Unit 10: Theatre Education, Pedagogy and Research

- Theatre as part of curriculum from primary education and in University system
- Relevance of traditional theatre training
- Movement analysis based on kinesthetics, Yoga, Theatre Game, Martial Arts, Folk, Puppetry and other forms
- Eminent scholars and their works who contributed to the knowledge of Indian Theatre
- Trends in Indian Theatre research and scholarship in India
- Patronization to theatre- major institutions, organizations, Government, corporate, private bodies and personalities after independence
- Awareness of important theatre festivals, Awardees and current affairs in theatre

Work Education

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- Meaning of Work- Work and Livelihood,
- Work and Happiness and Satisfaction,
- Work in Education-Concept of work education and meaning,
- Historical perspectives, post independence status of various commissions, NCF-2005, NEP 2020
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- Psychological basis for work in education: Dewey, Piaget, Vygotsky • Constructivism and Work Education

2. Objectives, Methods and Evaluation for Work Education

- Essential and Elective Work Education
- Techniques/ methods of Teaching work education.
- Objectives, Need and Significance of Work Education
- Concept of reduce, recycle and reuse and its significance
- What is Evaluation, Assessment and Evaluation, Continuous and Comprehensive education, Equipment and methods of Evaluation
- Role of Classmates, parents, principal in work education.

3. Integrating Work Education with Curricular Subjects •

- Theories of integrated education and its educational implications
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- Theories of integrated education and its educational implications
- Work as a Pedagogic Medium of Knowledge, Values and Skills: Learning from Field Experiences,
- Community Work and Social Engagement as Curricular Components: Learning from Field Experiences

- Planning lessons integrating work in education Typology of Work in Education, Learning from field experiences, Community work and social engagement.
- Method of Teaching Learning activities related with work education

4. Management and World-

- Fundamentals of Management, Personal Management & Time Management , Personality Development,
- Storage and management of materials and tools. Selection and Co-ordination of material related with work education in reference to Primary Classes.
- Planning of sessions of work education for different classes, Globalization, Work and knowledge,
- Gender and Disability related issues,
- Work Education and Economic Development, Problems and suggestions for improvement of work education

5. Work Education in Schools and Community:

- Place of Work Education at School Level, Criterion for the selection of work education in schools, Concept of Multipurpose schools and their role in work education,
- Principles of management of work education in school.
- Need & Importance of Instructional Material and its types required for work education. Community and its role in reference to work education,

6. Core and Elective Areas of Work Education-

- Meal Planning and Preparation
- Food Processing and Catering Management ,.
- Home Management and Interior Decoration ,.
- Child care and Crèche Management ,.
- Textile Designing .
- Elements of Dress Designing ,
- Commercial Art . Craft Work .
- Preparation of Specific items and their value addition.

- Computer Applications ,
- Typewriting ,
- Book Office Routine and Practices ,
- Repair and maintenance of Electrical Gadgets ,Repair and maintenance of Simple Electronic Devices , Gardening and Vermicomposting