



GOVERNMENT SERCHHIP COLLEGE

COURSE OUTCOMES (COs) PROGRAMME OUTCOMES (POs) PROGRAMME SPECIFIC OUTCOMES (PSOs)

Based on NEP Syllabus

Prepared by
Internal Quality Assurance Cell (IQAC)
Government Serchhip College

*Motto: SEEK AND FIND
ESTD - 1973*

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DEPARTMENT OF BOTANY		
COURSE CODE	COURSE NAME	COURSE OUTCOME
I SEMESTER BOT 100 (Major)	Phycology and Mycology	<p>CO1. Explain the life histories, classification (Fritsch), cell structure, thallus organization, reproduction and economic importance of algae, with special reference to <i>Nostoc</i></p> <p>CO2. Describe the general characteristics of major algal groups (Chlorophyceae, Phaeophyceae, Rhodophyceae) and analyse the structure, reproduction and life cycles of <i>Chara</i>, <i>Ectocarpus</i> and <i>Polysiphonia</i></p> <p>CO3. Explain the general features and classification of fungi (Ainsworth, 1973), including characteristics of major groups (Mastigomycota, Ascomycota, Basidiomycota and Deuteromycota), and describe the structure, reproduction and life cycles of <i>Rhizopus</i> and <i>Agaricus</i></p> <p>CO4. Describe the distribution, structure, types and reproduction of <i>mycorrhiza</i> and <i>lichens</i>, and evaluate the economic importance of fungi, lichens and symbiotic associations.</p> <p style="text-align: center;">PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop a comprehensive understanding of algal diversity, classification systems and life cycle patterns, enabling identification and comparative analysis of major algal groups.</p> <p>PSO2. Analyse structural organization and reproductive strategies in algae,</p>

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		<p>linking morphology with ecological adaptation and evolutionary significance.</p> <p>PSO3. Evaluate fungal diversity, classification and life histories, and understand their ecological roles, including decomposition, parasitism and symbiosis.</p> <p>PSO4. Assess the applied and economic importance of algae and fungi, including their roles in agriculture, industry, environment and symbiotic systems such as mycorrhiza and lichens</p>
<p>I SEMESTER</p> <p>BOT101 (Minor)</p>	<p>Economic Botany</p>	<p>CO1. Explain the origin of agriculture, Nikolai Vavilov's centres of origin and diversity of crop plants, and describe germplasm conservation, plant quarantine, and the tapping, processing and uses of natural rubber</p> <p>CO2. Describe the morphology and economic uses of selected crops including cereals (<i>Oryza sativa</i> – rice, <i>Zea mays</i> – maize), pulses (<i>Cajanus cajan</i> – pigeon pea, <i>Glycine max</i> – soybean), legumes (<i>Psophocarpus tetragonolobus</i> – winged bean, <i>Phaseolus vulgaris</i> – French bean), and explain the morphology, processing and products of <i>Saccharum officinarum</i> (sugarcane)</p> <p>CO3. Explain the uses of economically important plants including spices (<i>Curcuma longa</i> – turmeric, <i>Zingiber officinale</i> – ginger), beverages (<i>Camellia sinensis</i> – tea, <i>Coffea arabica</i> – coffee), oil seeds (<i>Arachis hypogaea</i> – groundnut, <i>Brassica campestris</i> – mustard), fibre-yielding plants (<i>Gossypium spp.</i> – cotton,</p>

		<p><i>Corchorus spp.</i> – jute), and timber-yielding plants (<i>Shorea robusta</i> – sal, <i>Tectona grandis</i> – teak)</p> <p>CO4. Identify medicinal plants based on plant parts and explain their uses, including roots (<i>Rauwolfia serpentina</i>), underground stem (<i>Allium sativum</i>), bark (<i>Cinchona spp.</i>, <i>Taxus spp.</i>), leaves (<i>Aloe spp.</i>, <i>Catharanthus roseus</i>), fruits (<i>Phyllanthus emblica</i>, <i>Carica papaya</i>), and seeds (<i>Cuminum cyminum</i>, <i>Piper nigrum</i>)</p>
		<p>PROGRAM SPECIFIC OUTCOME</p>
		<p>PSO1. Develop knowledge of crop origin, diversity and conservation strategies, including Nikolai Vavilov’s centres and germplasm management</p> <p>PSO2. Analyse the morphology and economic importance of major crop groups including cereals (<i>Oryza sativa</i> – rice, <i>Zea mays</i> – maize), pulses (<i>Cajanus cajan</i> – pigeon pea, <i>Glycine max</i> – soybean), legumes (<i>Psophocarpus tetragonolobus</i> – winged bean, <i>Phaseolus vulgaris</i> – French bean), sugar crops (<i>Saccharum officinarum</i> – sugarcane); spices (<i>Curcuma longa</i> – turmeric, <i>Zingiber officinale</i> – ginger), beverages (<i>Camellia sinensis</i> – tea, <i>Coffea arabica</i> – coffee), oil seeds (<i>Arachis hypogaea</i> – groundnut, <i>Brassica campestris</i> – mustard), fibre-yielding plants (<i>Gossypium spp.</i> – cotton, <i>Corchorus spp.</i> – jute), timber-yielding plants (<i>Shorea robusta</i> – sal, <i>Tectona grandis</i> – teak), and medicinal plants including roots (<i>Rauwolfia serpentina</i>), underground stem (<i>Allium sativum</i>), bark (<i>Cinchona spp.</i>, <i>Taxus spp.</i>), leaves (<i>Aloe spp.</i>,</p>

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		<p><i>Catharanthus roseus</i>), fruits (<i>Phyllanthus emblica</i>, <i>Carica papaya</i>), and seeds (<i>Cuminum cyminum</i>, <i>Piper nigrum</i>)</p> <p>PSO3. Evaluate the role of economically important plant groups such as spices, beverages, oil seeds, fibres and timber in agriculture, industry and trade</p> <p>PSO4. Assess the importance of medicinal plants and plant-derived products in traditional and modern healthcare systems</p>
BOT 110 (MDC)	Plants and Environment	<p>CO1. Explain the scope of ethnobotany in India and describe plant uses with reference to food (<i>Oryza sativa</i> – rice, <i>Triticum aestivum</i> – wheat), fruits (<i>Phyllanthus emblica</i> – Indian gooseberry, <i>Carica papaya</i> – papaya), fodder (<i>Medicago sativa</i> – alfalfa, <i>Zea mays</i> – maize), fibre (<i>Corchorus spp.</i> – jute, <i>Gossypium spp.</i> – cotton) and medicinal plants (<i>Rauwolfia serpentina</i>, <i>Cinchona spp.</i>)</p> <p>CO2. Explain biodiversity, its levels and values, identify biodiversity hotspots, and analyse causes, consequences and conservation methods (in situ and ex situ) of biodiversity loss</p> <p>CO3. Describe the concept and components of ecosystems and explain environmental pollution, including causes, effects and control measures of air, water, soil and noise pollution</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop understanding of ethnobotany and the relationship</p>

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		<p>between plants and human societies, especially in the Indian context</p> <p>PSO2. Analyse the importance of plant groups including food crops (<i>Oryza sativa</i>, <i>Triticum aestivum</i>), fruits (<i>Phyllanthus emblica</i>, <i>Carica papaya</i>), fodder plants (<i>Medicago sativa</i>, <i>Zea mays</i>), fibre-yielding plants (<i>Corchorus spp.</i>, <i>Gossypium spp.</i>) and medicinal plants (<i>Rauwolfia serpentina</i>, <i>Cinchona spp.</i>)</p> <p>PSO3. Evaluate biodiversity, its conservation strategies and the significance of protecting biological resources</p> <p>PSO4. Analyze ecosystem functioning and environmental pollution, and promote awareness of sustainable environmental practices</p>
<p>II SEMESTER BOT 160 (Major)</p>	<p>Bryophytes and Pteridophytes</p>	<p>CO1. Explain the general characteristics, classification (Smith, 1955 and ICN system), and evolutionary trends of bryophytes, including the structure and features of Hepaticopsida, Anthocerotopsida and Bryopsida, with emphasis on sporophyte evolution</p> <p>CO2. Describe the alternation of generations in bryophytes and analyse the thallus structure, reproduction and life history of <i>Marchantia</i>, <i>Anthoceros</i> and <i>Funaria</i>, along with their ecological and economic importance</p> <p>CO3. Explain the general characteristics and classification (Smith's system) of</p>

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		<p>pteridophytes up to family level, and describe the morphology, reproduction and life history of <i>Selaginella</i> and <i>Pteris</i></p> <p>CO4. Analyse the structural and evolutionary features of pteridophytes, including types of steles, heterospory, seed habit and telome theory, and evaluate the distribution, characteristics and economic importance of <i>Adiantum</i> and <i>Azolla</i></p>
		<p>PROGRAM SPECIFIC OUTCOME</p>
		<p>PSO1. Develop a comprehensive understanding of bryophyte and pteridophyte diversity, classification systems and evolutionary relationships</p> <p>PSO2. Study the morphological structures, reproductive strategies and life cycle patterns in bryophytes and pteridophytes, linking them with adaptation and evolution</p> <p>PSO3. Explain the key evolutionary concepts such as alternation of generations, heterospory, seed habit and telome theory in understanding plant evolution</p> <p>PSO4. Study the ecological and economic importance of bryophytes and pteridophytes, including their roles in soil formation, biofertilization, environmental indicators and sustainable applications</p>

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<p>II SEMESTER BOT161 (Minor)</p>	<p>Plant Ecology & Environmental Biology</p>	<p>CO1. Understand environmental factors, population characteristics and community attributes, including frequency, density, cover and life forms, along with ecosystem structure such as abiotic and biotic components, food chains, food webs and ecological pyramids</p> <p>CO2. Explain ecosystem functions including energy flow, biogeochemical cycles of nitrogen, carbon and phosphorus, patterns of ecological succession and the impact of climate change on plants</p> <p>CO3. Describe biological diversity, its levels, causes of biodiversity loss, conservation methods (in-situ and ex-situ), endemism, hotspots and the effects of invasive alien plant species</p> <p>CO4. Discuss natural resources (renewable and non-renewable) and major environmental issues such as greenhouse effect, acid rain, ozone layer depletion, photochemical smog, non-biodegradable pollutants, biomagnification and radioactive waste management</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Learn the basic concepts of ecology, including environmental factors, population and community characteristics and ecosystem structure</p> <p>PSO2. Understand ecosystem processes such as energy flow, nutrient cycling and ecological succession, and their role in</p>
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		<p>maintaining ecological balance</p> <p>PSO3. Recognize the importance of biodiversity, its conservation strategies and the impact of human activities including invasive species on ecosystems</p> <p>PSO4. Identify major environmental problems and natural resource issues, and understand sustainable approaches to manage pollution and conserve the environment</p>
<p>III SEMESTER</p> <p>BOT200</p> <p>(Major)</p>	<p>Genetics and Plant Breeding</p>	<p>CO1. Explain Mendel's laws of inheritance and analyse non-Mendelian inheritance patterns including plastid inheritance and cytoplasmic male sterility, along with intra- and intergenic gene interactions such as codominance, multiple alleles, incomplete dominance, lethal genes, complementary, supplementary, duplicate and epistatic interactions.</p> <p>CO2. Describe chromosome morphology and karyotype concept, and analyse structural chromosomal aberrations (deletion, duplication, inversion and translocation) as well as numerical variations including euploidy and aneuploidy.</p> <p>CO3. Explain the evolution of the gene concept from classical to molecular perspectives, including one gene–one character, one gene–one enzyme and one gene–one polypeptide hypotheses, and discuss sex determination and sex chromosomes in plants.</p>

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		<p>CO4. Describe the principles of plant breeding, including pure line and mass selection, techniques of hybridization, heterosis and theories of hybrid vigour, and evaluate the role of mutation and mutagens in crop improvement.</p>
		<p>PROGRAM SPECIFIC OUTCOME</p>
		<p>PSO1. Develop a comprehensive understanding of genetic principles, inheritance patterns and gene interactions, enabling analysis of variation and heredity in plants.</p>
		<p>PSO2. Analyse chromosomal structure, behaviour and variations, and understand their role in genetic diversity and evolution.</p>
		<p>PSO3. Evaluate the development of gene concepts and mechanisms of sex determination, linking classical genetics with modern molecular understanding.</p>
		<p>PSO4. Apply principles of plant breeding, hybridization and mutation to understand crop improvement strategies and their significance in agriculture and sustainable development.</p>
<p>Practical BOT200 (Major)</p>	<p>Genetics and Plant Breeding</p>	<p>CO1. Demonstrate the techniques used in plant breeding, including emasculation and bagging, and understand their role in controlled hybridization.</p> <p>CO2. Apply Mendel's laws of inheritance by constructing and analysing Punnett squares to predict genetic outcomes.</p> <p>CO3. Identify and describe the structure</p>

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		<p>of chromosomes using photographs and relate their features to genetic function.</p>
		<p align="center">PROGRAM SPECIFIC OUTCOME</p>
		<p>PSO1. Develop practical skills in plant breeding techniques such as emasculation and bagging for controlled pollination and hybridization.</p>
		<p>PSO2. Apply genetic principles through problem-solving using Punnett squares to understand inheritance patterns.</p>
		<p>PSO3. Analyse chromosome structure using visual aids and relate cytological features to genetic behaviour and variation.</p>
<p>III SEMESTER BOT201 (Minor)</p>	<p>Agroforestry, Palaeobotany & Palynology</p>	<p>CO1. Explain the concept, benefits and constraints of agroforestry, and describe systems such as shifting cultivation, silviculture, homestead gardens, alley cropping and the role of multipurpose trees.</p> <p>CO2. Analyse afforestation and deforestation, tree-crop and animal-tree interactions, and evaluate the effects of allelopathy and canopy management practices including lopping, pruning, pollarding and hedging in agroforestry systems.</p> <p>CO3. Describe the scope of palaeobotany, processes of fossil formation, types of fossils and their significance, and explain the geological time scale.</p> <p>CO4. Explain pollen morphology, structure and dispersal, and evaluate the role of palynology in plant taxonomy, allergy studies and forensic science.</p> <p align="center">PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop understanding of agroforestry systems, their ecological and</p>

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		<p>economic significance, and their role in sustainable land-use practices.</p> <p>PSO2. Analyse interactions among trees, crops and animals, and evaluate management practices influencing productivity and sustainability in agroforestry.</p> <p>PSO3. Understand fossil records and geological time scale, and assess their importance in studying plant evolution and past environments.</p> <p>PSO4. Apply knowledge of pollen morphology and palynology in plant identification, environmental studies, allergy research and forensic investigations.</p>
<p>IV SEMESTER BOT260 (Major)</p>	<p>Biochemistry & Cell Biology</p>	<p>CO1. Explain the structure and classification of biomolecules including carbohydrates (mono-, di-, oligo- and polysaccharides), amino acids and proteins, and relate their functions in living systems.</p> <p>CO2. Describe the classification and nomenclature of enzymes, and explain the composition, structure and functions of nucleic acids along with the structure and role of ATP in cellular metabolism.</p> <p>CO3. Explain the overview of cell structure and types (prokaryotic and eukaryotic), cell membrane organization and function, nuclear structure, and analyse the cell cycle, mitosis, meiosis, linkage and crossing over.</p> <p>CO4. Describe the structure and function</p>

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		<p>of cytoskeletal elements and major cell organelles including mitochondria, ribosomes, endoplasmic reticulum, Golgi apparatus and plastids.</p>
		<p style="text-align: center;">PROGRAM SPECIFIC OUTCOME</p>
		<p>PSO1. Develop a comprehensive understanding of biomolecules and their structural organization, enabling analysis of their roles in cellular processes.</p> <p>PSO2. Analyse enzyme function, nucleic acid structure and energy metabolism, and understand their significance in regulating biochemical activities.</p> <p>PSO3. Understand cellular organization, cell division and genetic mechanisms such as linkage and crossing over, and relate them to heredity and variation.</p> <p>PSO4. Evaluate the structure and functions of cell organelles and cytoskeletal components, and understand their roles in maintaining cellular organization and function.</p>
<p>Practical – BOT260 (Major)</p>		<p>CO1. Perform separation of amino acids using paper chromatography and interpret the results based on migration patterns.</p> <p>CO2. Estimate protein concentration using Lowry's method and understand its biochemical basis.</p> <p>CO3. Observe and describe different</p>

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		<p>stages of mitosis in onion root tip cells and relate them to the cell cycle.</p>
		<p align="center">PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop laboratory skills in biochemical techniques such as chromatography and protein estimation.</p> <p>PSO2. Apply analytical methods to interpret experimental results in biochemistry.</p> <p>PSO3. Analyse cell division stages through microscopic observation and relate them to cellular processes and growth.</p>
<p>IV SEMESTER BOT261 (Minor)</p>	<p>Morphology & Embryology of Angiosperms</p>	<p>CO1. Describe the morphological characteristics of angiosperms, including vegetative parts (root, stem and leaf) and floral structures (calyx, corolla, androecium, gynoecium and fruit).</p> <p>CO2. Explain pollination, its types and agents, and analyse sexual incompatibility, its biological significance and methods to overcome incompatibility in plants.</p> <p>CO3. Describe fertilization processes including pollen tube entry, double fertilization and triple fusion, and explain concepts such as parthenocarpy, polyembryony and apomixis.</p> <p>CO4. Explain the structure and</p>

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		<p>development of microsporangium and megasporangium, processes of microsporogenesis and megasporogenesis, and describe male and female gametophytes, embryo development and types of endosperms.</p>
		<p>PROGRAM SPECIFIC OUTCOME</p>
		<p>PSO1. Develop a comprehensive understanding of plant morphology, enabling identification and analysis of vegetative and reproductive structures in angiosperms.</p> <p>PSO2. Analyse pollination mechanisms and reproductive barriers, and evaluate their significance in plant reproduction and crop improvement.</p> <p>PSO3. Understand fertilization processes and reproductive strategies such as apomixis and polyembryony, and their role in plant propagation.</p> <p>PSO4. Evaluate embryological development, including gametophyte formation, embryo development and endosperm types, and relate them to plant life cycles and evolution.</p>

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<p>V SEMESTER</p> <p>BOT300 (Major)</p>	<p>Plant Anatomy & Gymnosperms</p>	<p>CO1. Explain the internal organization of plant body, including types of cells and tissues, classification of simple and complex tissues, tissue systems, and describe the anatomy of dicot and monocot stem and different types of leaves.</p> <p>CO2. Describe cambial activity and secondary growth in stem and root, analyse anomalous secondary growth in selected plants, and explain root–stem transition and anatomical adaptations in hydrophytes and xerophytes.</p> <p>CO3. Explain the classification and general characteristics of gymnosperms, and describe the morphology and reproduction of Cycas, Pinus and Gnetum.</p> <p>CO4. Analyse the distribution, phylogenetic trends and economic importance of gymnosperms, and explain the structure and evolution of ovule along with a general account of archegonia.</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop a comprehensive understanding of plant anatomical structures and tissue organization, enabling identification and comparative analysis of plant organs.</p> <p>PSO2. Analyse growth patterns, secondary growth and anatomical adaptations in plants, and relate them to environmental conditions.</p>
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		<p>PSO3. Understand the diversity, morphology and reproductive biology of gymnosperms, and evaluate their evolutionary significance.</p> <p>PSO4. Assess the ecological, economic and evolutionary importance of gymnosperms, including ovule structure and phylogenetic relationships.</p>
Practical – BOT300 (Major)	Plant Anatomy & Gymnosperms	<p>CO1. Identify and describe the primary anatomical structure of stem, root and leaf through microscopic observation.</p> <p>CO2. Analyse anomalous secondary growth in selected plants such as <i>Mirabilis</i> or <i>Dracaena</i> and interpret structural variations.</p> <p>CO3. Study and describe the morphology and reproductive structures of gymnosperms such as <i>Pinus</i> or <i>Gnetum</i>.</p> <p style="text-align: center;">PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop practical skills in plant anatomy through sectioning, staining and microscopic analysis of plant organs.</p> <p>PSO2. Analyse variations in secondary growth and relate anatomical differences to plant development and adaptation.</p> <p>PSO3. Understand the morphology and reproductive biology of gymnosperms through hands-on observation and identification.</p>
V SEMESTER BOT301	Plant Systematics	<p>CO1. Explain the origin of angiosperms and analyse different systems of classification including those of Linnaeus, Bentham & Hooker, and</p>

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(Major)		<p>Engler & Prantl, along with concepts of chemotaxonomy and numerical taxonomy.</p> <p>CO2. Differentiate between taxonomy and systematics, and explain the concept of species and hierarchical taxa, along with the principles and rules of ICN including nomenclature, typification, author citation, valid publication and rejection of names, and describe the APG system.</p> <p>CO3. Describe the methods of herbarium preparation and management, explain the functions of herbaria, and identify important herbaria and botanical gardens of the world and India, including the concept of virtual herbarium.</p> <p>CO4. Identify and describe the diagnostic features and economic importance of important angiosperm families such as Brassicaceae, Asteraceae, Solanaceae, Orchidaceae and Poaceae.</p>
		PROGRAM SPECIFIC OUTCOME
		<p>PSO1. Develop a comprehensive understanding of plant classification systems and evolutionary relationships among angiosperms.</p> <p>PSO2. Apply principles of plant nomenclature and taxonomy, and understand modern classification systems such as APG.</p> <p>PSO3. Acquire skills in herbarium techniques and understand the importance of plant documentation and</p>

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		<p>conservation.</p> <p>PSO4. Analyse diagnostic characters and economic importance of major plant families, enabling identification and practical application in botany.</p> <p>CO1. Prepare herbarium specimens using standard techniques and understand methods of preservation and documentation.</p> <p>CO2. Identify and analyse angiospermic plants belonging to specified families using diagnostic morphological characters</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop practical skills in plant collection, preservation and herbarium preparation for scientific study and documentation.</p> <p>PSO2. Apply taxonomic principles to identify plant families based on morphological features and understand their classification.</p>
<p>V SEMESTER BOT302 (Minor) Molecular Biology</p>		<p>CO1. Explain the chemical composition and structure of DNA, including the double helix model, types of DNA, and organization in prokaryotes and eukaryotes such as nucleoid, chromatin and nucleosomes.</p> <p>CO2. Describe the models of DNA replication and explain the mechanism of replication including initiation, elongation and termination, along with the role of enzymes involved.</p>

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		<p>CO3. Explain the types, structure and functions of RNA, including mRNA, tRNA, rRNA and non-coding RNAs, and their role in gene expression and protein synthesis.</p> <p>CO4. Describe the mechanism of transcription in prokaryotes, regulation through operon model, and explain the central dogma and genetic code.</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop a comprehensive understanding of DNA structure and organization in prokaryotic and eukaryotic systems.</p> <p>PSO2. Analyse the processes of DNA replication and the role of enzymes in maintaining genetic continuity.</p> <p>PSO3. Understand the structure and functional significance of different types of RNA in gene expression.</p> <p>PSO4. Evaluate molecular mechanisms of transcription, gene regulation and the flow of genetic information in living systems.</p>
<p>VI SEMESTER BOT360 (Major)</p>	<p>Microbiology & Plant Pathology</p>	<p>CO1. Explain the history and scope of microbiology, classification of bacteria based on morphology and nutrition, structure of bacterial cell, and mechanisms of genetic recombination including transformation, conjugation and transduction.</p> <p>CO2. Describe applications of microbiology including biofertilizers,</p>

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		<p>fermentation, microbial bioremediation and antibiotics, and evaluate the economic importance of bacteria and fungi.</p> <p>CO3. Explain the history and scope of plant pathology, modes of transmission of pathogens, general characteristics and classification of viruses, and describe the structure of bacteriophages along with lysogenic and lytic cycles.</p> <p>CO4. Analyse infection processes, host-pathogen interactions and pathogenesis, and explain plant defense mechanisms along with common plant diseases such as blast of rice and soft rot of ginger.</p> <p style="text-align: center;">PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop understanding of microbial diversity, structure and genetic mechanisms, enabling analysis of microbial functions.</p> <p>PSO2. Evaluate the applications of microorganisms in agriculture, industry and environmental management.</p> <p>PSO3. Understand the nature of plant pathogens, their transmission and life cycles, including viral structure and replication.</p> <p>PSO4. Analyse plant disease development and defense mechanisms, and apply knowledge to plant disease management and crop protection.</p>
<p>Practical – BOT360 (Major)</p>	<p>Microbiology & Plant Pathology</p>	<p>CO1. Perform Gram staining of bacteria and differentiate between Gram-positive and Gram-negative organisms based on staining characteristics.</p>

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		<p>CO2. Prepare common culture media such as PDA and nutrient agar using standard laboratory procedures.</p> <p>CO3. Identify and study plant disease specimens through temporary preparations and permanent slides, and relate them to theoretical knowledge.</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop practical skills in basic microbiological techniques including staining and media preparation.</p> <p>PSO2. Apply laboratory methods for culturing and handling microorganisms in a safe and effective manner.</p> <p>PSO3. Analyse plant disease specimens through observation and relate symptoms to causative agents and pathology.</p>
<p>VI SEMESTER BOT361 (Major)</p>	<p>Plant Biotechnology</p>	<p>CO1. Explain the principles of plant tissue culture including nutrient media, sterilization and totipotency, and describe techniques such as protoplast, meristem and embryo culture, artificial seeds and cryopreservation.</p> <p>CO2. Describe the basics of genetic engineering, including enzymes (restriction enzymes and ligase), cloning vectors, selectable markers, reporter genes and the principle of PCR.</p> <p>CO3. Explain gene transfer methods including Agrobacterium-mediated transformation and direct gene transfer techniques such as electroporation,</p>

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		<p>microinjection and microprojectile bombardment, and discuss biosafety and ethical concerns.</p> <p>CO4. Analyse transgenic plants with examples such as Bt cotton, RoundUp Ready soybean, Flavr Savr tomato and Golden rice, and evaluate the role of plant biotechnology in agriculture.</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop understanding of plant tissue culture techniques and their applications in plant propagation and conservation.</p> <p>PSO2. Analyse tools and techniques of genetic engineering and their role in modifying plant genomes.</p> <p>PSO3. Evaluate different gene transfer methods and understand biosafety and ethical considerations in biotechnology.</p> <p>PSO4. Assess the applications of transgenic plants in agriculture for improved yield, resistance and quality traits.</p>
<p>Practical – BOT361 (Major)</p>		<p>CO1. Demonstrate plant tissue culture techniques and prepare culture media such as MS (1962) and Nitsch (1969) using standard protocols.</p> <p>CO2. Identify and explain genetic engineering techniques using photographs and visual aids.</p>

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		<p>CO3. Describe the principles and steps involved in Southern, Northern and Western blotting techniques.</p> <p>CO4. Analyse the steps involved in the development of transgenic plants such as Bt cotton and Golden rice using photographic representations.</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop practical skills in plant tissue culture and media preparation for laboratory applications.</p> <p>PSO2. Understand and interpret genetic engineering techniques through visual and conceptual learning.</p> <p>PSO3. Analyse molecular techniques such as blotting methods and their applications in biotechnology.</p> <p>PSO4. Evaluate the process of developing transgenic crops and their significance in agricultural biotechnology.</p>
<p>VI SEMESTER BOT362 (Major)</p>	<p>Plant Physiology</p>	<p>CO1. Explain water relations in plants including water potential, absorption, transpiration and stomatal mechanism, and describe mineral nutrition, deficiency symptoms and uptake and translocation of solutes.</p> <p>CO2. Describe the process of photosynthesis including light reactions (photosystems, photolysis and electron transport) and dark reactions (carbon fixation in C3 and C4 pathways).</p>

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		<p>CO3. Explain photorespiration and cellular respiration processes including glycolysis, Krebs cycle, electron transport chain and oxidative phosphorylation.</p> <p>CO4. Analyse the physiological roles of plant hormones such as auxins, gibberellins, cytokinins, abscisic acid and ethylene, along with synthetic growth regulators and stress physiology.</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop understanding of plant water relations, mineral nutrition and transport mechanisms essential for plant growth.</p> <p>PSO2. Analyse photosynthetic processes and pathways, and evaluate their role in plant productivity.</p> <p>PSO3. Understand energy metabolism in plants through respiration and related biochemical pathways.</p> <p>PSO4. Evaluate the role of plant hormones and growth regulators in plant development and stress responses.</p>
<p>Practical – BOT362 (Major)</p>	<p>Plant Physiology</p>	<p>CO1. Determine the osmotic potential of cell sap using the plasmolytic method and interpret the results in relation to water relations in plants.</p> <p>CO2. Estimate the Respiratory Quotient (RQ) using Ganong's respirometer and analyse respiratory substrates.</p> <p>CO3. Extract and separate plant</p>

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		<p>pigments using paper chromatography and identify different pigments based on their movement.</p> <p>CO4. Measure the rate of transpiration in dorsiventral leaves using Garreau's potometer and evaluate factors affecting transpiration.</p> <p>CO5. Estimate chlorophyll content of leaves using spectrophotometric methods and interpret the results in relation to photosynthesis.</p> <p>PROGRAM SPECIFIC OUTCOME</p> <p>PSO1. Develop practical skills in physiological experiments related to water relations, respiration and photosynthesis.</p> <p>PSO2. Apply laboratory techniques to measure and analyse physiological parameters in plants.</p> <p>PSO3. Interpret experimental data and relate physiological processes to plant growth and function.</p> <p>PSO4. Understand the use of scientific instruments and methods in plant physiology studies.</p>
<p>VI SEMESTER BOT363 (Minor)</p>	<p>Bioinformatics & Biostatistics</p>	<p>CO1. Explain the fundamentals of bioinformatics, its branches, and describe biological databases for DNA and proteins along with their classification into primary, secondary and composite databases.</p>

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		<p>CO2. Describe database search tools such as FASTA, BLAST and Clustal W, and explain sequence alignment methods and phylogenetic tree construction using maximum parsimony method.</p> <p>CO3. Explain statistical measures including central tendency (mean, median, mode), dispersion (standard deviation and standard error), and analyse data using ANOVA, correlation and regression.</p> <p>CO4. Describe hypothesis testing including null and alternate hypotheses, Student's t-test and chi-square test, and explain types of data, methods of collection and data presentation techniques.</p>
		PROGRAM SPECIFIC OUTCOME
		<p>PSO1. Develop understanding of bioinformatics tools and biological databases for analysis of molecular data.</p> <p>PSO2. Apply computational tools for sequence alignment and phylogenetic analysis.</p> <p>PSO3. Analyse biological data using statistical methods and interpret results effectively.</p> <p>PSO4. Apply principles of hypothesis testing and data presentation for scientific research and communication.</p>
	PROGRAM OUTCOME	<p>PO1. After completion of the undergraduate degree in Botany, students will understand the basic</p>

		<p>principles and concepts of plant sciences including morphology, anatomy, physiology, genetics and systematics. By studying these core areas, they will gain knowledge of plant structure, function and life processes, and understand how plants grow, reproduce and interact with their environment. This will equip them with fundamental scientific knowledge to analyse biological problems and contribute to plant-based solutions in real-world contexts.</p> <p>PO2. Through the study of plant diversity, taxonomy, ecology and environmental biology, students will be well equipped to understand biodiversity, ecosystem functioning and environmental challenges. They will learn about conservation strategies, sustainable utilization of plant resources and the impact of human activities on the environment. After completing the programme, they will be able to appreciate the importance of biodiversity conservation and take informed steps towards environmental protection and sustainable development.</p> <p>PO3. The programme provides knowledge in applied areas such as microbiology, plant pathology, biotechnology, agriculture and bioinformatics. Students will understand the role of microorganisms, plant diseases, genetic engineering and modern biotechnological tools in agriculture and industry. They will also gain insights into crop improvement, disease management and the use of plant resources in medicine and industry, enabling them to contribute effectively to agricultural and economic development.</p>
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		<p>PO4. Students will acquire the ability to use scientific methods, laboratory techniques and basic statistical tools to analyse biological data and research problems. They will develop skills in observation, experimentation, data collection, organisation, interpretation and presentation. This will enable them to apply scientific and analytical approaches in research, higher studies and professional careers, and make informed and rational decisions in biological and environmental issues.</p>
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DEPARTMENT OF CHEMISTRY

Course Code	Course Name	Outcomes
CHEM100	Organic chemistry-I	<p>CO1: Explain the fundamental principles of organic reaction mechanisms including electronic effects, reactive intermediates, bond cleavage, and reaction pathways such as substitution, addition, elimination, and rearrangement reactions.</p> <p>CO2: Interpret and apply stereochemical principles related to geometrical, optical, and conformational isomerism using standard nomenclature systems and structural representations.</p> <p>CO3: Analyse the mechanisms and stereochemical aspects of nucleophilic substitution and elimination reactions and predict the major products under different reaction conditions.</p> <p>CO4: Describe the concept of aromaticity and explain</p>

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		<p>the mechanism, orientation, and directing effects involved in electrophilic aromatic substitution reactions.</p> <p>PSO1: Apply fundamental concepts of organic chemistry, stereochemistry, and reaction mechanisms to analyse and solve chemical problems in academic and applied contexts.</p> <p>PSO2: Develop analytical and critical thinking skills for predicting reaction behaviour, stereochemical outcomes, and aromatic substitution patterns in organic compounds.</p>
CHEM101	Inorganic chemistry-I	<p>CO1: Explain the fundamental concepts of atomic structure including quantum numbers, atomic orbitals, wave mechanics, electronic configurations, and principles governing electron distribution in atoms.</p> <p>CO2: Analyse periodic properties such as atomic and ionic radii, ionization energy, electron affinity, and electronegativity using effective nuclear charge and shielding concepts.</p> <p>CO3: Describe different types of chemical bonding, hybridization, resonance, dipole moment, and predict molecular geometry using VSEPR theory.</p> <p>CO4: Interpret the principles of nuclear chemistry and radioactivity including radioactive decay, nuclear stability, binding energy, fission, fusion, and nuclear reactor processes.</p> <p>PSO1: Apply the principles of atomic structure, periodicity, chemical bonding, and nuclear chemistry to understand the behaviour and properties of chemical systems.</p> <p>PSO2: Develop analytical and problem-solving skills for interpreting molecular structure, bonding characteristics, periodic trends, and nuclear phenomena in chemical sciences.</p>
CHEM110	Chemistry in Everyday Life	<p>CO1: Explain the classification, properties, applications, biodegradability, and environmental impact of polymers, plastics, and paper materials used in daily life and industries.</p> <p>CO2: Describe the preparation, classification, and applications of natural and synthetic dyes, and understand the composition and toxicological aspects of cosmetic products.</p> <p>CO3: Differentiate between oils and fats, explain their</p>

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		<p>chemical properties, and evaluate factors affecting rancidity along with methods for its prevention and analysis.</p> <p>CO4: Identify the functions, sources, and deficiency diseases of essential vitamins and minerals and relate their importance to human health and nutrition.</p> <p>PSO1: Apply chemical knowledge to understand the composition, properties, applications, and environmental implications of consumer and industrial products such as plastics, dyes, cosmetics, oils, and paper.</p> <p>PSO2: Develop analytical and practical understanding of chemical substances relevant to health, industry, and environmental sustainability through the study of polymers, nutrients, and everyday chemical products.</p>
CHEM160	Inorganic Chemistry-II	<p>CO1: Explain the concepts of coordination chemistry including nomenclature, bonding theories, isomerism, stereochemistry, and factors influencing the stability of coordination compounds.</p> <p>CO2: Describe the properties, trends, and chemical behaviour of s- and p-block elements including hydrides, oxides, oxoacids, interhalogen compounds, and anomalous behaviour of elements.</p> <p>CO3: Apply the principles of oxidation–reduction reactions, electrode potentials, and metallurgical processes for balancing redox reactions and understanding extraction and purification of metals.</p> <p>CO4: Perform and interpret volumetric and gravimetric analytical methods for estimation and separation of ions using appropriate chemical principles and indicators.</p> <p>PSO1: Apply theoretical and practical knowledge of inorganic chemistry, coordination compounds, metallurgy, and analytical techniques to solve chemical problems and laboratory-based applications.</p> <p>PSO2: Develop analytical, quantitative, and experimental skills for chemical estimation, separation of ions, and interpretation of redox and coordination chemistry processes.</p>
CHEM161	Physical Chemistry-I	<p>CO1: Explain the kinetic theory of gases, deviations from ideal gas behaviour, van der Waals equation, and the concept of critical constants and</p>

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		<p>corresponding states.</p> <p>CO2: Describe the physical properties of liquids including viscosity, surface tension, refractive index, and the structure and types of liquid crystals.</p> <p>CO3: Interpret the principles of colloidal systems and surface chemistry including preparation, properties, adsorption phenomena, and adsorption isotherms.</p> <p>CO4: Apply the concepts of chemical kinetics and catalysis to determine reaction order, rate laws, activation energy, and mechanisms of catalytic and enzyme-catalysed reactions.</p> <p>PSO1: Apply the principles of physical chemistry to analyse the behaviour of gases, liquids, colloids, surfaces, and chemical reaction systems.</p> <p>PSO2: Develop quantitative and analytical skills for interpreting kinetic data, adsorption behaviour, and catalytic processes relevant to chemical and industrial applications.</p>
CHEM200	Physical Chemistry-II	<p>CO1: Explain the kinetic molecular theory of gases, Maxwell's distribution of molecular velocities, and the relationship between kinetic energy, temperature, and degrees of freedom.</p> <p>CO2: Describe crystal structures, symmetry elements, Bravais lattices, and apply X-ray diffraction principles including Bragg's equation for crystal analysis.</p> <p>CO3: Apply the laws of thermodynamics to analyse heat, work, entropy changes, and the efficiency of thermodynamic systems and processes.</p> <p>CO4: Interpret advanced thermodynamic concepts such as free energy, chemical potential, partial molar properties, and thermodynamic behaviour of open systems.</p> <p>PSO1: Apply the principles of physical chemistry to understand the behaviour of gases, solids, and thermodynamic systems in scientific and industrial contexts.</p> <p>PSO2: Develop analytical and quantitative problem-solving skills in crystallography, thermodynamics, and molecular energy distribution for advanced chemical studies.</p>
CHEM200P	Lab work (Physical	<p>CO1: Perform experiments related to surface tension, viscosity, calorimetry, and heat changes using</p>

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	chemistry-IP)	<p>standard physical chemistry laboratory techniques.</p> <p>CO2: Apply colorimetric methods and Beer's law to determine indicator constants and concentrations of unknown solutions.</p> <p>CO3: Measure and interpret pH, dissociation constants, and buffer properties using glass electrode and potentiometric techniques.</p> <p>CO4: Analyse acid–base and redox titration data to determine concentration, thermodynamic parameters, and formal redox potentials accurately.</p> <p>PSO1: Develop practical laboratory skills in physical chemistry through the use of analytical instruments, titration methods, and electrochemical techniques.</p> <p>PSO2: Acquire competence in experimental data analysis, interpretation, and quantitative problem-solving relevant to chemical measurements and laboratory investigations.</p>
CHEM201	Organic Chemistry-II	<p>CO1: Explain the nomenclature, classification, preparation methods, physical properties, and chemical reactions of alkanes and alcohols.</p> <p>CO2: Describe the synthesis, properties, and reactions of monohydric, dihydric, and trihydric alcohols, including their acidic nature and industrial significance.</p> <p>CO3: Interpret the nomenclature, preparation, and chemical behaviour of ethers and epoxides, including ring-opening reactions and reactions with organometallic reagents.</p> <p>CO4: Analyse the structure, reactivity, synthesis, and characteristic reactions of aldehydes and ketones, including qualitative tests for their identification.</p> <p>PSO1: Apply fundamental concepts of organic chemistry to understand the preparation, properties, and reaction mechanisms of important classes of organic compounds.</p> <p>PSO2: Develop analytical and laboratory skills for identification, synthesis, and interpretation of reactions involving hydrocarbons, alcohols, ethers, epoxides, aldehydes, and ketones.</p>
CHEM260	Organic Chemistry-III	<p>CO1: Explain important organic name reactions and molecular rearrangements involved in carbon–carbon bond formation and mechanistic transformations in</p>

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		<p>organic synthesis.</p> <p>CO2: Apply the synthetic utility of important organic reagents in oxidation, reduction, condensation, and functional group transformation reactions.</p> <p>CO3: Describe the structure, synthesis, properties, and reaction mechanisms of important heterocyclic compounds including pyrrole, furan, thiophene, pyridine, indole, quinoline, and isoquinoline.</p> <p>CO4: Interpret the principles and applications of green chemistry, including environmentally benign synthetic methods, microwave-assisted reactions, sonication techniques, and biocatalytic processes.</p> <p>PSO1: Apply advanced knowledge of organic synthesis, heterocyclic chemistry, and reaction mechanisms for designing efficient and sustainable chemical transformations.</p> <p>PSO2: Develop analytical, synthetic, and environmentally responsible problem-solving skills through the study of modern organic reagents, green chemistry principles, and catalytic processes.</p>
CHEM260P	Lab work (Organic Chemistry-IP)	<p>CO1: Perform systematic qualitative analysis for the detection of elements such as nitrogen, sulphur, and halogens in organic compounds.</p> <p>CO2: Identify and characterize important organic functional groups through standard laboratory tests and systematic reporting methods.</p> <p>CO3: Prepare suitable derivatives of organic compounds for confirmation and characterization of functional groups.</p> <p>CO4: Apply acid–base separation techniques for binary organic mixtures and determine melting points for purity and identification of compounds.</p> <p>PSO1: Develop practical laboratory skills in organic qualitative analysis, compound separation, and characterization using standard chemical techniques.</p> <p>PSO2: Acquire analytical and problem-solving abilities for identification and purification of organic compounds through systematic experimental methods.</p>
CHEM261	Analytical Chemistry	<p>CO1: Demonstrate safe laboratory practices including proper handling, storage, and disposal of chemicals, use of personal protective equipment, and first aid</p>

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		<p>procedures in chemistry laboratories.</p> <p>CO2: Apply principles of qualitative analysis, solubility product, common ion effect, and classical separation techniques for identification and purification of chemical substances.</p> <p>CO3: Explain the principles, techniques, and applications of electroanalytical methods and chromatographic techniques such as paper, thin layer, and column chromatography.</p> <p>CO4: Analyse and interpret experimental data using statistical tools, error analysis, significant figures, accuracy, precision, confidence limits, and tests of significance.</p> <p>PSO1: Develop practical and analytical skills in chemical analysis, separation techniques, electroanalytical methods, and chromatographic procedures relevant to laboratory and industrial applications.</p> <p>PSO2: Acquire competence in scientific data analysis, error minimization, and interpretation of experimental results using appropriate statistical and analytical methods.</p>
CHEM300	Inorganic Chemistry-III	<p>CO1: Explain advanced concepts of chemical bonding including crystal field theory, molecular orbital theory, ligand field effects, and bonding in coordination compounds.</p> <p>CO2: Describe the electronic configuration, magnetic behaviour, oxidation states, and chemical properties of transition elements, lanthanides, and actinides.</p> <p>CO3: Interpret the structure, bonding, preparation, and applications of organometallic compounds and metal carbonyls using bonding theories and spectroscopic concepts.</p> <p>CO4: Analyse the structure and properties of ionic solids, lattice energy, crystal defects, semiconductors, and factors influencing the stability and solubility of ionic compounds.</p> <p>PSO1: Apply advanced inorganic chemistry concepts related to coordination compounds, transition elements, organometallic chemistry, and solid-state chemistry in theoretical and practical contexts.</p> <p>PSO2: Develop analytical and problem-solving skills for interpreting bonding, electronic structure,</p>

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		magnetic properties, and crystal behaviour of inorganic compounds and materials.
CHEM300P	Lab work (Inorganic Chemistry-IP)	<p>CO1: Perform oxidation–reduction titrations accurately for the quantitative estimation of iron, oxalic acid, and related mixtures using standard oxidizing agents.</p> <p>CO2: Apply internal and external indicator methods in redox titrations involving potassium dichromate and interpret the analytical results obtained.</p> <p>CO3: Carry out argentometric titrations for the estimation of chloride ions using Mohr’s and Volhard’s methods.</p> <p>CO4: Analyse iodometric and iodimetric titration data for the estimation of iodine, copper(II), potassium dichromate, and available chlorine in bleaching powder.</p> <p>PSO1: Develop practical analytical skills in volumetric analysis through redox, argentometric, iodometric, and iodimetric titration techniques.</p> <p>PSO2: Acquire competence in quantitative chemical analysis, accurate measurement, and interpretation of experimental data relevant to laboratory and industrial applications.</p>
CHEM301	Physical Chemistry-III	<p>CO1: Explain the fundamental principles of quantum chemistry including black body radiation, photoelectric effect, quantum mechanics, and Schrödinger wave equations for simple systems.</p> <p>CO2: Describe molecular symmetry, symmetry operations, point groups, and applications of group theory in chemistry and crystallography.</p> <p>CO3: Interpret the electric and magnetic properties of molecules using concepts such as polarizability, dipole moment, magnetic susceptibility, diamagnetism, and paramagnetism.</p> <p>CO4: Analyse molecular spectra using rotational, vibrational, and Raman spectroscopy to determine molecular structure, bond parameters, and energy transitions.</p> <p>PSO1: Apply advanced concepts of quantum chemistry, molecular symmetry, spectroscopy, and molecular properties for understanding atomic and molecular behaviour.</p>

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		<p>PSO2: Develop analytical and quantitative problem-solving skills for interpreting spectroscopic data, molecular structures, and physicochemical properties in chemical sciences.</p>
CHEM301P	Lab work (Physical Chemistry-IIIP)	<p>CO1: Perform experiments related to solubility, heat of solution, partition coefficient, and reaction kinetics using standard physical chemistry laboratory techniques.</p> <p>CO2: Apply potentiometric and conductometric methods for acid–base, redox, and precipitation titrations to determine concentrations and strengths of solutions.</p> <p>CO3: Verify physicochemical laws and principles such as Beer–Lambert’s law and Freundlich adsorption isotherm through experimental analysis.</p> <p>CO4: Prepare and characterize colloidal sols and interpret the behaviour of colloidal systems and adsorption phenomena.</p> <p>PSO1: Develop practical and analytical skills in physical chemistry through the use of instrumental techniques such as potentiometry, conductometry, colorimetry, and spectrometry.</p> <p>PSO2: Acquire competence in experimental data analysis, quantitative measurements, and interpretation of physicochemical properties relevant to laboratory and industrial applications.</p>
CHEM302	Environmental Chemistry	<p>CO1: Explain the concepts and scope of environmental chemistry, atmospheric composition, and the chemical processes responsible for air pollution, global warming, ozone depletion, acid rain, and photochemical smog.</p> <p>CO2: Describe the causes and effects of soil and water pollution, and evaluate water quality parameters such as dissolved oxygen, BOD, COD, eutrophication, and hardness of water.</p> <p>CO3: Interpret the principles and methods of solid waste management, wastewater treatment, recycling, composting, incineration, and water reuse technologies.</p> <p>CO4: Analyse the sources, measurement, hazards, and toxicological effects of environmental pollutants including heavy metals, toxic gases, cyanides, and pesticides on human health and ecosystems.</p>

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		<p>PSO1: Apply the principles of environmental chemistry to identify, analyse, and manage environmental pollution and waste treatment processes.</p> <p>PSO2: Develop awareness and problem-solving skills related to environmental protection, sustainable resource management, and the impact of toxic chemicals on health and ecosystems.</p>
CHEM360	Inorganic Chemistry-IV	<p>CO1: Explain various acid–base theories, HSAB principle, and the properties and reactions of non-aqueous solvents such as liquid ammonia and sulphur dioxide.</p> <p>CO2: Describe the chemistry of noble gases and inorganic polymers, including their preparation, structure, bonding, properties, and applications.</p> <p>CO3: Interpret the principles of magnetochemistry and molecular symmetry, and analyse the magnetic behaviour and symmetry properties of inorganic compounds.</p> <p>CO4: Explain metallic bonding, weak intermolecular forces, hydrogen bonding, and the biological role and toxicological effects of metal ions in living systems.</p> <p>PSO1: Apply advanced inorganic chemistry concepts related to acid–base behaviour, coordination, magnetochemistry, molecular symmetry, and bioinorganic systems in scientific and practical contexts.</p> <p>PSO2: Develop analytical and problem-solving skills for understanding the structure, bonding, magnetic properties, biological functions, and reactivity of inorganic compounds and metal ions.</p>
CHEM360P	Lab work (Inorganic Chemistry-IIP)	<p>CO1: Prepare and characterize important inorganic compounds and coordination complexes using standard laboratory techniques and understand their synthesis principles.</p> <p>CO2: Perform quantitative gravimetric analysis for the estimation of metal ions and anions such as nickel, sulphate, and iron using appropriate precipitation methods.</p> <p>CO3: Apply complexometric titration techniques using EDTA for the estimation of hardness of water and metal ions like calcium and magnesium.</p> <p>CO4: Carry out systematic qualitative semi-micro</p>

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		<p>analysis of mixtures containing anions and cations, and interpret the underlying chemical reactions involved.</p> <p>PSO1: Develop practical laboratory skills in inorganic synthesis, gravimetric analysis, complexometric titration, and qualitative inorganic analysis.</p> <p>PSO2: Acquire analytical and interpretative skills for identification, separation, and quantitative estimation of inorganic ions in complex mixtures.</p>
CHEM361	Organic Chemistry-IV	<p>CO1: Explain the principles of organic photochemistry including molecular excitation, energy transfer processes, photophysical phenomena, and photochemical reactions of carbonyl compounds.</p> <p>CO2: Describe pericyclic reactions, including electrocyclic and cycloaddition reactions, and apply Woodward–Hoffmann rules and frontier molecular orbital theory to predict reaction outcomes.</p> <p>CO3: Interpret the principles and applications of UV and IR spectroscopy for structural elucidation, including electronic transitions, vibrational frequencies, and functional group identification.</p> <p>CO4: Analyse molecular structure using NMR and mass spectrometry, including chemical shifts, coupling patterns, fragmentation, and molecular weight determination of organic compounds.</p> <p>PSO1: Apply advanced concepts of photochemistry, pericyclic reactions, and spectroscopic techniques for understanding organic reaction mechanisms and structural analysis.</p> <p>PSO2: Develop analytical and interpretative skills in spectroscopic methods (UV, IR, NMR, and mass spectrometry) for identification and characterization of organic molecules.</p>
CHEM361P	Lab work (Organic Chemistry-IIP)	<p>CO1: Perform organic synthesis of important compounds and heterocycles using standard laboratory methods and named reactions such as Skraup and Fischer indole synthesis.</p> <p>CO2: Apply UV–Visible spectroscopy for the analysis of organic and inorganic compounds, including determination of λ_{\max}, energy transitions, and concentration estimation.</p> <p>CO3: Carry out synthesis of heterocyclic compounds and monitor reaction progress using Thin Layer</p>

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		<p>Chromatography (TLC) techniques.</p> <p>CO4: Execute extraction and isolation of natural and organic products from plant and biological sources using appropriate laboratory methods and apparatus.</p> <p>PSO1: Develop practical skills in organic synthesis, spectroscopic analysis, and chromatographic techniques for identification and characterization of chemical compounds.</p> <p>PSO2: Acquire experimental and analytical competence in extraction, purification, and quantitative analysis of organic compounds from natural and synthetic sources.</p>
CHEM362	Physical Chemistry-IV	<p>CO1: Explain the fundamental principles of photochemistry including laws of photochemical reactions, quantum yield, photosensitized processes, quenching, and chemiluminescence.</p> <p>CO2: Describe the concepts of electrolytic conductance, ionic mobility, transport numbers, and theories of electrolytic dissociation for strong and weak electrolytes.</p> <p>CO3: Apply electrochemical principles such as EMF, Nernst equation, electrode potentials, and cell reactions to calculate thermodynamic and equilibrium parameters.</p> <p>CO4: Analyse dissociation equilibria of weak electrolytes, buffer systems, hydrolysis of salts, and pH-related calculations using appropriate theoretical models.</p> <p>PSO1: Apply physical chemistry concepts in photochemistry, electrochemistry, and solution chemistry for understanding reaction mechanisms and ionic behaviour in systems.</p> <p>PSO2: Develop analytical and computational skills for interpreting experimental data related to conductivity, electrochemical cells, pH systems, and equilibrium processes.</p>
CHEM363	Industrial Chemistry	<p>CO1: Explain the principles and applications of fermentation technology and food chemistry, including microbial processes, food composition, processing, and preservation techniques.</p> <p>CO2: Describe industrial processes involved in leather manufacturing and chemical explosives, including raw material treatment, synthesis, and</p>

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		<p>environmental safety aspects.</p> <p>CO3: Interpret the origin, composition, processing, and industrial utilization of coal, petroleum, and fuel gases, including refining and energy-related applications.</p> <p>CO4: Analyse the synthesis, properties, and applications of important industrial polymers including thermoplastics, thermosetting plastics, elastomers, and fibres.</p> <p>PSO1: Apply chemical and industrial knowledge to understand processes in food technology, fermentation, fuel industries, explosives, and polymer manufacturing.</p> <p>PSO2: Develop analytical and problem-solving skills related to industrial chemistry processes, material production, environmental considerations, and polymer applications.</p>
<p>Programme Outcomes (POs) – B.Sc. Chemistry</p>	<ol style="list-style-type: none"> 1. Develop a strong foundation in the fundamental principles of Organic, Inorganic, Physical, and Analytical Chemistry. 2. Apply theoretical knowledge of chemistry to solve scientific and real-life problems effectively. 3. Acquire practical laboratory skills for handling chemicals, instruments, and analytical techniques safely and accurately. 4. Understand the structure, properties, reactions, and applications of chemical substances and materials. 5. Develop critical thinking, scientific reasoning, and problem-solving abilities through experiments and research activities. 6. Gain knowledge of environmental chemistry and sustainable practices for pollution control and waste management. 7. Apply modern analytical and instrumental techniques in qualitative and quantitative chemical analysis. 8. Enhance communication skills, teamwork, and ethical responsibility in scientific and professional environments. 9. Prepare for higher studies, research, 	

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	<p>entrepreneurship, and employment opportunities in chemical and allied industries.</p> <p>10. Develop lifelong learning abilities and adaptability to advancements in chemistry and interdisciplinary sciences.</p>
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DEPARTMENT OF ECONOMICS		
Course Code	Course Name	Course Outcome
Eco/100	Rural Development	<p>The course will enable students to</p> <p>CO1. Explain the concepts, importance and structure of rural development and the rural economy</p> <p>CO2. Describe the determinants of rural development and the role of infrastructure and institutions</p> <p>CO3. Identify different sources of rural credit and explain their functions and issues</p> <p>CO4. Discuss major rural development models and evaluate key government policies and programmes</p> <hr/> <p>PSO1. Understand the concepts, structure and key issues of the rural economy in India</p> <p>PSO2. Analyse determinants of rural development and evaluate the role of infrastructure and institutions like SHGs and cooperatives</p> <p>PSO3. Assess various sources of rural credit and understand the role of financial institutions schemes like KCC</p> <p>PSO4. Apply rural development models and critically evaluate major government policies such as MGNREGA, PMAY and NRLM</p>

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ECO/101	Microeconomics-I	<p>CO1. Explain the basic concepts, scope and methodology of economics and the price mechanism</p> <p>CO2. Analyse demand and supply functions, their determinants and elasticity concepts</p> <p>CO3. Interpret consumer equilibrium using utility and indifference curve approaches</p> <p>CO4. Explain production functions, cost concepts and producer equilibrium</p> <hr/> <p>PSO1. Develop a foundational understanding of economic principles and problem-solving in resource allocation</p> <p>PSO2. Apply demand and supply analysis to real market situation and price determination</p> <p>PSO3. Evaluate consumer decision-making using utility analysis and modern approaches</p> <p>PSO4. Analyse production and cost behaviour to understand firm decision-making and efficiency</p>
ECO/102	Fundamentals of Economics-I	<p>CO1. Explain basic problems, concepts of economics and the laws of demand and supply</p> <p>CO2. Describe national income measurement, government budget and the role of public revenue and expenditure in the economy</p> <p>CO3. Discuss key features of the Indian economy including population trends, economic growth, development and reforms</p> <p>PSO1. Apply basic economic principles to analyse everyday economic problems</p>

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		<p>PSO2. Evaluate macroeconomic indicators and understand government budgeting and fiscal policy</p> <p>PSO3. Analyse economic growth, development and reforms in the Indian context</p>
ECO/103	Financial Institutions & Markets	<p>CO1. Explain the structure, functions and regulatory role of the banking system in India including monetary policy and credit control</p> <p>CO2. Explain the functions of money, working of commercial banks and modern banking services including digital banking</p> <p>CO3. Explain the role, structure and significance of co-operative and development banks in promoting economic development</p> <p>CO4. Describe the structure and functioning of financial markets, including money and capital markets and their functions.</p> <p>PSO1. Analyse the role of central banking and monetary policy in economic development</p> <p>PSO2. Apply knowledge of banking functions and financial instruments in real-life context</p> <p>PSO3. Evaluate the contribution of institutional finance in promoting economic growth</p> <p>PSO4. Analyse financial markets and their role in resource mobilization and investment</p>

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ECO/104	Microeconomics-II	<p>CO1. Explain different market structures and price-output determination</p> <p>CO2. Analyse Imperfectly Competitive markets such as monopolistic competition and oligopoly and bilateral monopoly dynamics</p> <p>CO3. Explain theories of factor pricing including wages, rent, interest and profit</p> <p>CO4. Describe welfare concepts such as Pareto efficiency and compensation principle</p> <hr/> <p>PSO1. Evaluate firm behaviour and equilibrium under different market structures</p> <p>PSO2. Analyse strategic behaviour of firms under imperfect competition</p> <p>PSO3. Apply distribution theories to understand income determination</p> <p>PSO4. Assess economic policies using welfare criteria and social welfare concepts</p>
ECO/105/MD	Fundamentals of Economics-II	<p>CO1. Explain basic problems, concepts of economics and the laws of demand and supply</p> <p>CO2. Describe national income measurement, government budget and the role of public revenue and expenditure in the economy</p> <p>CO3. Discuss key features of the Indian economy including population trends, economic growth, development and reforms</p> <hr/> <p>PSO1. Apply basic economic principles to analyse everyday economic problems</p> <p>PSO2. Evaluate macroeconomic indicators and understand government</p>

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		<p>budgeting and fiscal policy</p> <p>PSO3. Analyse economic growth, development and reforms in the Indian context</p>
ECO/200	Environmental Economics	<p>CO1. Explain the relationship between economy and environment including market failures and externalities</p> <p>CO2. Describe the link between development and environmental issues such as degradation and sustainability</p> <p>CO3. Explain types, causes and control measures of pollution along with environmental laws</p> <p>CO4. Discuss global environmental problems and international efforts for environmental protection</p> <p>PSO1. Analyse the fundamental relationships between the economy and the environment, the environmental issues in relation to the theory of externalities and public goods, identify key reasons why markets sometimes fail to achieve socially optimal outcomes</p> <p>PSO2. Identify the relation between developmental quality with the help of Environmental Kuznets curve and the role of sustainable development goals in mitigating degradation</p> <p>PSO3. Describe the causes, effects and measures to control pollution in order to achieve optimal level of pollution in India</p> <p>PSO4. Assess global environmental challenges such as Greenhouse effect and ozone depletion while critiquing international agreements like the Kyoto Protocol and the application of the Polluter Pays Principle</p>
ECO/201	Macroeconomics-I	CO1. Explain concepts and

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		<p>measurement of national income and circular flow of income</p> <p>CO2. Describe theories of output, employment and income determination</p> <p>CO3. Explain consumption theories and factors influencing consumer behaviour</p> <p>CO4. Describe investment theories, saving behaviour and equilibrium concepts</p> <hr/> <p>PSO1. Evaluate national income using various methods and understand the circular flow of income in both closed and open economy including the emergence of Green Accounting</p> <p>PSO2. Analyse the classical theory of employment with the Keynesian principle of effective demand and explaining how aggregate demand and supply determine a nation's total income and output</p> <p>PSO3. Analyse the relationship between income and spending by applying various hypotheses such as Keynes's absolute income, Duesenberry's relative income and the Life Cycle Hypothesis to predict consumer behaviour.</p> <p>PSO4. Evaluate the determinants of investment multiplier while distinguishing between ex-ante and ex-post equilibrium in savings and investment</p>
ECO/202/MD	Fundamentals of Economics-III	<p>CO1. Explain basic problems, concepts of economics and the laws of demand and supply</p> <p>CO2. Describe national income measurement, government budget and the role of public revenue and expenditure in the economy</p>

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		<p>CO3. Discuss key features of the Indian economy including population trends, economic growth, development and reforms</p>
		<p>PSO1. Apply basic economic principles to analyse everyday economic problems</p> <p>PSO2. Evaluate macroeconomic indicators and understand government budgeting and fiscal policy</p> <p>PSO3. Analyse economic growth, development and reforms in the Indian context</p>
ECO/203	Public Finance	<p>CO1. Explain the concept, scope and significance of public finance including public vs private goods, market failure and the role of government</p> <p>CO2. Describe sources of public revenue, principles of taxation, tax burden and the economic effects of taxation</p> <p>CO3. Explain the principles, classification and effects of public expenditure and understand the causes, sources and management of public debt</p> <p>CO4. Discuss fiscal policy, types of budget and the structure of financial administration including the role of Finance Commission in India</p> <p>PSO1. Analyse the role of government in resources allocation and welfare maximization</p> <p>PSO2. Evaluate taxation systems and their impact on income distribution and efficiency</p> <p>PSO3. Assess public spending and</p>

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		<p>debt management in economic development</p> <p>PSO4. Analyse fiscal policy tools and budgetary processes for economic stability</p>
ECO/204	Macroeconomics-II	<p>CO1. Explain the functions and theories of money including the Quantity Theory of Money and the IS-LM model along with their assumptions and limitations</p> <p>CO2. Describe the structure and functions of central and commercial banks including credit creation and instruments of monetary policy</p> <p>CO3. Explain the causes and phases of trade cycles and evaluate different theories explaining economic fluctuations</p> <p>CO4. Describes types, causes and effects of inflation and assess measures to control inflation including the concept of the Phillips curve.</p> <p>PSO1. Analyse monetary theories and their relevance in modern economics</p> <p>PSO2. Evaluate banking functions and monetary policy in economic regulation</p> <p>PSO3. Analyse fluctuations in economic activity using trade cycle theories</p> <p>PSO4. Assess inflationary trends and policy measures for price stability</p>

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ECO/300	Quantitative Technique-I	<p>CO1. Understand basic mathematical concepts and apply linear programming techniques to solve optimization problems graphically</p> <p>CO2. Apply differentiation techniques to solve economic problems such as profit maximization, cost minimization and analyse cost-revenue relationships</p> <p>CO3. Use integration methods to measure economic variables like consumer surplus, producer surplus, total revenue and total cost</p> <p>CO4. Solve systems of linear equations using methods like Cramer's rule and matrix inversion</p> <hr/> <p>PSO1. Develop logical thinking and problem-solving skills in economic analysis</p> <p>PSO2. Improve ability to make economic and business decision using mathematical methods</p> <p>PSO3. Strengthen skills in economics calculations and financial analysis</p> <p>PSO4. Build analytical and quantitative skills useful for economic and statistics</p>
ECO/301	Agriculture Economics	<p>CO1. Explain the role of agriculture in economic development and analyse the structure and challenges of the rural economy in India</p> <p>CO2. Describe agrarian relations, evaluate land reforms and analyse patterns of land use and agricultural productivity</p> <p>CO3. Identify the impact of technological advancements such as Green Revolution, mechanization and sustainable practices on agricultural development</p>

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		<p>CO4. Explain the effects of globalization on Indian agriculture and suggest measures to address issues like low productivity and agricultural marketing challenges.</p>
		<p>PSO1. Analyse the structure and functioning of the rural and agricultural economy</p> <p>PSO2. Assess how agrarian relations and land utilization pattern drive regional economic development</p> <p>PSO3. Assess technological shifts from traditional to mechanized farming and their ecological implications</p> <p>PSO4. Formulate remedial measures for agricultural marketing and trade within a globalized framework];</p>
ECO/303	Indian Economy	<p>CO1. Understand the basic features of the Indian economy and population problems</p> <p>CO2. Explain economic planning, reforms and the impact of liberalization, privatization and globalization</p> <p>CO3. Understand agricultural development, land reforms and sources of agricultural finance</p> <p>CO4. Explain the basic features of the regional economy</p>

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		<p>PSO1. Identify the foundational features of the Indian economy and evaluate the demographic challenges of over-population, poverty and income inequality</p> <p>PSO2. Assess the transition from five-Year plan to NITI Aayog and analyse the impact of 1991 LPG reforms on India's industrial and small-business sectors</p> <p>PSO3. Describe the factors affecting agricultural productivity in India including the successes of the Green Revolution, the role of land reforms and effectiveness of the PDS and MPS in ensuring food security</p> <p>PSO4. Analyse the specific economic structure of Mizoram, its sectoral growth and state's fiscal health regarding revenue sources and public debt.</p>
ECO/304	Quantitative Techniques-II	<p>CO1. Analyse different data collection methods and application of averages and measures of data spread to describe datasets effectively</p> <p>CO2. Understand the theoretical foundations of probability (Classical, empirical and Modern)</p> <p>CO3. Analyse relationships between variables using correlation and regression</p> <p>CO4. Understand time series analysis and calculation of index numbers</p> <p>PSO1. Develop ability to collect, organize and interpret statistical data</p> <p>PSO2. Apply probability concepts to solve economic and business problems</p> <p>PSO3. Use statistical methods to predict and analyse economic trends</p>

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		<p>PSO4. Measures and evaluate economic changes over time using statistical tools.</p>
ECO/305	International Trade	<p>CO1. Understand the importance of international trade and classical trade theories</p> <p>CO2. Explain modern trade theories and gains from international trade</p> <p>CO3. Understand balance of payments and trade control measures like tariffs and quotas</p> <p>CO4. Explain India's foreign trade policy and the role of international financial institutions</p> <p>PSO1. Evaluate the foundational classical theories of trade to understand why nations trade and how terms of trade are determined</p> <p>PSO2. Analyse the modern Hecksher-Ohlin approach and the Leontief Paradox to distinguish between potential gains and actual realised gains from international trade</p> <p>PSO3. Examine the components of the Balance of Payments and the impact of trade barriers like tariffs and quotas</p> <p>PSO4. Assess the direction of India's foreign trade policy and the regulatory roles played by global institutions like the WTO, IMF and World Bank</p>
Eco/306	Demography	<p>CO1. Understand the basic concepts of population study and important theories of population such as Malthusian theory and demographic transitions</p> <p>CO2. Identify different sources of</p>

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		<p>demographic data in India specifically the census, civil registration system and the methodology behind the National Family Health Survey 5.</p> <p>CO3. Evaluate vital statistics such as crude and standardised birth and death rates and measuring fertility through indicators like the Total Fertility Rate and Net Reproduction Rate</p> <p>CO4. Understand the concepts of stable and aging populations and assess the impact of Indian population policies and women's empowerment and its relation to population control.</p> <p>PSO1. Develop understanding of population theories and their importance in social and economic planning</p> <p>PSO2. Build skills to collect and use demographic data for population studies and research</p> <p>PSO3. Develop ability to analyse population trends using statistical measures like birth and death rates</p> <p>PSO4. Gain knowledge to understand population growth patterns and evaluate population policies for national development</p>
ECO/308	Economic of Growth and Development	<p>CO1. Understand between economic growth and development while identifying the factors like capital, labour and development ethics that contribute to global and regional development gaps</p> <p>CO2. Evaluate different measures of human well-being such as Human Development Index and SDGs to understand multi-dimensional nature of poverty and inequality</p>

		<p>CO3. Analyse major theoretical frameworks of development including Rostow's Stages of Growth, Lewi's Dual Sector model and the Kuznets Inverted U Hypothesis to explain how economies transition over time</p> <p>CO4. Compared advanced growth models such as Harrod-Domar and Solow alongside theories of modernization and dependency to assess the impact of endogenous and exogenous factors on long-term prosperity</p> <p>PSO1. Distinguish between economic growth and economic development, measure economic development gaps and analyse key determinants such as capital, labour and technology along with regional and global disparities</p> <p>PSO2. Critically examine poverty and inequality, understand different development indicators and evaluate sustainable development goal and their relevance</p> <p>PSO3. Compare major development theories and assess their applicability to developing economies</p> <p>PSO4. Analyse and interpret various economic growth models</p>
<p>Programme Outcome</p>		<p>PO1. After completion of undergraduate degree course, students will understand the basic principle and concept of micro-economics and macro-economics. By studying micro-economics, they will understand various economics principles and structures which governed individual economic activities in the real world. Macro-economics will also give the knowledge of overall dimension of economic live like distribution of national income, consumption</p>

	<p>behaviour, price level and price policy of the government, employment problems and level etc. in short, they are equipped with the relevant knowledge of economic principle in order to solve the economic problems, planning and investment</p> <p>PO2. By studying Indian Economics, our students are well equipped to deal with various economic problems like its nature, natural resources, unemployment problems, national income, financial institutions and source of finance for different sectors of economy, industrial development, population, trade and balance of payments etc. so that, after completing the programme, they understand what step should be taken to develop our economy and what should be given more importance in our planning</p> <p>PO3. Under this course, the study of public finance gives the knowledge of financial management of government. Sources of revenue and expenditure and their classifications. In our institutions we offer Agriculture Economics. Agriculture occupies an important place in our economy since almost 75% of our population are engaged in agriculture and its allied activities. Environmental economics gives the importance of sustainable economic development and various measures which should be taken for the future. International trade helps the students to understand the nature, importance and problems of international trade. It informs how the trading countries would gain through international trade. After having a good knowledge on such papers and topics they will become more efficient and good contributor for economic</p>
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	<p>development.</p> <p>PO4. Students will acquire the ability to use mathematical and statistical tools to analyse economics and business problems and develop skills to collect, organise, interpret and present data effectively and able to apply quantitative techniques in making informed and rational decisions</p>
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GSC COURSE OUTCOME

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Course Code	Course Name	Course Outcome
EDU 100	Psychological Foundations of Education	<p>CO1: Students will be able to understand the structure and functions of higher mental processes</p> <p>CO2: Students will understand the meaning and scope of educational psychology</p> <p>CO3: Students will have the knowledge of the dimensions of growth and development</p> <p>CO4: Students will understand personality and its approaches</p> <p>CO5: Students will develop the knowledge of intelligence with its theories and creativity, the difference between intelligence and creativity</p>
EDU 101	Sociological Foundations of Education	<p>CO1: Students understand the nature and scope of sociology of education</p> <p>CO2: Students understand the meaning and process of socialization</p> <p>CO3: Students understand the relationship between culture, society and education</p> <p>CO4: Students understand the concept, nature and agencies of socialization</p> <p>CO5: Students understand the relationship between education, social mobility and social stratification</p>
EDU 110	Human Rights and Peace Education	<p>CO1: Students understand the concepts of human rights education</p> <p>CO2: Students are able to understand their own rights as human beings</p> <p>CO3: Students will be able to describe peace education, its needs in human life</p> <p>CO4: Students will be able to discuss the different types of peace education.</p>
EDU 160	Philosophical Foundations of Education	<p>CO1: Students will understand the role of philosophy in education.</p> <p>CO2: Students will understand some major schools of philosophy and their contributions to educational theory and practice.</p> <p>CO3: Students will understand the interdependence of philosophy and education and the development of humanity.</p>
EDU	Issues and Trends in	CO1: Students will be able to describe the roles and functions of various organizations, regulating bodies etc. concerning

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161	Contemporary Indian Education	<p>elementary, secondary education.</p> <p>CO2: Students will be able to explain the basic issues relating to elementary and secondary education.</p> <p>CO3: Students will be able to elucidate the problems of secondary schools and their solutions.</p> <p>CO4: Students will be able to clarify the various modern trends in education.</p>
EDU 200	Curriculum Development	<p>CO1: Students understand the meaning, concept and scope of curriculum.</p> <p>CO2: Students understand the bases of curriculum construction, transaction, evaluation and innovation.</p>
EDU 201	Guidance and Counselling	<p>CO1: Students will understand the meaning of guidance and counselling.</p> <p>CO2: Students will be able to know how to identify gifted children who need enrichment and how to channelize their unique potentialities in a positive way.</p> <p>CO3: Students will know how to identify exceptional children how to make provisions for them.</p> <p>CO4: Students will learn the qualities of a counsellor and his/her role in helping and guiding adolescents through proper counselling.</p>
EDU 400	Research Methodology in Education	<p>CO1: Students understand the fundamentals of educational research.</p> <p>CO2: Students understand the basics of conducting research.</p>
EDU 261	Early Childhood Care and Education	<p>CO1: Students will be able to understand the different types of early childhood care and education centres.</p> <p>CO2: Students will be able to plan programmes for early childhood care and education programme.</p> <p>CO3: Students will be able to organize successfully activities to realize the objectives of early childhood care and education.</p>
EDU 300	Educational Technology	<p>CO1: Students will understand the concept, nature and significance of educational technology and its components in terms of hardware and software.</p> <p>CO2: Students will be exposed to the basic developments and the emerging trends in educational technology.</p>
EDU 301	Pedagogy	<p>CO1: Students will be introduced to the field of pedagogy.</p> <p>CO2: Students will understand the various theories of teaching.</p> <p>CO3: Students will be able to analyse classroom teaching-</p>

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		<p>learning and observe classroom behaviour and group dynamics.</p> <p>CO4: Students will develop positive attitude towards life and the teaching profession.</p>
EDU 302	Special Education	<p>CO1: Students will have the knowledge and understanding of the types of disorders.</p> <p>CO2: Students will be able to know the nature, characteristics and differences of gifted and creative children.</p> <p>CO3: Students will have the knowledge of educational provision for gifted and creative children.</p>
EDU 360	Higher Education	<p>CO1: Students will understand system of higher education in India and its historical development.</p> <p>CO2: Students will be able to evaluate the role and functions of important national bodies in the planning, management and control.</p> <p>CO3: Students will be able to comprehend emerging issues and developments in higher education in India.</p> <p>CO4: Students will be able to evaluate the status of higher education in the country.</p>
EDU 361	Educational Planning and Management	<p>CO1: Students will acquire a deep understanding of planning and management in education.</p> <p>CO2: Students will be equipped with the skills needed to effectively plan and manage educational programmes.</p> <p>CO3: It will facilitate in students sound financial decision making, financial management and stability.</p> <p>CO4: Students will gain knowledge about best practices in educational planning and management and its application to their own work.</p> <p>CO5: Students will be aware of effective leadership and its impact on the school community.</p>
EDU 362	Mental Health and Hygiene	<p>CO1: Students understand the fundamentals of mental health and hygiene.</p> <p>CO2: Students understand the role played by agencies of education in mental health.</p> <p>CO3: Students gain knowledge about various mental health issues and how to address them.</p>
EDU 363	Life Skills Education	<p>CO1: Students will be able to explain the essential life skills needed for their own progress.</p> <p>CO2: Students will be able to exhibit their ability to face</p>

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		<p>different problems.</p> <p>CO3: Students will be able to display their skills to manage their course of career.</p> <p>CO4: Students will be able to assess their own life skills.</p>
<p>Programme Specific Outcome</p>		<p>PSO1: After completing the course, students will be able to comprehend the nature and scope of sociology of education and analyse the process and agencies of socialization in educational contexts. They will understand the concept, history, and principles of human rights education, appreciate the importance of human rights in contemporary society, and apply human rights principles in educational and social settings. Students will be able to explain the meaning, scope, and branches of philosophy in education and analyse the relationship between philosophy and education, while also understanding modern trends such as e-learning and vocational education under the National Education Policy (NEP) 2020, along with the provisions and significance of the Right to Education (RTE) Act.</p> <p>PSO2: They will comprehend the concept, scope, and functions of curriculum, differentiate between various types of curricula, and understand the principles and importance of guidance and counselling in educational settings. Students will gain knowledge of Early Childhood Care and Education (ECCE), including its objectives, importance, and different types of ECCE centres such as Nursery, Kindergarten, Montessori, and Anganwadi. They will understand the concept, nature, and significance of educational technology and differentiate between teaching technology and instructional technology. Furthermore, students will comprehend the concept and nature of teaching, its relationship with learning, and analyse factors affecting teaching and its levels. They will understand the meaning, importance, and objectives of special education and classify exceptional children based on positive and negative dimensions.</p> <p>PSO3: Students will also understand the structure, objectives, and innovations in higher education in India under NEP 2020, along with the concept, importance, and process of educational planning, including institutional planning and its steps. Finally, students will comprehend the concept and importance of life skills based on frameworks such as the World Health Organization's core life skills.</p>
		<p>PO1: After completing the course, students will be able to develop an understanding of psychological principles in</p>

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Programme Outcome	<p>education and apply knowledge of human development in the teaching-learning process. They will understand social, cultural, and educational systems and apply sociological perspectives to analyse educational issues. Students will demonstrate awareness of human rights, peace, and social justice, and promote values of equality, dignity, and respect for diversity in educational and social contexts. They will develop critical and reflective thinking about education and life, understand philosophical perspectives, and analyse their influence on education. Students will also understand the role of educational organizations and regulatory bodies, while promoting awareness of social, environmental, and value-based education. Furthermore, students will be able to apply theoretical knowledge to design and implement effective curricula and demonstrate critical thinking in curriculum planning and evaluation. They will develop an understanding of guidance and counselling principles, promote mental health, self-awareness, and emotional well-being, and demonstrate competence in research principles, methodologies, and the use of appropriate tools for data collection and analysis.</p> <p>PO2: Students will acquire skills in planning and organizing Early Childhood Care and Education (ECCE) programmes and use creative, play-based methods for effective learning. They will understand the role of educational technology in modern education and apply technological tools to enhance teaching-learning processes. In addition, students will develop an understanding of teaching as a professional and reflective practice, along with inclusive and special education practices, and apply knowledge of diverse learner needs in educational settings. They will understand the structure and functioning of higher education in India and analyse educational policies, reforms, and governance.</p> <p>PO3: Finally, students will develop an understanding of planning and management in educational settings, mental health and hygiene, and promote emotional well-being and psychological stability among learners. They will also acquire essential life skills for personal and professional growth, including enhanced critical thinking, problem-solving, and decision-making abilities.</p>
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DEPARTMENT OF ENGLISH

GOVT. SERCHHIP COLLEGE COURSE OUTCOME NEP

Course Code	Course Name	Course Outcome
ENG 100	Introduction to Literature	<p>Course Outcomes: The students will be able to learn the important and seminal literary terms and forms and relate them to literature from different literary ages.</p> <p>PSO I: Poetry and Poetic Devices</p> <p>Outcome: Students will be able to identify and define fundamental poetic genres and stylistic devices, such as the Sonnet, Ballad, and Imagery.</p> <p>Specific Skill: They will demonstrate the ability to apply these terms through a critical reading of John Keats' La Belle Dame Sans Merci, explaining how the poem functions as a literary ballad.</p> <p>PSO II: Prose and Rhetorical Structures</p> <p>Outcome: Students will be able to distinguish between various prose forms and rhetorical strategies, including Satire, Antithesis, and Euphuism.</p> <p>Specific Skill: They will analyze the evolution of the periodical essay by examining Richard Steele's The Spectator Club, identifying the use of social satire and formal diction in 18th-century prose.</p> <p>PSO III: Drama and Theatrical Evolution</p> <p>Outcome: Students will be able to articulate the technical and philosophical elements of drama, from Aristotelian concepts like Catharsis and Hamartia to the structure of Miracle and Morality plays.</p> <p>Specific Skill: They will be able to evaluate the use of Allegory and didacticism in the play Everyman, linking medieval theatrical traditions to the</p>

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		<p>development of character and plot.</p> <p>PSO IV: Fiction and Narrative Technique</p> <p>Outcome: Students will be able to deconstruct the mechanics of storytelling, including Characterization, Narrative Technique, Irony, and Symbolism.</p> <p>Specific Skill: They will analyze George Orwell’s Animal Farm as a political fable, demonstrating how elements like Conflict, Climax, and Point of View serve to convey deeper socio-political themes.</p>
ENG 101	British Literature-I	<p>Course Outcome: The students will be able to link and distinguish between the varying genres of literature of the different periods of British Literature and will be able to identify and analyze different literary techniques and different genres in British Literature from the Elizabethan Age to the eighteenth century.</p> <p>PSO 1: Students will be able to identify and explain the major characteristics of three important literary periods: Elizabethan Age (Poetry), Restoration Period (Drama) and 18th Century (Fiction) They will understand how historical and cultural contexts shaped literary forms.</p> <p>PSO2. Students will develop the ability to distinguish between different literary genres, such as Pastoral poetry, The Shepheardes Calendar (January–April), Comedy of manners and Early novel. They will recognize structural and thematic differences across poetry, drama, and fiction</p> <p>PSO3. Students will be able to critically analyze prescribed texts, including and <i>The Way of the World</i> and <i>Robinson Crusoe</i>. They will interpret themes,</p>

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		<p>symbols, and literary devices.</p> <p>PSO 4: Students will be able to interpret key literary themes, such as Love and idealism in Elizabethan poetry, Social satire and marriage in Restoration drama and Individualism and survival in 18th-century fiction</p>
ENG 110	Introduction to Prose and Poetry (MDC)	<p>Course Outcome: Students are expected to understand the important literary terms and derive meaningful interpretations of the selected texts.</p>
		<p>PSO1: Students will be able to understand important literary terms such as Sonnet, Simile, Metaphor and Ode. They will develop the skill to analyse poems like William Shakespeare's Sonnet 130 and William Wordsworth's Ode: Intimations of Immortality with meaningful Interpretation.</p> <p>PSO2: Students will be able to understand the concepts of Biography, Auto-biography and Epistolary Writing. They will gain the ability to interpret prose texts such as Jawahar Lal Nehru's The Birthday Letter and appreciate its literary and historical significance.</p> <p>PSO3. Students will be able to understand the forms of Novella and Short story. They will develop critical reading and analytical skills through the study of Mafaa Hauhnan's The Haunted House and other selected short stories.</p>
ENG 150	AEC-I: Communication Skills	<p>Course Outcome: At the end of the course students are expected to acquire basic understanding of Verbal and Non-Verbal communication skills to enhance their ability to communicate effectively in</p>

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		<p>English.</p> <p>PSO1: Students will be able to understand the meaning, process, elements, and factors of communication. They will develop the ability to apply effective communication skills in academic, professional and social situations.</p> <p>POS2: Students will be able to identify verbal and non-verbal communication techniques, understand barriers to communication and learn methods to overcome these barriers for better interaction and understanding.</p> <p>POS3: Students will be able to improve verbal communication skills through vocal techniques, mock interviews, seminars and presentations, helping them gain confidence in public speaking and professional communication.</p>
ENG 160	World Literature	<p>Course Outcome: To analyze and appreciate literary texts from different parts of the world and receive them in the light of one's own literary traditions and to comprehend analyze and interpret literary texts in their cultural contexts.</p> <p>PSO I: Theoretical Foundation</p> <p>Outcome: Students will be able to define and distinguish the concept of "World Literature" from national and comparative literatures.</p>

		<p>Key Skill: Mastery of David Damrosch’s framework on how literature circulates globally and transforms through translation and cross-cultural reading.</p> <p>PSO II: Postcolonial & Regional Perspectives</p> <p>Outcome: Students will analyze the themes of indigenous identity, displacement, and environmental consciousness through the works of Wright, Atwood, and Thumboo.</p> <p>Key Skill: Identifying how Commonwealth writers use poetry to address the tension between local heritage and global colonial legacies (Bora Ring, The Exile).</p> <p>PSO III: The Short Story & Social Realism</p> <p>Outcome: Students will evaluate the nuances of 19th and 20th-century social structures, focusing on class, innocence, and human psychology in European and Colonial contexts.</p> <p>Key Skill: Comparing Dostoevsky’s critique of social hypocrisy in The Christmas Tree and the Wedding with Mansfield’s exploration of class consciousness in A Cup of Tea.</p> <p>PSO IV: The Contemporary Global Novel</p> <p>Outcome: Students will examine the impact of political upheaval, memory, and personal redemption within the context of Middle Eastern history.</p> <p>Key Skill: Critically interpreting Khaled Hosseini’s The Kite Runner as a vessel for understanding Afghan culture, the immigrant experience, and the universal</p>
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		<p>themes of guilt and atonement.</p> <p>Summary of Overarching Course Outcomes</p> <p>By the end of these four units, the student should be able to:</p> <p>Synthesize diverse literary traditions into a cohesive understanding of "The Human Experience."</p> <p>Apply critical theories to texts from varying geographical locations (Australia, Canada, Russia, New Zealand, and Afghanistan).</p> <p>Evaluate how translation and cultural context shape the reception of a literary masterpiece.</p>
ENG 161	British Literature-II (Romantics, Victorians, 20 th Century)	<p>Course outcome: The student shall be able to link and distinguish between the varying genres of different ages and will be able to identify and analyze the literary techniques in different genres in British literature.</p> <p>PSO 1: Students will be able to identify and critically understand the major characteristics of Romantic, Victorian, and 20th-century literature, situating texts within their historical, social, and cultural contexts.</p> <p>PSO 2: Students will develop the ability to analyze and interpret poetry and fiction, with close reading of prescribed texts such as <i>Ode to the West Wind</i>, <i>How Do I Love Thee?</i>, and <i>The Unknown Citizen</i>, focusing on themes, style, and literary devices.</p>

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		<p>PSO 3: Students will gain knowledge of different literary forms—poetry, fiction, and drama—and examine how these genres evolve across periods, particularly in works like <i>A Christmas Carol</i> and <i>Look Back in Anger</i>.</p> <p>PSO 4: Students will apply relevant critical approaches (such as romanticism, realism, modernism, and social criticism) to interpret texts and evaluate their ideological and aesthetic dimensions.</p> <p>PSO 5: Students will enhance their ability to articulate informed literary arguments, both in written and oral forms, demonstrating clarity, coherence, and critical insight into prescribed texts.</p>
ENG 200	American Literature	<p>Course outcome: The students shall critically engage with the complex nature of American society, given its journey from specific religious obligations and their literary transformation. They shall be able to explore and understand the nature of the relationships of human beings to other human beings and other life forms in relation to representative literary texts in various genres.</p>

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		<p>PSO1:Unit 1- Students will be able to understand Hector St, John Crevecoeur’s idea of American identity and analyse the concept of “What is an American?” in the historical and literary context.</p> <p>PSO2:Unit 2- Students will be able to interpret the themes of Individuality, freedom, racial identity and social criticism through the works of Robert Frost, Langston Hughes and Allen Ginsberg.</p> <p>PSO3:Unit 3- Students will be able to examine the ideas of self-reliance, equality, civil rights and the American Dream through the writings of R.W Emerson and Martin Luther King Jr.</p> <p>PSO4:Unit 4- Students will be able to critically analyse the themes of wealth, class, love, illusion, and disillusionment in F. Scott Fitzgerald’s The Great Gatsby.</p>
<p>ENG 201</p>	<p>Children’s Literature</p>	<p>Course outcome: To examine the importance and relevance of children's literature by exploring three children's novels.</p> <p>PSO 1 : Students will be able to identify and differentiate between the core sub-genres of children’s literature, including fables, moral tales, fantasy, and adventure stories, understanding the specific narrative conventions of each.</p> <p>PSO 2: Students will develop the ability to critically analyze how literary texts instill systems of values in young readers and how these stories provide frameworks for resolving life’s conflicts and moral dilemmas.</p> <p>PSO 3: Students will demonstrate an in-</p>

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		<p>depth understanding of seminal works— Alice’s Adventures in Wonderland, Treasure Island, and The Little Prince— evaluating their symbolism, thematic depth, and historical relevance.</p> <p>PSO 4: Students will be able to evaluate the "child-centric" narrative voice, examining how literature reflects the psychological development, curiosity, and imagination of young people.</p> <p>PSO 5: Students will acquire the skill to distinguish between instructive (didactic) literature and literature written for pure aesthetic pleasure or escapism, assessing how these different approaches impact the child reader's experience.</p>
ENG 260	Travel Writing	<p>Course Outcomes: To perceive the links between travel writing and translation and to analyze travel writing in relation to ethnography, gender, globalisation, religion and colonial and postcolonial positions. It shall appreciate the role of travel in shaping selfhood and otherness and relate the growth of travel writing to regional national and global identities and critically engage with the accounts of places visited by the foreigners and how their impressions change local perspectives of the places.</p> <p>PSO 1: Students will be able to define and explain travel writing as a literary genre, using ideas from <i>The Cambridge Introduction to Travel Writing</i>. They will understand its evolution, forms, and purposes. Students will develop the ability to analyze travel texts in their historical and cultural contexts.</p> <p>PSO 2: Students will be able to critically interpret and evaluate key texts, such as <i>Dancing in Cambodia</i> and <i>The Motorcycle</i></p>

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		<p><i>Diaries</i>. They will examine narrative style, perspective, and thematic concerns.</p> <p>PSO 3: Students will be able to identify bias, subjectivity, and representation in travel narratives.</p> <p>PSO 4: Students will be able to analyze major themes such as identity and self-discovery, cultural encounter and conflict, power, politics, and imperialism and journey as transformation.</p> <p>PSO 5: Students will develop the ability to compare different travel narratives, distinguishing between colonial vs. postcolonial writing, personal memoir vs. analytical essay and political vs. cultural travel accounts.</p> <p>PSO 6: Students will be able to evaluate the reliability of narrators, analyze tone, language, and descriptive techniques and form independent critical arguments.</p> <p>PSO 7: Students will gain awareness of Cross-cultural understanding, ethical issues in representation of “the other” and impact of travel writing on cultural perceptions</p>
ENG 261	Writings from North East India	<p>Course Outcome: Students will get acquainted to writers and writings in English from India's North- Eastern region and develop an understanding of some of the heterogeneous social, political, cultural and historical conditions out of which such writing arises, and to which it responds.</p> <p>PSO 1: Students will be able to identify</p>

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		<p>and categorize the diverse literary voices across the North-Eastern states, distinguishing between the unique stylistic and thematic contributions of writers from Tripura, Sikkim, Meghalaya, Manipur, Arunachal Pradesh, Mizoram, Assam, and Nagaland.</p> <p>PSO 2: Students will demonstrate a nuanced understanding of the indigenous cultures, tribal traditions, and belief systems (such as those reflected in <i>The Voice of the Mountain</i> or <i>Chhingpuii</i>) and how these elements are preserved or transformed through literary representation.</p> <p>PSO 3: Students will be able to critically analyze the "heterogeneous conditions"—including history, ethnic identity, and political movements—that shape the narratives of the region, understanding literature as a response to lived social realities.</p> <p>PSO 4: Students will develop the ability to evaluate how regional writers negotiate the complexities of identity, displacement, and the transition from oral traditions to written text in English.</p> <p>PSO 5: Students will assess the use of the English language as a medium for articulating local experiences, folklore, and regional aesthetics, recognizing how writers like Easterine Kire bridge the gap between global language and local "spirit."</p>
ENG 250	AEC-II: Grammar and Comprehension Skills	<p>Course Outcome: At the end of the course students will heighten their awareness of correct usage of English grammar in writing and composition</p>

		<p>PSO I: Structural Mastery of English</p> <p>Outcome: Students will demonstrate a precise understanding of English syntax by correctly identifying and utilizing Parts of Speech.</p> <p>Outcome: Students will be able to manipulate sentence structures through the mastery of Tense and Voice, ensuring clarity and chronological accuracy in writing.</p> <p>Outcome: Students will develop the ability to convert and report dialogue accurately using Direct and Indirect speech rules, essential for narrative and journalistic writing.</p> <p>PSO II: Syntactic Precision & Figurative Language</p> <p>Outcome: Students will apply the rules of Subject-Verb Agreement to eliminate grammatical inconsistencies in complex sentence structures.</p> <p>Outcome: Students will enrich their vocabulary and cultural literacy by effectively using Idioms and Phrases in appropriate contexts.</p> <p>Outcome: Students will develop the skill of Expansion of Passages, learning how to take a condensed idea or proverb and develop it into a coherent, well-structured paragraph.</p> <p>PSO III: Advanced Composition & Analytical Reading</p> <p>Outcome: Students will master the art of Précis Writing, demonstrating the ability to extract core information from lengthy texts while maintaining brevity and flow.</p> <p>Outcome: Students will exhibit</p>
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		<p>proficiency in Essay Writing, organizing thoughts logically into a persuasive or informative structure within a 300-word limit.</p> <p>Outcome: Students will enhance their Comprehension skills, showing the ability to analyze unfamiliar texts and answer inferential and literal questions accurately.</p>
ENG 300	Introduction to Folklore	<p>Course outcome: With this course, students are expected to have a deep insight into the cultural psyche of different races, their beliefs and traditional values. Literary interpretations of such cultural tales will enrich the existing storehouse of knowledge.</p> <p>PSO 1: Students will be able to explain the concept, scope, and functions of folklore including its role in preserving cultural traditions and collective memory.</p> <p>PSO 2: Students will develop the ability to compare European and Indian folktales. They will identify similarities and differences in themes, morals, and narrative patterns.</p> <p>PSO 3: Students will be able to analyze key themes and moral lessons in folktales such as justice, reward, and punishment; trickery and wisdom; human-animal relationships; and ethical and social values.</p> <p>PSO 4: Students will gain the ability to interpret and appreciate regional folklore, especially from Mizoram. They will understand folklore as an expression of local identity and tradition.</p> <p>PSO 5: Students will be able to critically evaluate folklore narratives and their</p>

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		<p>cultural contexts; identify narrative structures and storytelling techniques and communicate interpretations clearly in written and oral forms.</p>
ENG 301	Introduction to Literary Criticism	<p>Course Outcomes: Students will have a deeper understanding of literary theories and criticism as well as the part played by literary criticism in enriching creative works of art.</p> <p>PSO 1: Background and Historical Context</p> <p>Outcome: Students will be able to trace the historical evolution of English literary criticism.</p> <p>Key Skills: Identifying major critical movements and understanding the relationship between a literary era and the critical theories it produced, as outlined in B. Prasad's foundational text.</p> <p>PSO 2: Classical Age (Aristotle's Poetics)</p> <p>Outcome: Students will demonstrate a comprehensive understanding of Aristotelian concepts such as Mimesis (imitation), Catharsis, and the structural elements of Tragedy.</p> <p>Key Skills: Analyzing how classical Greek philosophy laid the groundwork for Western literary standards and the concept of "art as representation."</p> <p>PSO 3: Age of Dryden (An Essay of Dramatic Poesy)</p> <p>Outcome: Students will be able to evaluate the transition into Neoclassical criticism and the debate between Ancient</p>

		<p>and Modern standards of drama.</p> <p>Key Skills: Critiquing John Dryden's defense of English drama against French and Classical models, specifically focusing on the "Unities" and the purpose of dramatic poetry to delight and instruct.</p> <p>PSO 4: Romantic Age (Preface to the Lyrical Ballads)</p> <p>Outcome: Students will understand the "democratization" of poetry through Wordsworth's shift toward common language and the internal emotional state of the poet.</p> <p>Key Skills: Defining the Romantic concept of poetry as the "spontaneous overflow of powerful feelings" and articulating the radical break from the rigid formal structures of the previous century.</p> <p>Summary of Program-Specific Outcomes (PSOs)</p> <p>By the end of this course, a student should be able to:</p> <p>Compare and Contrast: Evaluate how the definition of "good literature" changed from the Classical period to the Romantic era.</p> <p>Apply Theory: Use the critical frameworks of Aristotle or Wordsworth to analyze contemporary creative works.</p> <p>Critical Literacy: Develop a vocabulary of technical terms (e.g., Hamartia, Pity and Fear, Poetic Diction) essential for higher-level literary research</p>
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ENG 302	Popular Literature	<p>Course Outcome: The course shall investigate the role of popular literature in the literary poly system of various linguistic cultures and demonstrate how popular literature belongs to a certain perature time. It shall analyse</p>
		<p>PSO1: Students will be able to critically analyze the concept of popular culture using theoretical frameworks from John Storey, demonstrating an understanding of how culture is produced, consumed, and circulated in contemporary society.</p> <p>PSO 2: Students will develop the ability to interpret and compare global cultural texts, including songs such as <i>Redemption Song</i> by Bob Marley, <i>Heal the World</i> by Michael Jackson, <i>DNA</i> by BTS, and <i>Zombie</i> by The Cranberries, with attention to socio-political, historical, and emotional contexts.</p> <p>PSO 3: Students will enhance critical thinking and interpretive skills by engaging with prose works like <i>All Summer in a Day</i> by Ray Bradbury and speeches such as Jeff Bezos’ reflections on character, choices, and human values.</p> <p>PSO 4: Students will cultivate ethical awareness, empathy, and emotional intelligence by exploring themes of isolation, kindness, memory, and moral choice across literary and non-literary texts.</p> <p>PSO 5: Students will develop creative and analytical skills by studying narrative</p>

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		techniques, genre conventions, and imaginative storytelling in works like <i>The Graveyard Book</i> by Neil Gaiman, enabling them to appreciate and produce nuanced literary responses.
ENG 350	AEC-III: Writing Skills	Course Outcome: At the end of the course Students are expected to acquire basic writing skills for academic and professional purposes.
		<p>PSO1: Students will be able to develop effective writing skills in Report writing including News Report, Editorials, Note-making and advertisements.</p> <p>POS2: Students will gain the ability to present information clearly, logically and professionally for academic and media purposes.</p> <p>POS3: Students will be able to prepare job applications and Resumes, write Abstracts and summaries and draft notices, Agendas and Minutes of meetings.</p> <p>POS4: Students will develop practical writing skills required for academic, administrative and professional communication.</p>
ENG 360	Elizabethan Tragedy	Course Outcomes: The students shall be able look deep into the culmination of English Renaissance, the richness of Elizabethan tragedies, the flowing smoothness of blank verse and its impact on world literature.
		PSO 1: Students will be able to reconstruct the physical and social

		<p>environment of the Elizabethan Theatre, analyzing how specific conventions of acting, speech, and staging (Unit I) influenced the writing and performance of tragedies.</p> <p>PSO 2: Students will demonstrate the ability to trace the development of the English tragedy from its early "Revenge Tragedy" roots in Thomas Kyd's <i>The Spanish Tragedy</i> to the sophisticated psychological dramas of the high Elizabethan period.</p> <p>PSO 3: Students will evaluate how the "Culmination of the English Renaissance" shaped dramatic content, specifically exploring how changing views on religion, humanism, and statecraft are reflected in plays like Marlowe's <i>Doctor Faustus</i>.</p> <p>PSO 4: Students will acquire the skill to analyze the "flowing smoothness of blank verse," understanding its technical structure and its revolutionary impact on the English language and world literature.</p> <p>PSO 5: Students will develop the critical tools to analyze the complex characterization and the "performer's art," examining how internal identity and external performance collide in tragic heroes like Macbeth.</p> <p>PSO 6: Students will be able to synthesize core Elizabethan themes—</p>
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		such as ambition, fate, justice, and the supernatural—and assess their enduring relevance in modern literary and dramatic discourse.
ENG 361	Indian Writings in English	<p>Course Outcome: The course outcome of this paper are to enable the students appreciate the literary traits of Indian authors writing in English by providing a good knowledge of the major characteristics of Indian Literature in English.</p> <p>PSO1: Students will be able to understand the development of Indian Writing in English and identify the major themes, literary movements and contributions of Indian authors through A.K Mehrotra's An Illustrated History of Indian Literature In English.</p> <p>PSO2: Students will be able to analyse poetic themes such as nature, memory, identity, human suffering and adventure through the poems of Toru Dutt, A.K Ramanujan, Jayanta Mahapatra and Nissim Ezekiel.</p> <p>PSO3: Students will be able to interpret social, ethical and technological issues presented in Manjula Padmanabhan's Harvest and develop critical thinking about contemporary human values and society.</p> <p>PSO4: Students will be able to examine themes of class struggle, corruption, social inequality and Modern Indian society through Arvind Adiga's The White Tiger and relate them to present day realities.</p>
ENG 362	Women's Writings	Course Outcome: At the end of the course students are expected to

		<p>understand and appreciate the representation of female experience in literature and to link the status of women to social discrimination and social change in order to draw a location specific trajectory of female bonding or empowerment.</p>
		<p>PSO 1: Students will be able to understand and critically explain key feminist concepts such as androcentrism, essentialism, gender, masculinity, and the waves of feminism, applying them effectively in literary analysis.</p> <p>PSO 2: Students will develop the ability to analyze and interpret feminist themes in poetry, engaging closely with works by Sylvia Plath, Emily Dickinson, and Carol Ann Duffy, with attention to voice, identity, and resistance.</p> <p>PSO 3: Students will critically examine representations of gender, power, and oppression in dramatic and prose texts such as those by Caryl Churchill and Mahasweta Devi, linking them to broader feminist discourse.</p> <p>PSO 4: Students will explore how race, class, caste, and sexuality intersect with gender in literary texts, particularly in works like <i>The Color Purple</i>, developing a nuanced and inclusive understanding of feminism.</p> <p>PSO 5: Students will enhance their ability to construct coherent feminist arguments, both in written and oral forms, demonstrating critical thinking,</p>

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		textual engagement, and theoretical application.
ENG 363	Commonwealth Literature	<p>Course Outcome: Students will have a chance to explore the cultural dilemma that stems out of colonization and how certain societies managed to adapt themselves from British colonization.</p> <p>PSO 1: Students will be able to explain the concept and scope of Commonwealth/Postcolonial literature using Critical Perspective on Commonwealth Literature, including its historical background and global significance.</p> <p>PSO 2: Students will develop the ability to analyze the impact of colonialism and postcolonial identity. They will examine themes like cultural conflict, identity crisis, and resistance.</p> <p>PSO 3: Students will be able to compare literary works from different Commonwealth regions, such as Caribbean (Derek Walcott), Australian (Dorothea Mackellar), New Zealand (Allen Curnow) and African (Ngugi wa Thiong'o, Chinua Achebe).</p> <p>PSO 4: Students will be able to interpret key themes such as identity and belonging, land and displacement and colonialism and resistance, tradition vs. modernity etc.</p> <p>PSO 5: Students will develop the ability to critically evaluate literary texts and dramatic works such as <i>I Will Marry When I Want</i>, construct well-organized written responses and use appropriate literary and critical terminology.</p>

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**COURSE OUTCOME (COs), PROGRAMME SPECIFIC OUTCOMES (PSOs)
AND PROGRAMME OUTCOMES (POs)
DEPARTMENT OF GEOGRAPHY, GOVT. SERCHHIP COLEGE**

DEPARTMENT OF GEOGRAPHY		
Course Code	Course Name	CO/PSO/PO
GEOG100	Physical Geography	<p>CO1: Comprehend Planetary Origins: Explain the various theories regarding the birth of the solar system and the universe, specifically evaluating the scientific shift from the Nebular Hypothesis to the Big Bang Theory.</p> <p>CO2: Analyse Geomorphic Processes: Differentiate between endogenetic and exogenetic forces, and explain how orogenic (mountain-building) and epeirogenetic (continent-forming) movements shape the Earth's crust.</p> <p>CO3: Evaluate Tectonic Dynamics: Critically examine the evolution of Earth's surface through the lenses of Continental Drift, Seafloor Spreading, and Plate Tectonic theories.</p> <p>CO4: Understand Earth's Interior & Materials: Identify the chemical and physical stratification of the Earth's interior and classify rocks and minerals based on their origin, composition, and</p>

		<p>characteristics.</p> <p>CO5: Assess Natural Hazards: Describe the mechanisms, causes, and spatial distribution of earthquakes and volcanic activity globally.</p> <p>CO6: Interpret Oceanographic Patterns: Map the relief features of the ocean floor and analyse the dynamics of tides, salinity distribution, and major current systems in the Atlantic and Pacific Oceans.</p> <hr/> <p>PSO1: Foundational Scientific Knowledge: Acquire a deep understanding of the physical environment and the fundamental laws of nature that govern Earth's systems.</p> <p>PSO2: Spatial Thinking & Analysis: Develop the ability to analyse the spatial distribution of physical phenomena and understand the "where" and "why" of geographical patterns.</p> <p>PSO3: Environmental Stewardship: Recognise the delicate balance of Earth's physical systems and develop an ethical perspective on resource management and environmental protection.</p> <p>PSO4: Critical Thinking & Problem Solving: Use scientific reasoning to interpret complex geological and oceanographic data, fostering the ability to predict and mitigate natural disasters.</p> <p>PSO5: Technical Proficiency: Gain</p>
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		<p>competence in using geographical tools, maps, and terminologies required for higher research or professional roles in geology, meteorology, or urban planning.</p> <p>PSO6: Communication of Science: Effectively communicate scientific concepts and findings through written reports, maps, and oral presentations.</p>
GEOG101	Human Geography	<p>CO1: Conceptualise Human Space: Define the nature and scope of Human Geography and differentiate between the core geographical concepts of Space, Place, Landscape, and Region.</p> <p>CO2: Analyse Cultural Diversity: Identify and map the global distribution of major races, religions, and languages, and understand the formation of distinct cultural regions.</p> <p>CO3: Evaluate Human-Environment Interaction: Analyse how different communities, specifically the Eskimos, Bushmen, Masai, and Gujjars, adapt their lifestyles, economies, and social structures to extreme environmental conditions.</p> <p>CO4: Interpret Demographic Patterns: Compare and contrast the growth, density, and distribution of populations between developed and less developed nations.</p> <p>CO5: Assess Population Dynamics: Analyse population composition by examining Age-Sex Pyramids and their implications for a country's socio-economic future.</p> <p>PSO1: Geographic Literacy: Demonstrate</p>

		<p>a comprehensive understanding of human-societal evolution and the spatial organisation of human activities across the globe.</p> <p>PSO2: Socio-Cultural Sensitivity: Develop a nuanced perspective on global cultural diversity, fostering an ability to work in multicultural environments and respect indigenous knowledge systems.</p> <p>PSO3: Ecological Adaptability: Apply the lessons of human adaptation (from nomadic and tribal societies) to contemporary discussions on climate change and sustainable living.</p> <p>PSO4: Demographic Analysis: Utilise statistical and cartographic techniques to interpret population data, which is essential for urban planning, policy-making, and resource management.</p> <p>PSO5: Field Research & Observation: Develop the skills to observe and document the interaction between "man and environment" through field studies, specifically focusing on marginalised or traditional communities.</p>
GEOG110	Geography of Mizoram	<p>CO1: Analyse Physiographic Features: Describe the distinctive North-South trending ridges, the drainage patterns of major rivers like the Tlawng and Chhimtuipui, and the influence of the tropical monsoon climate on the state.</p> <p>CO2: Evaluate Biodiversity: Identify the rich floral and faunal diversity of Mizoram and assess the environmental challenges</p>

		<p>facing its forest ecosystems.</p> <p>CO3: Interpret Demographic & Ethnic Trends: Examine the distribution and growth of population in Mizoram, with a specific focus on its unique ethnic composition and the rapid pace of urbanisation in the state.</p> <p>CO4: Assess Land Use & Agriculture: Critically analyse the traditional practice of Jhum (shifting cultivation) versus sedentary farming, and evaluate the changing land-use patterns in the hills.</p> <p>CO5: Evaluate Economic Infrastructure: Appraise the status of small-scale industries and the challenges of transportation and connectivity within the rugged terrain of the Indo-Myanmar borderland.</p> <p>PSO1: Regional Expertise: Develop an in-depth understanding of the North-Eastern frontier of India, specifically the physical and social geography of Mizoram.</p> <p>PSO2: Sustainable Hill Development: Apply geographical knowledge to propose solutions for sustainable development in mountainous terrains, balancing economic growth with ecological conservation.</p> <p>PSO3: Ethno-Geographical Proficiency: Understand the spatial distribution of ethnic groups and the importance of cultural identity in regional planning and administration.</p>
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		<p>PSO4: Resource Management: Acquire the ability to analyse local resources—such as bamboo, horticulture, and water—to aid in regional economic policy and disaster management (specifically regarding landslides and forest fires).</p>
GEOG160	Geography of India	<p>CO1: Evaluate Physical Diversity: Analyse the complex physiographic divisions of India—from the Himalayas to the Peninsular Plateau—and explain the seasonal dynamics of the Indian Monsoon and drainage systems.</p> <p>CO2: Interpret Demographic Trends: Explain the spatial patterns of population density and growth across different states, and analyse the drivers of internal migration and rapid urbanisation in the Indian context.</p> <p>CO3: Assess Resource Distribution: Identify and map the major deposits of iron ore, coal, and petroleum, evaluating their role in India's industrial and energy security.</p> <p>CO4: Analyse Agrarian Patterns: Critique the production and distribution of key crops (Rice, Wheat, and Tea) and understand the geographical requirements that dictate India's agricultural zones.</p> <p>CO5: Understand Social Stratification: Describe the spatial distribution of India's diverse racial, linguistic, and religious groups, and recognise the geographical hearths of major Indian tribes.</p> <p>PSO1: National Geographic Proficiency: Develop a holistic understanding of India as a geographical entity, bridging the gap</p>

		<p>between its physical environment and human development.</p> <p>PSO2: Resource Management & Policy: Gain the ability to analyse the distribution of natural resources to suggest sustainable management practices for India's energy and mining sectors.</p> <p>PSO3: Demographic Analysis for Planning: Apply knowledge of population composition and migration to contribute to urban planning and regional development policies within India.</p> <p>PSO4: Cultural & Social Awareness: Cultivate an advanced understanding of India's "Unity in Diversity" by studying the spatial distribution of ethnic, linguistic, and tribal communities.</p> <p>PSO5: Environmental Problem Solving: Develop skills to address India-specific challenges, such as monsoon variability, water scarcity in major river basins, and the impact of climate change on Indian biodiversity.</p>
GEOG161	Environmental Geography	<p>CO1: Conceptualise Environmental Systems: Define the scope of Environmental Geography and analyse the intricate components (biotic and abiotic) that constitute an ecosystem.</p> <p>CO2: Analyse Energy and Nutrient Dynamics: Explain the thermodynamic principles of energy flow through trophic levels and the complex mechanisms of the Hydrological, Carbon, and Nitrogen cycles.</p>

		<p>CO3: Evaluate Environmental Degradation: Identify the causes and consequences of air and water pollution, deforestation, and the loss of biodiversity, while proposing scientific management strategies.</p> <p>CO4: Interpret Conservation Frameworks: Distinguish between global and national environmental policies and evaluate the importance of Biodiversity Hotspots in planetary health.</p> <p>CO5: Assess Protected Area Networks: Analyse the role of National Parks and Wildlife Sanctuaries in in-situ conservation and their spatial distribution across different geographical regions.</p> <p>PSO1: Ecological Literacy: Develop a deep understanding of the interdependence between life forms and their physical environment, fostering a holistic view of the Earth as a living system.</p> <p>PSO2: Environmental Impact Assessment: Gain the ability to evaluate human interventions in nature and predict their long-term effects on local and global ecosystems.</p> <p>PSO3: Policy & Advocacy Proficiency: Acquire knowledge of environmental laws and international treaties, enabling the student to contribute to environmental activism, legal compliance, or policy drafting.</p> <p>PSO4: Conservation Planning: Develop</p>
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		<p>technical skills to identify ecologically sensitive zones and suggest measures for the protection of endangered species and habitats.</p> <p>PSO5: Resource Sustainability: Apply the principles of bio-geochemical cycles and energy flow to promote sustainable resource use and climate change mitigation strategies.</p>
GEOG 200	Climatology	<p>CO1: Analyse Atmospheric Structure: Explain the chemical composition and vertical thermal layering of the atmosphere, and how these factors influence meteorological phenomena.</p> <p>CO2: Evaluate Thermal Balances: Quantify the Earth's Heat Budget and the role of Insolation in maintaining the planet's thermal equilibrium.</p> <p>CO3: Deconstruct Global Circulation: Analyse the origin and movement of global air masses and wind systems, and differentiate between the mechanics of Tropical and Temperate Cyclones.</p> <p>CO4: Interpret Monsoon Mechanisms: Critique the evolution of Monsoon theories (from Classical to Modern) and assess the teleconnections of Jet Streams, El-Niño, and La Niña on regional weather patterns.</p> <p>CO5: Apply Climatic Classifications: Classify global climates using the quantitative and empirical models of Koppen, Thornthwaite, and Trewartha.</p>

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		<p>CO6: Assess Climate Crisis: Evaluate the anthropogenic and natural drivers of Global Warming and their multi-dimensional effects on the physical and human environment.</p> <p>PSO1: Meteorological Proficiency: Develop the ability to interpret complex atmospheric data and weather maps to understand real-time climatic shifts.</p> <p>PSO2: Predictive Modelling Skills: Use knowledge of El-Niño, Jet Streams, and monsoon theories to understand and predict agricultural and economic outcomes, particularly in the Indian subcontinent.</p> <p>PSO3: Climate Advocacy & Mitigation: Apply an understanding of climate change causes and effects to contribute to policy discussions, urban planning, and disaster management strategies.</p> <p>PSO4: Comparative Regional Analysis: Gain the skill to categorise any region's climate globally based on statistical data through various classification systems.</p> <p>PSO5: Scientific Communication: Translate complex atmospheric processes into accessible information for environmental conservation and public awareness.</p>
GEOG201	Economic Geography	<p>CO1: Categorise Economic Systems: Classify economic activities into primary, secondary, and tertiary sectors and differentiate the socio-economic characteristics of developed and developing nations.</p>

		<p>CO2: Evaluate Extractive Economies: Analyse the spatial patterns and economic significance of Primary Activities, ranging from subsistence farming to large-scale commercial forestry, fishing, and mining operations.</p> <p>CO3: Analyse Industrial Landscapes: Examine the manufacturing processes and global distribution of the Iron & Steel and Cotton Textile industries.</p> <p>CO4: Interpret Modern Economic Zones: Assess the strategic role of Special Economic Zones (SEZs) and Technology Parks in driving regional development and national GDP.</p> <p>CO5: Apply Locational Theories: Utilise Weber's Industrial Location Theory to determine the most cost-effective sites for industries based on raw materials, labour, and transport.</p> <p>CO6: Critically Assess Globalisation: Evaluate the impact of Economic Globalisation on local industries and the shifting nature of international trade and labour markets.</p> <p>PSO1: Economic-Spatial Literacy: Develop the ability to link geographical locations with their economic potential, understanding why certain regions prosper while others lag.</p> <p>PSO2: Industrial Planning & Strategy: Apply locational models and knowledge of SEZs to contribute to industrial planning,</p>
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		<p>site selection, and regional economic policy.</p> <p>PSO3: Resource Evaluation: Acquire technical proficiency in assessing the viability of natural resources (mineral, forest, and aquatic) for sustainable industrial use.</p> <p>PSO4: Global Market Awareness: Understand the interconnectedness of global economies, preparing the student for roles in international trade, logistics, and economic research.</p> <p>PSO5: Sustainability in Production: Advocate for sustainable practices in primary and secondary sectors to balance economic growth with environmental conservation.</p>
GEOG 260	Geomorphology	<p>CO1: Comprehend Geomorphic Philosophies: Define the nature of geomorphology and evaluate fundamental concepts such as Uniformitarianism and the influence of climate and geological processes based on W.D. Thornbury's frameworks.</p> <p>CO2: Analyse Denudational Processes: Distinguish between types of Weathering (chemical, physical, biological) and Mass Wasting, and explain their role in preparing the landscape for erosion.</p> <p>CO3: Critique Cycles of Erosion: Compare and contrast the "Cycle of Erosion" models proposed by W.M. Davis (Youth, Maturity, Old Age) and Walther Penck, specifically their differing views on uplift and erosion rates.</p>

		<p>CO4: Identify Landform Assemblages: Recognise and explain the development of landforms created by Fluvial (rivers), Glacial (ice), Aeolian (wind), and Karst (groundwater) agents.</p> <p>CO5: Evaluate Slope Evolution: Analyse the theoretical models of hillside slope development, including Davis's Down-wasting, King's Parallel Retreat, and Penck's Slope Replacement.</p> <p>CO6: Explore Modern Trends: Identify contemporary shifts in the field, moving from purely descriptive studies to quantitative, process-based, and applied geomorphology.</p> <p>PSO1: Landscape Interpretation: Develop the skill to "read" the landscape, identifying the history and future trajectory of landforms based on their current morphology.</p> <p>PSO2: Field Investigation Proficiency: Gain the ability to conduct field surveys to document weathering patterns, slope stability, and sediment transport in various environmental contexts.</p> <p>PSO3: Theoretical Application: Apply classical geomorphic models (Davis, Penck, King) to solve real-world problems related to land-use planning, civil engineering, and soil conservation.</p> <p>PSO4: Geomorphic Mapping: Acquire technical competence in mapping landforms and understanding spatial</p>
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		<p>relationships between different geological structures and the processes acting upon them.</p> <p>PSO5: Environmental Hazard Assessment: Utilise knowledge of mass wasting and slope evolution to identify zones prone to landslides and erosion, aiding in disaster risk reduction.</p>
GEOG261	Population and Settlement Geography	<p>CO1: Analyse Global Population Dynamics: Define the scope of Population Geography and explain the spatial patterns of world population growth, density, and distribution.</p> <p>CO2: Evaluate Migration & Workforce: Identify the types and socio-economic determinants of Migration, and analyse the composition of the workforce across different occupational sectors.</p> <p>CO3: Interpret Demographic Structures: Assess Age-Sex composition using population pyramids and explain the biological and social factors that determine these structures.</p> <p>CO4: Critique Demographic Theories: Compare the pessimistic outlook of Malthusian Theory with the Marxian perspective, and apply the Demographic Transition Theory to understand a nation's development stage.</p> <p>CO5: Assess Population-Resource Balance: Define and differentiate between the concepts of Over-population, Under-population, and Optimum population in relation to regional resources.</p>

		<p>CO6: Analyse Settlement Morphology: Distinguish between various Rural Settlement patterns and understand the classification of Indian towns, including the distinction between Notified Towns and Census Towns.</p> <p>CO7: Evaluate Urban Expansion: Explain the geographical characteristics of the Rural-Urban Fringe and the strategic role of Satellite Towns in managing urban sprawl.</p> <p>PSO1: Demographic Analysis: Gain the technical ability to interpret census data, vital statistics, and population pyramids to aid in regional socio-economic planning.</p> <p>PSO2: Settlement Planning & Mapping: Develop the skill to identify and map settlement patterns (linear, radial, nucleated) and analyse the morphology of human habitats for better infrastructure development.</p> <p>PSO3: Policy Evaluation: Acquire the knowledge to evaluate national population policies and urban development schemes by understanding the drivers of migration and urbanisation.</p> <p>PSO4: Sustainable Habitation: Apply the concept of "Optimum Population" to advocate for sustainable resource management and balanced regional development.</p> <p>PSO5: Urban-Rural Synthesis: Understand the complexities of the rural-urban interface, preparing the student for</p>
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		careers in town planning, land-use management, and rural development.
GEOG300	Geographical Thought	<p>CO1: Evaluate Classical Foundations: Analyse the foundational contributions of Greek, Roman, and Arab geographers, specifically focusing on their roles in early cartography, mathematical geography, and regional descriptions.</p> <p>CO2: Assess Methodological Shifts: Examine the transition to modern geography through the dualistic frameworks of Varenus and Kant, and the empirical, holistic approaches of Humboldt and Ritter.</p> <p>CO3: Critique Man-Environment Philosophies: Differentiate between the schools of Environmental Determinism, Possibilism, and Neo-Determinism (Stop-and-Go Determinism), and understand their impact on geographical interpretation.</p> <p>CO4: Interpret Spatial Paradigms: Explain the concept of Areal Differentiation (Hartshorne) and its role in establishing geography as a chorological science.</p> <p>CO5: Analyse the Quantitative Revolution: Critically assess the 1950s shift toward statistical modelling, spatial science, and the search for universal laws in geography.</p> <p>CO6: Explore Contemporary Perspectives: Compare the post-quantitative paradigms, including Behavioralism (perception), Humanism (agency), Radical Geography (social justice),</p>

		<p>and their relevance to modern social issues.</p> <p>PSO1: Philosophical Literacy: Develop a deep understanding of the intellectual history of geography, enabling the student to place current research within a broader philosophical context.</p> <p>PSO2: Critical Thinking & Epistemology: Gain the ability to question the "how" and "why" of geographical knowledge production, recognising that geography is not just a collection of facts but a series of evolving perspectives.</p> <p>PSO3: Methodological Versatility: Acquire the capacity to choose appropriate research methodologies—ranging from quantitative spatial analysis to qualitative humanistic approaches—based on the research problem.</p> <p>PSO4: Social Responsibility: Apply the principles of Radical and Humanistic geography to address real-world issues such as inequality, territorial justice, and environmental ethics.</p> <p>PSO5: Global Intellectual Perspective: Recognise the cross-cultural contributions (especially from the Arab world) that have</p>
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		shaped the global understanding of space and place.
GEOG301	Cartographic Technique	<p>CO1: Master Scaling Techniques: Explain the significance of cartography in geographical studies and demonstrate the ability to construct and convert various types of scales, including Plain and Diagonal Scales.</p> <p>CO2: Interpret Topographic Forms: Visualise and represent three-dimensional landforms such as cliffs, V-shaped valleys, and river meanders using contour lines and cross-sectional profiles.</p> <p>CO3: Evaluate Map Projections: Understand the mathematical and graphical principles behind map projections and construct Polar Zenithal Stereographic, Bonne's, and Mercator's Projections based on specific regional requirements.</p> <p>CO4: Apply Statistical Mapping: Utilise thematic cartograms, specifically the Dot and Shade (Choropleth) methods, to represent spatial distribution and density patterns.</p> <p>CO5: Analyse Topographical Sheets: Interpret Survey of India (or equivalent) topographic maps to establish correlations between physical features (relief and drainage) and human features (settlements and transport).</p> <p>CO6: Conduct Quantitative Morphometry: Apply Wentworth's Method of slope analysis to calculate and map the average slope of a given geographical area.</p>

		<p>PSO1: Cartographic Precision: Develop the manual and technical skills required to produce accurate, professional-grade maps that adhere to international cartographic standards.</p> <p>PSO2: Spatial Representation Proficiency: Acquire the ability to choose the most appropriate projection and scale for mapping different regions of the world (e.g., using Mercator for navigation or Bonne’s for mid-latitude countries).</p> <p>PSO3: Analytical Map Reading: Gain an expert-level ability to interpret complex map symbols and patterns, enabling the student to extract critical data for urban planning, disaster management, and environmental monitoring.</p> <p>PSO4: Quantitative Geographical Analysis: Develop the skill to translate visual map data into quantitative values (such as slope degrees or population density) for scientific research and reporting.</p> <p>PSO5: Practical Problem Solving: Use cartographic tools to solve real-world spatial problems, such as determining the best route for transportation or identifying suitable sites for settlement based on relief analysis.</p>
GEOG302	Agriculture Geography	<p>CO1: Evaluate Theoretical Approaches: Define the scope of Agricultural Geography and apply the Environmental, Economic, Ecological, and Systematic approaches to analyse farming patterns.</p>

		<p>CO2: Trace Agricultural Origins: Analyse the theories regarding the Origin and Dispersal of Agriculture and the transition from foraging to sedentary farming.</p> <p>CO3: Assess Agricultural Determinants: Identify and evaluate how Physical (climate/soil), Socio-Economic, Technological, and Institutional (land reforms) factors dictate agricultural practices.</p> <p>CO4: Apply Spatial Models: Critically examine Whittlesey's Classification of global agricultural systems and apply the Von Thünen Model of agricultural land use to understand the intensity of farming around urban centres.</p> <p>CO5: Measure Productivity & Regionalisation: Calculate agricultural Productivity and efficiency, and differentiate between the various Agro-Climatic Regions of India.</p> <p>CO6: Critique Indian Agricultural Development: Evaluate the impact of the Green Revolution and analyse the unique challenges of the North-East Region, with a specific focus on Shifting Cultivation (Jhum) and Plantation Agriculture.</p> <p>CO7: Focus on Regional Prospects: Assess the specific problems and future prospects of Agriculture in Mizoram, considering its mountainous topography and climate.</p> <p>PSO1: Agrarian Literacy: Develop a comprehensive understanding of the global</p>
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		<p>and national agricultural landscape, linking food production to geographical constraints.</p> <p>PSO2: Quantitative Analysis in Agriculture: Gain proficiency in using statistical techniques to measure agricultural efficiency and cropping intensity for regional research.</p> <p>PSO3: Sustainable Land Management: Acquire the ability to propose sustainable alternatives to ecologically sensitive practices like shifting cultivation, particularly in the context of the Himalayan and North-Eastern terrains.</p> <p>PSO4: Policy & Development Expertise: Develop the skills to evaluate agricultural policies (like the Green Revolution or New Agricultural Policy) and contribute to rural development planning.</p> <p>PSO5: Regional Problem Solving: Apply geographical knowledge to address local agricultural bottlenecks in Mizoram, such as irrigation in hills, terracing, and market connectivity.</p>
GEOG360	Fundamentals of Remote Sensing & GIS	<p>CO1: Comprehend Geospatial Fundamentals: Define the core components of Remote Sensing and GIS, and differentiate between various satellite orbits (Sun-synchronous vs. Geostationary) and sensor platforms.</p> <p>CO2: Analyse Physical Principles of RS: Explain the physics of Electromagnetic Radiation (EMR), including its interaction with the atmosphere (scattering and</p>

		<p>absorption) and its unique "spectral signatures" when hitting Earth's surface features.</p> <p>CO3: Evaluate Sensor Capabilities: Distinguish between the four types of sensor resolutions—Spatial, Spectral, Radiometric, and Temporal—and determine their suitability for specific environmental or urban tasks.</p> <p>CO4: Master Data Modeling: Differentiate between Raster and Vector data models and understand the structural differences between spatial (coordinate-based) and non-spatial (attribute) data.</p> <p>CO5: Execute Geometric Corrections: Understand the technical process of Geo-referencing to align raw spatial data with real-world coordinate systems.</p> <p>CO6: Apply Visual Interpretation: Utilize the basic elements of image interpretation (shape, size, tone, texture, pattern, shadow, and association) to extract information from satellite imagery.</p> <p>CO7: Implement Geospatial Solutions: Apply RS and GIS techniques to monitor real-world changes, specifically in Land Use/Land Cover (LULC) mapping, Urban Sprawl analysis, and Forest Monitoring.</p>
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		<p>PSO1: Technological Proficiency: Acquire hands-on competence in handling digital spatial data, preparing the student for technical roles in the GIS industry, environmental agencies, and urban planning departments.</p> <p>PSO2: Analytical Problem Solving: Develop the ability to integrate diverse data layers (e.g., combining rainfall, slope, and vegetation) to perform complex spatial analysis for disaster management or resource optimisation.</p> <p>PSO3: Environmental Monitoring Skills: Gain the expertise to use satellite data for "change detection" analysis, enabling the monitoring of deforestation, glacial melt, or urban expansion over time.</p> <p>PSO4: Precision Mapping: Develop the skill to produce high-accuracy digital maps that serve as critical decision-support tools for government and non-governmental organisations.</p> <p>PSO5: Cross-Disciplinary Integration: Understand how RS and GIS act as a bridge between Geography and other fields like Civil Engineering, Forestry, Agriculture, and Public Health.</p>
GEOG361	<p>Surveying and Research Methodology (Practical)</p>	<p>CO1: Execute Field Surveys: Demonstrate proficiency in using surveying instruments, including the Plane Table (Radial and Intersection methods), Dumpy Level for elevation, and Prismatic Compass for both open and closed traverses.</p> <p>CO2: Conceptualise Research Design:</p>

		<p>Define the nature and objectives of research and execute the foundational steps of the research process, from Problem Identification to conducting a systematic Literature Review.</p> <p>CO3: Implement Data Collection Strategies: Design effective Questionnaires and select appropriate Sampling techniques (random, stratified, etc.) to ensure representative data for geographical studies.</p> <p>CO4: Perform Data Cleaning: Identify and manage Outliers and assess data distribution using measures of Normality (Skewness and Kurtosis) before proceeding to analysis.</p> <p>CO5: Apply Statistical Analysis: Calculate and interpret measures of Central Tendency and Dispersion (Standard Deviation, Coefficient of Variation) to describe geographical datasets.</p> <p>CO6: Determine Spatial Associations: Quantify relationships between variables using Pearson's and Spearman's Correlation and predict trends using Simple Linear Regression.</p> <p>CO7: Practice Academic Integrity: Produce high-quality reports featuring structured Abstracts and Synopses, while adhering to proper Citation styles and ethics regarding Plagiarism.</p>
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		<p>PSO1: Field Mapping Proficiency: Acquire the technical skill to create accurate, scale-drawn maps of small areas using ground-based surveying techniques, essential for civil work and local planning.</p> <p>PSO2: Quantitative Analytical Skills: Develop an advanced ability to handle large datasets, enabling the student to move beyond descriptive geography into predictive and inferential analysis.</p> <p>PSO3: Scientific Communication & Ethics: Gain the ability to draft professional research papers and reports that meet international academic standards for transparency, citation, and original thought.</p> <p>PSO4: Logical Problem Solving: Use the "Research Process" framework to approach complex geographical problems—such as land-use change or social disparities—systematically and objectively.</p> <p>PSO5: Evidence-Based Decision Making: Utilise statistical findings (like regression and variance) to provide data-driven recommendations for environmental management and regional development.</p>
GEOG362	Remote Sensing, GIS and Project Work (Practical)	<p>CO1: Interpret Satellite Imagery: Perform thematic mapping and visual interpretation of satellite data to identify Land Use/Land Cover (LULC) patterns and geomorphic features.</p> <p>CO2: Execute Digital Geo-rectification: Demonstrate proficiency in Geo-referencing topographical sheets to real-world</p>

		<p>coordinates using GIS software.</p> <p>CO3: Implement Vector Data Models: Digitally identify and create spatial layers for Point (e.g., wells), Linear (e.g., roads), and Areal (e.g., forest patches) features.</p> <p>CO4: Apply Digital Cartography: Utilise GIS software to produce professional Choropleth maps and design sophisticated Map Layouts, including all essential map elements (Scale, Legend, North Arrow).</p> <p>CO5: Conduct Empirical Fieldwork: Design and execute a week-long field study to collect primary data on Socio-economic or Environmental conditions in a specific local context.</p> <p>CO6: Synthesise Original Research: Integrate primary field observations with secondary data to produce a typed, structured Project Report that reflects original analysis and geographical interpretation.</p> <p>CO7: Defend Research Findings: Effectively communicate research methodology, findings, and spatial analysis during a Viva-Voce examination.</p>
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		<p>PSO1: Geospatial Software Proficiency: Develop advanced technical skills in using industry-standard GIS software, making the student "job-ready" for roles in urban planning, disaster management, and environmental consultancy.</p> <p>PSO2: Independent Research Capability: Acquire the confidence and methodology required to conduct independent geographic inquiries, from the initial hypothesis stage to final report writing.</p> <p>PSO3: Technical Communication: Master the art of scientific report writing, ensuring the ability to present complex spatial and socio-economic data in a clear, professional A4-format document.</p> <p>PSO4: Critical Observation & Interpretation: Enhance the ability to link theoretical knowledge (from classroom learning) with real-world observations during field-based project work.</p> <p>PSO5: Professional Ethics & Integrity: Uphold the standards of academic honesty, particularly in data representation and the citation of secondary sources in project reports.</p>
GEOG363	Urban Geography	<p>CO1: Comprehend Urban Foundations: Define the scope of Urban Geography and evaluate the diverse historical and contemporary approaches to studying urban spaces and the process of urbanisation.</p> <p>CO2: Analyse Urban Hierarchies: Critically examine the laws of urban</p>

		<p>distribution through the Primate City Concept and the Rank-Size Rule, and assess how cities organise themselves in a regional hierarchy.</p> <p>CO3: Evaluate City Regions: Understand the concept of the City Region and apply various qualitative and quantitative methods for its delimitation.</p> <p>CO4: Classify Urban Functions: Identify and classify urban settlements based on their primary economic activities and functional specialisations.</p> <p>CO5: Critique Land Use Models: Compare and contrast classical models of urban morphology, specifically the Concentric Zone, Sector, and Multiple Nuclei theories.</p> <p>CO6: Apply Central Place Theory: Analyse the spatial distribution of settlements and their service areas using Christaller's Central Place Theory.</p> <p>CO7: Assess Urban Crisis & Management: Identify the socio-environmental challenges of modern cities, including housing shortages, transportation bottlenecks, urban poverty, and environmental degradation.</p>
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		<p>PSO1: Urban Analytical Proficiency: Develop the ability to interpret the spatial logic of cities, enabling the student to contribute to urban design, real estate analysis, and municipal administration.</p> <p>PSO2: Planning & Policy Expertise: Acquire the knowledge to evaluate urban development policies and suggest data-driven solutions for managing urban sprawl and slum redevelopment.</p> <p>PSO3: Theoretical Application: Gain the skill to apply classical geographers' models (like Burgess or Hoyt) to contemporary cities to identify patterns of gentrification, segregation, or industrial shift.</p> <p>PSO4: Sustainable Urbanism Advocacy: Apply an understanding of urban environmental problems to promote "Green City" concepts and sustainable transportation networks.</p> <p>PSO5: Demographic & Functional Mapping: Utilise functional classification techniques to assist in regional economic planning and identifying "growth poles" in a developing landscape.</p>
<p>Programme Outcomes (PO)</p>		<p>PO1: Foundational Geographic Knowledge: Acquire a comprehensive understanding of the Earth's physical systems (Geomorphology, Climatology, Oceanography) and human systems (Population, Settlement, Economic), and the complex interactions between them.</p> <p>PO2: Mastery of Geospatial Technology: Demonstrate technical proficiency in</p>

	<p>modern cartography, Remote Sensing, and GIS software to acquire, analyse, and visualise spatial data for real-world applications.</p> <p>PO3: Analytical and Quantitative Competence: Develop the ability to apply statistical methods, research methodologies, and locational theories to interpret geographical patterns and predict future spatial trends.</p> <p>PO4: Fieldwork and Surveying Skills: Gain practical expertise in ground-level surveying (Plane Table, Prismatic Compass) and empirical field research to collect primary data and observe geographical phenomena in situ.</p> <p>PO5: Environmental Stewardship and Sustainability: Evaluate the impact of human activities on the environment (Climate Change, Biodiversity loss, Jhum cultivation) and propose sustainable management strategies for natural resources.</p> <p>PO6: Regional and National Awareness: Develop deep insights into the geography of India and the specific regional geography of Mizoram, understanding their unique physiographic, socio-cultural, and economic challenges.</p> <p>PO7: Critical Thinking and Philosophical Depth: Understand the evolution of geographical thought and paradigms, enabling the critique of different perspectives on space, place, and human-</p>
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	<p>environment relationships.</p> <p>PO8: Communication and Professional Ethics: Effectively communicate scientific and social findings through structured project reports and oral presentations, while maintaining strict academic integrity and citation ethics.</p> <p>PO9: Urban and Agrarian Planning: Apply theoretical models (Central Place Theory, Von Thünen, Urban Land Use models) to address contemporary issues in urban sprawl, housing, and agricultural development.</p>
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DEPARTMENT OF HISTORY		
Course Code	Course Name	Course Outcomes (CO); Programme Outcomes (PO); Programme Specific Outcomes (PSO)

<p>HIST100</p>	<p>History of India from Post- Maurya to Gupta period</p>	<p>CO1. Analyse the political and economic developments in the post-Mauryan period, including foreign invasions, the rise of the Satavahana dynasty and Kushan Empire, and the growth of trade, crafts, and guilds.</p> <p>CO2. Examine cultural developments in the post-Mauryan period, including art, architecture, sculpture, and the society and literature of the Sangam Age.</p> <p>CO3. Evaluate the political structure and administration of the Gupta Empire, including decentralization and features of Gupta society such as jatidharma, status of women, and untouchability.</p> <p>CO4. Assess the economic and cultural developments under the Guptas, including land grants, agrarian structure, trade, coinage, and the growth of religion, literature, art, and Puranic traditions.</p> <hr/> <p>PO. Develop critical thinking to understand historical change and continuity, gain knowledge of ancient Indian history and society, interpret diverse perspectives, and enhance communication, writing, and research skills.</p> <hr/> <p>PSO1. Gain specialized knowledge of post-Mauryan and Gupta period developments in India.</p> <p>PSO2. Analyse the transformation of political structures from centralized to decentralized systems.</p> <p>PSO3. Understand the evolution of socio-economic institutions such as guilds, land grants, and caste structure.</p> <p>PSO4. Evaluate the cultural and religious developments, including art, literature, and Puranic traditions, in shaping classical Indian civilization.</p>
<p>HIST101</p>	<p>History of India up to Maurya Period</p>	<p>CO1. Understand the sources of early Indian history and analyse the origin, growth, and decline of the Indus Valley Civilization, including its socio-economic, political, and cultural features.</p> <p>CO2. Examine the Vedic period, including debates on Aryan origins, and evaluate the development of society, economy, polity,</p>

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		<p>religion, and the philosophical ideas of the Upanishads.</p> <p>CO3. Analyse the transition to the post-Vedic period with the rise of Janapadas and Mahajanapadas, the ascendancy of Magadha, and the emergence of heterodox sects such as Buddhism and Jainism.</p> <p>CO4. Assess the emergence, administration, economy, art, and decline of the Mauryan Empire, including the significance of Ashoka's Dhamma.</p> <hr/> <p>PO. Develop critical thinking to understand early historical change and continuity, gain knowledge of ancient Indian socio-economic, political, and cultural developments, interpret historical sources, and enhance communication, writing, and research skills.</p> <hr/> <p>PSO1. Gain in-depth knowledge of early Indian history from the Chalcolithic phase to the Mauryan period.</p> <p>PSO2. Analyse the evolution of socio-economic structures, political institutions, and religious ideas in ancient India.</p> <p>PSO3. Understand processes of urbanization, state formation, and imperial expansion in early India.</p> <p>PSO4. Evaluate the Mauryan Empire as a model of early governance and its long-term historical significance.</p>
<p>HIST110</p>	<p>Cultural Practices of Mizoram (MDC)</p>	<p>CO1. Understand the geographical, historical, and social background of Mizoram and analyse traditional village life, family structure, material culture, cuisine, and the status of women.</p> <p>CO2. Examine major festivals such as Chapchar Kut, Mim Kut, and Pawl Kut, along with traditional dances like Cheraw and Khuallam, and analyse their role in shaping cultural identity.</p> <p>CO3. Evaluate traditional belief systems, including supernatural concepts, sacrifices, priesthood (Sadawt, Bawlpu), marriage, judicial practices, and funerary customs in Mizo society.</p> <hr/> <p>PO. Develop understanding of cultural</p>

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		<p>diversity and heritage in Mizoram, interpret cultural practices in their historical context, and promote appreciation of indigenous traditions in contemporary society.</p> <p>PSO1. Gain specialized knowledge of the cultural practices, traditions, and customs of Mizoram.</p> <p>PSO2. Analyse the role of festivals, music, belief systems, and social institutions in shaping Mizo cultural identity.</p> <p>PSO3. Apply cultural understanding to preserve and promote the heritage of Mizoram in modern contexts.</p>
<p>HIST160</p>	<p align="center">History of India: Regional Kingdoms and the Sultanate Period</p>	<p>CO1. Analyse the political developments in post-Gupta India, including the reign of Harshavardhana, the Tripartite Struggle, and regional powers such as Bhaskaravarman, along with accounts of Xuanzang.</p> <p>CO2. Examine the rise of regional kingdoms in South India, including the Pallava dynasty and Chola dynasty, and analyse the socio-economic and political role of temples.</p> <p>CO3. Evaluate the rise and spread of Islam in India, including the Arab conquest of Sind, the Ghaznavid Empire and Ghurid invasions, and the establishment and administration of the Delhi Sultanate.</p> <p>CO4. Assess the developments of supra-regional kingdoms such as the Vijayanagara Empire and Bahmani Sultanate, along with the impact of Bhakti and Sufi movements and the arrival of the Portuguese Empire in India.</p> <p>PO. Develop critical thinking to understand medieval Indian transformations, gain knowledge of political, social, economic, and cultural developments, interpret historical sources, and enhance communication, research, and writing skills.</p>

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		<p>PSO1. Gain in-depth knowledge of regional kingdoms and the Delhi Sultanate in medieval India.</p> <p>PSO2. Analyse the interaction between political power, religion, and society during this period.</p> <p>PSO3. Understand the role of institutions such as temples and administrative systems in shaping regional economies and governance.</p> <p>PSO4. Evaluate the cultural synthesis resulting from Bhakti, Sufi traditions, and early European contact.</p>
<p>HIST161</p>	<p style="text-align: center;">History of Mizoram up to 1986</p>	<p>CO1. Understand the origins, migration, myths, and legends of the Mizos through oral and written sources, and analyse the socio-economic and political structure of traditional Mizo society, including chieftainship and Zawlbuk.</p> <p>CO2. Examine the Mizo encounter with the British, including raids, resistance, and the establishment of colonial rule, along with administrative transformations.</p> <p>CO3. Evaluate the introduction and spread of Christianity in Mizoram, including missionary activities, educational and medical contributions, revival movements, and their impact on social transformation.</p> <p>CO4. Analyse the growth of political consciousness, formation of political organisations, the role of regional councils, and the emergence of the Mizo National Front movement leading to the Mizoram Peace Accord.</p> <p>PO. Develop critical thinking to understand historical change and continuity, gain knowledge of regional history with special reference to Mizoram and Northeast India, interpret diverse sources, and enhance communication, research, and writing skills.</p>

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		<p>PSO1. Gain in-depth knowledge of the history of Mizoram from traditional society to the Peace Accord of 1986.</p> <p>PSO2. Analyse the impact of colonialism and missionary activities on Mizo society and institutions.</p> <p>PSO3. Understand the evolution of political movements, governance, and identity in Mizoram.</p> <p>PSO4. Apply historical knowledge to interpret contemporary socio-political developments in Mizoram and the Northeast.</p>
<p>HIST200</p>	<p>The Mughals and early Modern India</p>	<p>CO1. Understand the emergence of early modern India, including the political conditions before the Mughals and the foundation of the Mughal Empire under Babur.</p> <p>CO2. Analyse the consolidation and expansion of the Mughal Empire under Akbar, including administrative structure, religious policies, and governance.</p> <p>CO3. Evaluate the social, cultural, and intellectual developments of the Mughal period, including art, architecture, literature, science, and the role of religion.</p> <p>CO4. Assess the causes of the decline of the Mughal Empire, the rise of regional powers such as the Marathas and Sikhs, and the broader context of early modern India including trade and warfare.</p> <hr/> <p>PO. Develop critical thinking to understand early modern transformations, gain knowledge of political, social, economic, and cultural developments in early modern India, interpret diverse historical sources, and enhance communication, research, and writing skills.</p>

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		<p>PSO1. Gain in-depth knowledge of the Mughal Empire and its role in shaping early modern India.</p> <p>PSO2. Analyse the interaction between political authority, religion, and culture during the Mughal period.</p> <p>PSO3. Understand the causes and consequences of the decline of the Mughal Empire and the rise of regional powers.</p> <p>PSO4. Evaluate the economic and cultural exchanges of early modern India, including trade networks and their long-term impact.</p>
HIST201	Greece and Rome	<p>CO1. Understand the major periods of Greek history—Archaic, Classical, and Hellenistic—and analyse Greek political thought through thinkers like Plato and Aristotle.</p> <p>CO2. Examine the structure of Greek polis such as Athens and Sparta, and evaluate major wars including the Persian and Peloponnesian Wars.</p> <p>CO3. Analyse the growth of Roman civilization from the Etruscans to the Roman Republic, including the Punic Wars and contributions of writers like Cicero and Virgil.</p> <p>CO4. Assess the transformation of the Roman Republic into the Empire, its socio-political developments, crises, and the rise of Christianity.</p> <hr/> <p>PO. Develop critical thinking to understand ancient historical processes, gain knowledge of classical civilizations and their developments, interpret diverse historical sources, and enhance communication, writing, and research skills.</p> <hr/> <p>PSO1. Gain in-depth knowledge of classical civilizations of Greece and Rome and their historical developments.</p> <p>PSO2. Analyse the political, social, and cultural institutions of ancient Mediterranean societies.</p> <p>PSO3. Understand the intellectual</p>

		<p>traditions, including philosophy, literature, and science, of Greece and Rome.</p> <p>PSO4. Evaluate the legacy of Greek and Roman civilizations in shaping modern political thought, culture, and institutions.</p>
<p>HIST260</p>	<p>Medieval Europe</p>	<p>CO1. Understand the transition from the Roman world to the early Middle Ages, including the decline of the Western Roman Empire, barbarian migrations, and the formation of early kingdoms.</p> <p>CO2. Analyse the rise and role of major religions such as Christianity and Islam, including church organisation, monasticism, and the relationship between Church and State.</p> <p>CO3. Examine the socio-economic and political structures of medieval Europe, including feudalism, agrarian expansion, trade, and the development of kingdoms and institutions.</p> <p>CO4. Evaluate the major developments of the later Middle Ages, including the Crusades, urbanisation, economic transformation, crises like the Black Death, and the transition toward the Renaissance.</p>
		<p>PO. Develop critical thinking to understand change and continuity in medieval Europe, gain knowledge of its political, social, economic, and cultural developments, interpret historical sources, and enhance communication, writing, and research skills.</p>
		<p>PSO1. Gain in-depth knowledge of the transformation of Europe from the fall of the Roman Empire to the late Middle Ages.</p> <p>PSO2. Analyse the interaction between religion, politics, and society in shaping medieval European institutions.</p> <p>PSO3. Understand the development of feudalism, economic systems, and urbanisation in medieval Europe.</p> <p>PSO4. Evaluate the causes and consequences of major medieval crises and their role in shaping early modern Europe.</p>

<p>HIST261</p>	<p>Modern Indian History I</p>	<p>CO1. Understand the advent of European powers in India, including the Portuguese, Dutch, French, and English, and analyse their commercial and political expansion.</p> <p>CO2. Examine the Anglo-French rivalry, the Carnatic Wars, and the rise of regional powers such as Hyderabad, leading to the consolidation of British power under the British East India Company.</p> <p>CO3. Analyse the expansion and administrative policies of the Company, including the Subsidiary Alliance and Doctrine of Lapse, along with key legislative measures such as the Regulating Act and Charter Acts.</p> <p>CO4. Evaluate the causes, nature, failure, and consequences of the Revolt of 1857 in shaping modern Indian history.</p> <p>PO. Develop critical thinking to understand historical transformations in modern India, gain knowledge of political, economic, and administrative developments under early British rule, interpret events from multiple perspectives, and enhance communication, writing, and research skills.</p> <p>PSO1. Gain in-depth knowledge of early modern and colonial developments in India up to 1857.</p> <p>PSO2. Analyse the impact of European expansion and British policies on Indian society and economy.</p> <p>PSO3. Understand the nature of colonial administration and its long-term implications.</p> <p>PSO4. Evaluate the significance of the Revolt of 1857 as a major turning point in Indian history.</p>
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<p>HIST300</p>	<p>Early Modern Europe</p>	<p>CO1. Analyse the expansion of European trade and empire (1300–1600), including Mediterranean commerce, the rise of the Ottoman Empire, and overseas exploration by Portugal and Spain leading to global connections.</p> <p>CO2. Examine the intellectual and cultural transformations of the Renaissance and the religious changes brought by the Protestant Reformation, including Lutheranism, the English Reformation, and Catholic reforms.</p> <p>CO3. Evaluate the political and religious conflicts of early modern Europe, including the Thirty Years’ War, English Civil War, and the emergence of balance of power among European states.</p> <p>CO4. Assess the development of absolutism and empire, particularly under rulers like Louis XIV, and analyse the causes, course, and consequences of the French Revolution.</p>
		<p>PO. Develop critical thinking to understand major transformations in early modern Europe, gain knowledge of its political, economic, religious, and cultural developments, interpret events using diverse perspectives, and enhance communication, writing, and research skills.</p>
		<p>PSO1. Gain in-depth knowledge of the emergence of Europe as a global power through trade, exploration, and colonization.</p> <p>PSO2. Analyse the impact of Renaissance humanism and religious reforms on European society and institutions.</p> <p>PSO3. Understand the development of modern state systems, absolutism, and political conflicts in early modern Europe.</p> <p>PSO4. Evaluate the significance of the French Revolution and its role in shaping modern political and social thought.</p>

<p>HIST301</p>	<p>Freedom Movement in India 1857-1947</p>	<p>CO1. Analyse the factors leading to the rise of nationalism in India, including the impact of colonial policies and the significance of the Revolt of 1857.</p> <p>CO2. Examine the growth of political consciousness through the formation of the Indian National Congress, the role of Moderates and Extremists, and movements such as Swadeshi and Home Rule.</p> <p>CO3. Evaluate diverse strands of the national movement, including Gandhian mass movements, revolutionary activities, leftist movements, and the emergence of communal politics.</p> <p>CO4. Assess the final phase of the freedom struggle, including constitutional developments, the role of the Indian National Army, negotiations for independence, and the attainment of independence in 1947.</p> <p>PO. Develop critical thinking to understand anti-colonial movements and nationalist ideologies, gain knowledge of modern India's political, social, and constitutional developments, interpret events from multiple perspectives, and enhance communication, research, and writing skills.</p> <p>PSO1. Gain in-depth knowledge of the growth and development of Indian nationalism from 1857 to 1947.</p> <p>PSO2. Analyse the role of various leaders, ideologies, and movements in shaping the freedom struggle.</p> <p>PSO3. Understand the impact of colonial policies and constitutional changes on Indian society and politics.</p> <p>PSO4. Evaluate the processes leading to independence, partition, and the formation of the Indian nation-state.</p>
<p>HIST302</p>	<p>Modern Indian History II</p>	<p>CO1. Analyse the transformation of rural economy and society in 19th–20th century India, including land revenue systems, commercialization of agriculture, and</p>

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		<p>issues of peasants, labourers, and indebtedness.</p> <p>CO2. Examine the changes in trade, banking, and industry, including the decline of traditional centres and the emergence of modern industries such as cotton, jute, tea, and steel.</p> <p>CO3. Evaluate the impact of colonial reforms under administrators like Lord William Bentinck, Lord Dalhousie, and Lord Cornwallis, along with the role of modern education, press, and intelligentsia.</p> <p>CO4. Assess the significance of socio-religious reform movements such as Brahma Samaj, Arya Samaj, Ramakrishna Mission, and the Aligarh Movement in shaping modern Indian society, including women's emancipation.</p> <hr/> <p>PO. Develop critical thinking to understand socio-economic and cultural transformations in modern India, gain knowledge of economic, social, and reform movements in colonial India, interpret developments from multiple perspectives, and enhance communication, research, and writing skills.</p> <hr/> <p>PSO1. Gain in-depth knowledge of socio-economic and cultural changes in India during the 19th and 20th centuries.</p> <p>PSO2. Analyse the impact of colonial policies on agriculture, trade, industry, and society.</p> <p>PSO3. Understand the role of reform movements, education, and press in shaping modern Indian consciousness.</p> <p>PSO4. Evaluate the processes of modernization and social reform, including the position of women and marginalized groups.</p>
HIST360	History, People, and Cultures of Northeast India	CO1. Understand the historical formation of India's Northeast region, including early geography, colonial expansion, British frontier policies, and the creation of a landlocked region.

		<p>CO2. Analyse the socio-political developments of the region within independent India, including the reorganisation of states, internal contradictions, and geopolitical significance.</p> <p>CO3. Examine the diversity of peoples in Northeast India, including the role of groups like the Ahoms, racial elements, linguistic diversity, and socio-cultural characteristics.</p> <p>CO4. Evaluate contemporary issues such as migration, insurgency, inter-state conflicts, and constitutional provisions like the Sixth Schedule, along with cultural practices like food, dance, and missionary influences.</p> <p>PO. Develop critical thinking to understand regional histories and complexities, gain knowledge of the historical, cultural, and political dynamics of Northeast India, interpret diverse sources, and enhance communication, research, and writing skills.</p> <p>PSO1. Gain in-depth knowledge of the history, people, and cultures of Northeast India from colonial to contemporary times.</p> <p>PSO2. Analyse the impact of colonial policies and post-independence developments on the region's identity and structure.</p> <p>PSO3. Understand the diversity of ethnic groups, languages, and cultural practices in Northeast India.</p> <p>PSO4. Evaluate contemporary challenges such as migration, insurgency, and regional integration within the Indian nation-state.</p>
<p>HIST361</p>	<p>Modern World History</p>	<p>CO1. Understand the major political and ideological developments of 19th-century Europe, including the rise and fall of Napoleon Bonaparte, the Congress of Vienna, and the unification of Italy and Germany.</p> <p>CO2. Analyse the economic and social transformations brought by the Industrial Revolution, along with the growth of</p>

		<p>imperialism, colonial expansion in Asia, and the Scramble for Africa.</p> <p>CO3. Examine the causes and consequences of the World War I, the Russian Revolution of 1917, and the rise of ideologies such as Fascism and Nazism in the interwar period.</p> <p>CO4. Evaluate the global crisis of the interwar years, including the Great Depression, the causes and consequences of World War II, and the establishment of the United Nations.</p> <p>PO. Develop critical thinking to understand global historical processes, gain knowledge of modern political, economic, and social developments, interpret events and ideologies from multiple perspectives, and enhance communication, research, and writing skills.</p> <p>PSO1. Gain in-depth knowledge of major global events and transformations from the 19th century to World War II.</p> <p>PSO2. Analyse the impact of industrialization, imperialism, and nationalism on world history.</p> <p>PSO3. Understand the causes and consequences of global conflicts and ideological movements.</p> <p>PSO4. Evaluate the formation of international institutions and their role in shaping the modern world order.</p>
<p>HIST362</p>	<p>Contemporary World History</p>	<p>CO1. Analyse the origins, phases, and impact of the Cold War, including key events such as the Cuban Missile Crisis, détente, and post-war economic recovery in Europe.</p> <p>CO2. Examine the processes of decolonization and political transformations in Asia and Africa, including events like the Chinese Revolution, Korean War, Vietnam War, and the Arab-Israeli conflict.</p> <p>CO3. Evaluate the rise of the Third World, non-alignment (including India's role), economic development, and the emergence of new economic powers in East Asia,</p>

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		<p>along with Cold War dynamics in different regions.</p> <p>CO4. Assess the end of the Cold War, including the fall of the Soviet Union and the Fall of the Berlin Wall, and analyse contemporary developments such as globalization, social movements, and conflicts in the 21st century.</p> <hr/> <p>PO. Develop critical thinking to understand contemporary global history, gain knowledge of post-World War II political, economic, social, and cultural developments, interpret global events from multiple perspectives, and enhance communication, research, and writing skills.</p> <hr/> <p>PSO1. Gain in-depth knowledge of major global transformations from the end of World War II to the present.</p> <p>PSO2. Analyse the impact of Cold War politics, decolonization, and globalization on world history.</p> <p>PSO3. Understand the role of social movements, cultural changes, and economic developments in shaping contemporary societies.</p> <p>PSO4. Evaluate current global challenges such as conflict, inequality, and terrorism in a historical perspective.</p>
<p>HIST363</p>	<p>History of Modern China</p>	<p>CO1. Understand the decline of imperial China, including the fall of the Qing dynasty, major uprisings such as the Boxer Rebellion, and the establishment of the Republic of China.</p> <p>CO2. Analyse the role of leaders like Sun Yat-sen and Chiang Kai-shek, and evaluate political developments such as the Northern Expedition and nationalist movements.</p> <p>CO3. Examine the Chinese Communist Revolution, including the leadership of Mao Zedong, the Long March, and the establishment of the People's Republic of China, along with campaigns like the Great Leap Forward and Cultural Revolution.</p> <p>CO4. Assess China's transformation under</p>

		<p>Deng Xiaoping, including economic reforms, the Tiananmen Square protests, and China's emergence as a global power in the 21st century.</p>
		<p>PO. Develop critical thinking to understand modern global historical processes, gain knowledge of political, social, and economic developments in modern China, interpret historical events and ideologies in a global context, and enhance communication, research, and writing skills.</p>
		<p>PSO1. Gain in-depth knowledge of major political transformations in modern China from the Qing decline to the present. PSO2. Analyse the role of nationalism, communism, and leadership in shaping modern Chinese history. PSO3. Understand the socio-economic impact of reforms, revolutions, and state policies in China. PSO4. Evaluate China's emergence as a global power and its role in contemporary world politics.</p>

MATHEMATICS DEPARTMENT

Course No.	Name of the Paper	Course Outcome
Upon successful completion of this course, the students will be able to:		
1st Semester		
MAT/1/MJ/100	Vector Analysis	<p>CO1: Apply differentiation formulas to vector functions and interpret the results geometrically to determine the curvature of space curves and motion of particles.</p> <p>CO2: Compute and physically interpret the gradient, divergence, and curl of scalar and vector fields, and identify specific field properties such as solenoidal and irrotational nature.</p> <p>CO3: Calculate line, surface, and volume integrals, understanding their physical significance in contexts like work done, flux, and mass distribution.</p> <p>CO4: Apply Green's Theorem, Gauss Divergence Theorem, and Stoke's Theorem to solve problems in vector calculus and related physical applications.</p>
MAT/1/MJ/101*	Calculus	<p>CO1: Sketch graphs in Cartesian coordinates, calculate limits, and examine continuity.</p> <p>CO2: Understand and apply Rolle's theorem and Mean value theorem. Master Taylor's and Maclaurin's expansions for series representations of functions.</p> <p>CO3: Comprehend the Fundamental Theorem of Integral Calculus. Evaluate definite integrals using their properties and apply reduction formulae for standard integrals.</p>

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		CO4: Understand limits, continuity, and partial derivatives for functions of two or more variables. Apply Euler's theorem on homogeneous functions and grasp the concepts of convergence in sequences and series.
MAT/1/MD/103	Quantitative Aptitude	CO1: Understand mathematical concepts with an emphasis on analytical ability and computational skills required for competitive examinations. CO2: Explain and apply equations, formulas, mathematical expressions, and relationships across various contexts. CO3: Handle data collection and analyse data representation through graph interpretation and analysis.
2nd Semester		
MAT/2/MJ/150	Elementary Number Theory	CO1: Grasp the fundamental properties of integers and the Fundamental Theorem of Arithmetic. CO2: Comprehend congruences in the set of integers, including Euler's function, Fermat's theorem, Wilson's theorem, Lagrange's theorem, and their practical applications. CO3: Gain knowledge of Legendre's symbol, linear congruences, the Chinese Remainder Theorem, congruences of higher degree modulo, and Gauss's Lemma. CO4: Understand Fibonacci numbers and their properties, various arithmetic functions, and the use of the Möbius Inversion

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		formula for solving equations.
MAT/2/MJ/151*	Algebra	<p>CO1: Understand properties of polynomials over integer, rational, real, and complex fields, including their irreducibility.</p> <p>CO2: Analyse roots of real and complex polynomials and learn various methods for obtaining them.</p> <p>CO3: Apply De Moivre's theorem to solve a variety of numerical problems.</p> <p>CO4: Solve higher-degree equations, specifically cubic and biquadratic equations, using Cardan's method.</p>
3rd Semester		
MAT/3/MJ/200	Modern Algebra-I	<p>CO1: Learn about the fundamental concepts of binary operations, groups, and their unique features.</p> <p>CO2: Understand the properties of subgroups, order of a group, Lagrange's theorem, and its application.</p> <p>CO3: Learn various groups and their properties, including Abelian groups, dihedral groups, quaternion group, and general/special linear groups.</p> <p>CO4: Grasp the concept of cyclic groups, permutation groups, and their properties, alongside applications of Fermat's theorem.</p>
MAT/3/MJ/201*	Differential Equation	<p>CO1: Understand the genesis of ordinary differential equations.</p> <p>CO2: Apply various techniques to find exact solutions for solvable first-order differential equations and higher-order linear differential equations.</p>

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		<p>CO3: Grasp the concept of a general solution for linear differential equations of arbitrary order and master methods to obtain them.</p> <p>CO4: Understand partial differential equations (PDEs) and apply a range of techniques to solve first and second-order PDEs.</p>
4th Semester		
MAT/4/MJ/250	Real Analysis	<p>CO1: Grasp the basic properties of open, closed, and compact sets within Euclidean spaces, including the application of the Heine-Borel and Bolzano-Weierstrass theorems.</p> <p>CO2: Transition conceptual understanding from single-variable calculus to functions of several variables, focusing on</p>
		<p>continuity and limit properties.</p> <p>CO3: Relate partial derivatives to directional derivatives and understand the conditions for differentiability, Jacobians, and the Mean Value Theorem in higher dimensions.</p> <p>CO4: Apply advanced theorems (Schwarz's, Young's, and Taylor's) to determine and classify extreme values for functions of two variables.</p>

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MAT/4/MJ/251*	Numerical Analysis-I	<p>CO1. Use difference operators and obtain numerical solutions for algebraic and transcendental equations.</p> <p>CO2. Master various interpolation and extrapolation methods.</p> <p>CO3. Solve systems of linear equations numerically and verify the accuracy of those solutions.</p> <p>CO4. Solve initial and boundary value problems in differential equations using specific numerical methods.</p>
5th Semester		
MAT/5/MJ/300	Advanced Calculus	<p>CO1: Learn about Riemann integrability of bounded functions and the algebra of R-integrable functions.</p> <p>CO2: Apply various techniques to identify the convergence of improper integrals and their conditions of absolute and conditional convergence.</p> <p>CO3: Evaluate line integrals and double integrals, and realize the interrelationship between repeated and double integrals.</p> <p>CO4: Relate concepts of pointwise and uniform convergence of sequences and series.</p>
MAT/5/MJ/301	Analytical Geometry	<p>CO1: Learn and visualize coordinate geometry concepts to identify central and non-central conics and their properties.</p> <p>CO2: Understand and find relations between Cartesian, polar, cylindrical, and spherical coordinate systems.</p> <p>CO3: Visualize fundamental coordinate geometry ideas and learn to describe various surfaces using analytical geometry.</p>

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		CO4: Gain comprehensive knowledge about regular geometrical figures and their specific properties.
MAT/5/MJ/302*	Computer Programming in C	<p>CO1: Gain a solid grasp of C fundamentals, program structure, and the process of compiling and running programs</p> <p>CO2: Develop proficiency in input/output functions, decision-making constructs, various looping and jumping mechanisms, and function calls.</p> <p>CO3: Acquire knowledge of storage classes, arrays (including multidimensional), strings and their functions, pointers, structures, and unions.</p> <p>CO4: Practical Application: Build the practical skills necessary to develop and execute functional C programs.</p>
6th Semester		
MAT/6/MJ/350	Mechanics	<p>CO1: Understand the equilibrium of particles and rigid bodies. Master the reduction and equilibrium of coplanar forces.</p> <p>CO2: Determine the physical properties of materialistic systems. Calculate the centre of gravity for various shapes: thin rods, uniform laminas (triangular, rectangular), circular arcs, and sectors.</p> <p>CO3: Master the kinematics and kinetics of particle motion. Analyse velocity and acceleration across different coordinate systems. Study relative motion and rectilinear motion with constant acceleration.</p> <p>CO4: Analyse complex dynamics and energy conservation. Solve for projectile motion, including range on inclined planes and passing through specific points.</p>

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MAT/6/MJ/351	Complex Analysis	<p>CO1: Understand the polar and geometrical representation of complex numbers, the convergence of power series, and term-by-term integration and differentiation.</p> <p>CO2: Understand the significance of differentiability and analyticity of complex functions leading to the Cauchy-Riemann equations.</p> <p>CO3: Relate the concept of line integrals, Green's theorem, and the Cauchy integral formula.</p> <p>CO4: Learn Taylor and Laurent series expansions of analytic functions, and classify the nature of singularities, poles, and residues using the application of Cauchy's Residue theorem.</p>
MAT/6/MJ/352	Modern Algebra-II	<p>CO1: Understand Key Group Concepts: Gain knowledge of Normal subgroups, the Centre of a group, Quotient groups, and their examples.</p> <p>CO2: Master Group & Ring Theorems: Understand theorems related to group homomorphisms, isomorphisms, and automorphisms, alongside basic properties of Rings and Finite integral domains.</p> <p>CO3: Develop knowledge regarding various types of ideals, quotient rings, and fields.</p> <p>CO4: Advanced Algebraic Analysis: Understand ring homomorphisms, kernels, and isomorphisms. Differentiating between units, associates, prime elements, and irreducible elements. Studying GCD, Euclidean domains, and Principal Ideal Domains</p>

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MAT/6/MJ/353*	FORTRAN Programming	<p>CO1: foundational understanding of algorithms, flowcharts, Euclid's algorithm for GCD, and the fundamentals of FORTRAN, including input/output statements</p> <p>CO2: Understand the use of unconditional GO TO statements, branching, loops, and the nesting of loops.</p> <p>CO3: Develop knowledge of arrays (input, output, and storage order), implied DO notation, and subprograms.</p> <p>CO4: Develop the technical skills required to write, develop, and run FORTRAN programs.</p>
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** indicates that Minor Courses is also offered for other subjects*

PROGRAM OUTCOMES (POs)
At the end of the program, the student will have/be able to:
<ol style="list-style-type: none"> 1. Apply fundamental and advanced concepts of calculus and vector analysis—including differentiation, integration, and field theory—to model, analyse, and solve real-world engineering and physical problems, while interpreting results graphically and physically. 2. Apply fundamental concepts of number theory, algebra, and complex analysis to analyse and solve mathematical problems using logical reasoning, appropriate theorems, and effective problem-solving techniques. 3. Develop the ability to apply fundamental concepts of algebra and differential equations to analyse, model, and solve mathematical problems in theoretical and applied contexts. 4. Analyse and solve complex mathematical problems by applying concepts from multivariable calculus and numerical methods with accuracy and logical reasoning. 5. Integrate mathematical analysis, geometry, and programming skills to model, analyse, and solve complex problems with logical reasoning and computational efficiency. 6. Develop the ability to apply concepts from mechanics, complex analysis, abstract algebra, and programming to analyse, model, and solve multidisciplinary mathematical and computational problems.

PROGRAM SPECIFIC OUTCOMES (PSOs)

At the end of the program, the student will have/be able to:

1. Apply advanced calculus concepts—including vector differentiation, multivariable analysis, and integral techniques—to model, analyse, and solve real-world engineering and scientific problems involving motion, fields, and physical systems.
2. Solve congruences, analyse arithmetic functions, and determine roots of polynomials (real and complex) using theorems such as Euler's, Fermat's, Chinese Remainder Theorem, and De Moivre's theorem.
3. Demonstrate proficiency in group theory and differential equations by solving problems involving algebraic structures and applying analytical techniques to ordinary and partial differential equations.
4. Analyse proficiency in multivariable analysis and numerical techniques by applying advanced theorems and computational methods to solve real-world problems involving functions of several variables and differential equations.
5. Demonstrate logically in integral calculus, coordinate geometry, and C programming by applying analytical and computational techniques to solve mathematical problems and develop functional programs.
6. Solve and demonstrate algebraic structures, complex functions, mechanics, and FORTRAN programming by integrating theoretical knowledge with computational skills to solve advanced mathematical and real-world problems.

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DEPARTMENT OF MIZO		
Course Code	Course Name	Course/Program Specific Outcome
MIZ/100	Mizo Folk Song	<p>CO1. Students will be able to learn the importance and significance of early Mizo folk songs as the backbone of Mizo poetry.</p> <p>CO2. Students will develop appreciation for Mizo culture and traditions of the oral period that are almost abandoned in modern society.</p> <p>CO3. Students will use Mizo folk songs as an important way to understand and appreciate the past history and literature of the Mizo people.</p> <p>PSO1. Students will identify, classify, and analyze major types of Mizo folk songs and explain their social, cultural, and ritual contexts.</p> <p>PSO2. Students will apply knowledge of Mizo oral traditions to preserve, document, and promote folk songs, bridging the gap between the oral heritage of the past and modern Mizo society.</p> <p>PSO3. Students will critically interpret themes, poetic devices, and historical references in early Mizo songs to evaluate their role as the foundation of Mizo</p>

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		poetry and literature.
MIZ/101	Mizo Thu leh Hla Chanchin	<p>CO1. Students will be able to trace the different eras of Mizo literature and explain how each period shaped literary expression.</p> <p>CO2. Students will identify and describe the main forms of Mizo literature - Hla (Poetry), Thutluang (Prose), Lemchan (Drama), Thawnthu (Fiction/Stories) with their key features.</p> <p>CO3. Students will gain a comprehensive overview of Mizo literature that builds better understanding and critical knowledge of different genres for further study.</p> <p>PSO1. Students will demonstrate a structured understanding of the historical phases of Mizo literature and explain how _Hla, Thutluang, Lemchan,_ and _Thawnthu_ evolved within each era.</p> <p>PSO2. Students will critically analyze texts from different genres of Mizo literature, identifying themes, literary techniques, and narrative styles to evaluate their cultural and historical value.</p> <p>PSO3. Students will apply knowledge of Mizo literary history to conduct independent research, connect literary works to Mizo society, and communicate insights in academic and cultural contexts.</p>

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MIZ/110	Mizo Thu leh Hla	<p>CO1. Students will demonstrate a thorough understanding of Mizo literature, including its historical and cultural context, as covered in texts.</p> <p>CO2. Students will critically analyse key themes, literary techniques, and narrative styles.</p> <p>CO3. Students will develop deeper appreciation and critical engagement with Mizo literature, enabling them to explore and value the richness of Mizo literary tradition.</p> <p>PSO1. Students will interpret and explain major Mizo Hla and Thutluang within their historical and cultural contexts.</p> <p>PSO2. Students will relate Mizo literature to explain how literary texts reflect values, beliefs, and social practices of the Mizo people.</p> <p>PSO3. Students will critically evaluate themes, literary styles, and techniques in prescribed texts and communicate their appreciation of Mizo literary tradition effectively in academic and community settings.</p>
MIZ/150	Mizo Tawng Kamkeuna (Introduction to Mizo Language)	<p>CO1. Students will gain in-depth knowledge and understanding of the growth and development of Mizo language.</p> <p>CO2. Students will obtain the basic knowledge of Mizo language and develop essential language skills for reading, writing, and comprehension.</p>

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		<p>CO3. Students will be able to explain the origin, influences, and evolution of Mizo language from early forms to present usage.</p> <p>PSO1. Students will demonstrate foundational knowledge of the origin, structure, and historical development of Mizo language.</p> <p>PSO2. Students will apply basic skills in Mizo language for effective reading, writing, and communication in academic and everyday contexts.</p> <p>PSO3. Students will explain the relationship between Mizo language and Mizo cultural identity, and contribute to the preservation and promotion of Mizo language in society.</p>
MIZ/160	Poetry- I	<p>CO1. Students will recognize and interpret themes of nature, love, patriotism and elegy in Mizo Poetry</p> <p>CO2. Students will analyze how Mizo poets use imagery, rhythm, and oral techniques to express emotions related to landscape, love, national identity, and mourning within Mizo cultural context.</p> <p>CO3. Students will evaluate the social and cultural function of different poetic forms — nature poetry for connection to land, love songs for relationships, patriotic songs for national pride, and</p>

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		<p>elegies for remembrance — in shaping Mizo identity and oral tradition.</p> <p>PSO1. Students will classify and critically interpret major thematic strands of Mizo poetry and explain their stylistic features.</p> <p>PSO2. Students will analyze how Mizo poets convey relationship to land, romantic emotion, national sentiment, and grief through oral poetic forms.</p> <p>PSO3. Students will compare traditional and modern Mizo poems across these themes, evaluate their evolution, and demonstrate ability to create or present informed commentary on how nature, love, patriotism, and elegy shape Mizo literary identity.</p>
MIZ 161	Short Play- I	<p>CO1. Students will identify key elements of Lemchan such as plot, character, dialogue, setting, and conflict, and explain how they function in Mizo short plays.</p> <p>CO2. Students will examine major themes, social concerns, and literary techniques used in prescribed Mizo short plays and relate them to the cultural and historical context of the Mizo people.</p> <p>CO3. Students will appreciate Mizo short plays as a literary and performance art form, and evaluate their significance in expressing Mizo identity, values, and</p>

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		<p>contemporary issues.</p> <p>PSO1. Students will demonstrate knowledge of Lemchan as a genre of Mizo literature and analyze structure, characterization, dialogue, and conflict in selected Mizo Short Plays.</p> <p>PSO2. Students will interpret how Mizo Short Plays reflect social issues, values and evaluate their role as a medium for cultural expression and critique.</p> <p>PSO3. Students will critically assess the literary and theatrical qualities of Mizo Short Plays and demonstrate ability to communicate insights through academic discussion, review, or creative performance-based approaches.</p>
MIZ/200	Drama I	<p>CO1. Students will be able to compare and analyze English plays translated into Mizo with original Mizo dramas, evaluating differences in themes, dramatic techniques, and cultural adaptation across the two traditions.</p> <p>CO2. Students will be able to learn about the different types of Mizo Drama, there will be comparative studies of the Mizo plays and the English plays translated into Mizo language.</p>

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		<p>PSO1. Students will develop the ability to understand, interpret, and compare translated dramas and original Mizo dramas, including their themes, characters, and cultural contexts.</p> <p>PSO2. Students will be able to critically analyze dramatic texts and demonstrate basic skills in dialogue delivery, characterization, and stage presentation.</p>
MIZ/201	Mizo Folk Narratives	<p>CO1. Students will learn how the traditional Mizo narrative plays a significant role in the development of Mizo literature.</p> <p>CO2. The students will examine the importance and relevance of Mizo oral narratives, the traditional culture and society will be analysed</p> <p>PSO1. Students will understand various forms of Mizo folk narratives such as myths, legends, folktales, and their role in preserving cultural values and traditions.</p> <p>PSO2. Students will be able to interpret themes, morals, and narrative techniques in folk stories and analyze their relevance in contemporary society.</p>
MIZ/260	Short Story- II	<p>CO1. This paper will give the better understanding of the Mizo culture and society reflected through the selected text.</p> <p>CO2. Help the students in identifying the different styles and techniques of Mizo short story writers and develop the knowledge of different forms of short</p>

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		<p>story writings.</p>
		<p>PSO1. Students will develop knowledge of key elements of Mizo short stories such as plot, character, setting, theme, and narrative style.</p> <p>PSO2. Students will be able to analyze short stories critically and produce their own short stories using appropriate language, structure, and literary techniques.</p>
<p>MIZ/261</p>	<p>Mizo Folksong- II</p>	<p>CO1. It will help to inculcate the appreciation of Mizo culture and tradition in the oral period and impart its significance in the modern society.</p> <p>CO2. The students will be able to learn the importance and significance of the early Mizo songs. It will be an important way to understand and appreciate the past history and literature of the Mizo.</p> <p>PSO1. Students will be able to understand and appreciate the cultural values, traditions, and social life reflected in Mizo folksongs.</p> <p>PSO2. Students will be able to analyze the themes, structure, and stylistic features of Mizo folksongs, including their musical and poetic elements.</p>

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MIZ/250	Mizo Tawng leh a Ziah Dan Kalmang (Mizo Grammar & Writing Skill)	<p>CO1. It will impart an enhanced knowledge of Mizo language and also develop the language skills of students from the selected text.</p> <p>CO2. It will help the students in gaining an in-depth knowledge and understanding of the correct way of writing Mizo language.</p> <p>PSO1. Students will be able to apply the rules of Mizo grammar accurately, including sentence structure, tense, and proper usage of words in both spoken and written forms.</p> <p>PSO2. Students will be able to express ideas clearly and creatively in written Mizo through essays, letters, and other forms, using correct grammar, vocabulary, and style.</p>
MIZ/300	Theory of Mizo Literature	<p>CO1. The students will have an enhanced understanding of the theory of different genre, it will also impart how literature plays a significant role in the Mizo culture.</p> <p>CO2. The students will examine the importance and relevance of Mizo literature, the course will be able to link and distinguish between the varying genres of Mizo literature.</p> <p>PSO1. Students will be able to explain and apply major literary theories and critical approaches in the study of Mizo literature, enhancing their analytical and interpretative skills.</p> <p>PSO2. Students will be able to critically analyze and evaluate Mizo literary works</p>

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		by relating them to theoretical concepts, cultural context, and literary traditions.
MIZ/301	Literary Movements & Trends in English Literature	<p>CO1. The students will have an enhanced understanding and appreciation of the movements and trends in English literature.</p> <p>CO2. The students will be able to learn and examine the importance and relevance of English literature, the course will be able to link and compare the Mizo and English literature.</p> <p>PSO1. Students will be able to identify and explain major literary movements and trends in English literature (such as Romanticism, Realism, Modernism, and Postmodernism) along with their key features and historical contexts.</p> <p>PSO2. Students will be able to analyze literary texts by relating them to specific movements and trends, demonstrating an understanding of how historical, cultural, and social factors influence literature.</p>
MIZ/302	Essay- II	<p>CO1. The students will be able to demonstrate a thorough understanding of the key themes and concepts in Mizo essays on life, contentment, religion, and adversity.</p> <p>CO2. They will be able to analyze the literary devices used in Mizo essays on these topics and write their own essays in the Mizo style on these topics.</p> <p>CO3. These skills will be valuable to students in a variety of fields, including English, literature, and communication.</p>

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		<p>PSO1. Students will be able to organize and write well-structured essays in Mizo with clear introduction, body, and conclusion.</p> <p>PSO2. Students will be able to express thoughts, opinions, and arguments clearly and coherently in Mizo using appropriate vocabulary and style.</p> <p>PSO3. Students will be able to apply correct grammar and demonstrate creativity in essay writing, reflecting originality and cultural understanding."</p>
MIZ/350	Mizo Tawng Dinhmun leh Hmasawn Dan (Mizo Language- Status and Development)	<p>CO1. The students will be able to demonstrate a thorough understanding of the Mizo language by discussing its key features, history, and development, as well as the current status and challenges facing the language.</p> <p>CO2. They will be able to communicate their understanding in a clear and concise manner, both orally and in writing.</p> <p>PSO1. Students will be able to analyze the historical and present status of the Mizo language, including its recognition, usage in education, administration, and its role in society.</p> <p>PSO2. Students will be able to assess the growth and development of the Mizo language in terms of script, literature, standardization, modernization, and its adaptation to contemporary needs such as media and technology.</p>
MIZ/360	Drama- II	CO1. Students will be able to demonstrate a thorough understanding

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		<p>of the key features of drama, such as plot, character, setting, and theme.</p> <p>CO2. They will be able to discuss the history and development of drama in a clear and concise manner, analyze the different elements of drama and identify their impact on the story.</p> <p>CO3. Evaluate the impact of drama on society and discuss its relevance to the present day.</p> <p>PSO1. Students will be able to compare and contrast themes, characters, and dramatic techniques used in English and Mizo dramas, developing a broader perspective on different literary traditions.</p> <p>PSO2. Students will be able to critically analyze the structure, plot, dialogue, and cultural context of selected English and Mizo plays, enhancing their interpretative and analytical abilities.</p> <p>PSO3. Students will be able to appreciate the social, cultural, and historical backgrounds reflected in both English and Mizo dramas, understanding how drama serves as a mirror of society.</p>
MIZ/361	Poetry- II	<p>CO1. Mizo poetry, help them develop their understanding of Mizo poetry through close reading and analysis, and encourage them to appreciate the beauty and power of Mizo poetry.</p> <p>CO2. The students will be able to identify and discuss the major forms of Mizo poetry, analyze Mizo poetry using literary</p>

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		<p>devices and techniques, write their own Mizo poetry, and appreciate the beauty and power of Mizo poetry.</p> <p>PSO1. Students will be able to identify and explain the characteristics, themes, and stylistic features of different forms of Mizo poetry such as nature poems, devotional songs, ballads, odes, and satire.</p> <p>PSO2. Students will be able to interpret and critically appreciate Mizo poems by analyzing their language, imagery, tone, and cultural significance across various poetic forms.</p>
MIZ/362	English Poetry and Prose	<p>CO1. The students will be able to identify, discuss, analyze, write, and appreciate English poetry and prose.</p> <p>CO2. Students will be able to critically read, understand, and interpret various forms of English poetry and prose, identifying themes, literary devices, and stylistic features.</p> <p>CO3. Students will develop the ability to analyze and express their ideas clearly in both written and oral forms, demonstrating an appreciation of language, structure, and meaning in literary texts.</p>

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		<p>PSO1. Students will develop an appreciation of English poetry and prose by understanding themes, emotions, and artistic expressions across different periods and authors.</p> <p>PSO2. Students will be able to critically analyze literary texts, identifying literary devices, narrative techniques, tone, and stylistic elements in both poetry and prose.</p> <p>PSO3. Students will enhance their ability to express ideas clearly and coherently through written and oral communication based on their understanding of literary texts."</p>
MIZ/363	Fiction- I	<p>CO1. The students will be able to identify and discuss the major themes and motifs in Mizo fiction, analyze Mizo fiction using literary devices and techniques, and appreciate the beauty and power of Mizo fiction.</p> <p>CO2. Students will be able to read and understand various forms of fiction, identifying key elements such as plot, character, setting, theme, and narrative style.</p> <p>CO3. Students will develop the ability to critically analyze fictional texts and express their interpretations clearly through written and oral communication.</p>

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		<p>PSO1. Students will be able to identify and understand key elements of Mizo fiction such as plot, character, setting, theme, and narrative style within the Mizo cultural context.</p> <p>PSO2. Students will develop the ability to critically analyze Mizo fictional works, interpreting themes, language use, and social or cultural messages.</p> <p>PSO3. Students will enhance their ability to express ideas clearly in written and oral forms, and demonstrate creativity through writing or interpreting Mizo fictional narratives."</p>
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PHYSICS DEPARTMENT

Course No.	Name of the Paper	Course Outcome
The students will be able to:		
1st Semester		
PHY100	Mathematical Physics-I	<p>CO1: Revise the knowledge of vectors, vector calculus, and matrices. These basic mathematical structures are essential for solving problems in various branches of Physics.</p> <p>CO2: Learn curvilinear coordinates, which have applications in problems involving spherical and cylindrical symmetries, as well as beta and gamma functions and their applications in solving special integrals.</p>
PHY101*	Electricity Fundamentals	<p>CO1: Revise knowledge about electric current, current density, Ohm's law, Kirchhoff's laws, and combination of resistors.</p> <p>CO2: Understand the magnetic effect of current and electromagnetic induction.</p> <p>CO3: Apply phasor rules to analyze AC circuits consisting of series and parallel combinations of voltage sources and resistors.</p> <p>CO4: Understand the basic working principles of common electrical appliances and circuits.</p>
2nd Semester		
PHY160	Mechanics, Properties of Matter and Oscillation	<p>CO1: Understand the laws of motion and their application to various dynamical situations.</p> <p>CO2: Understand the analogy between translational and rotational dynamics, collisions, and simple harmonic motion.</p> <p>CO3: Understand the concept of</p>

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		<p>elasticity and the equations governing fluid dynamics.</p> <p>CO4: Explain the phenomena of simple harmonic motion and the properties of systems executing such motions.</p>
PHY161*	Basic Electronics	<p>CO1: Understanding N- and P-type semiconductors, mobility, drift velocity, and fabrication of PN junctions.</p> <p>CO2: Application of PN junctions in different types of rectifiers, voltage regulators, and special diodes.</p> <p>CO3: Understanding NPN and PNP transistors, their configurations, current and voltage gain.</p> <p>CO4: Knowledge of biasing, equivalent circuits, coupled amplifiers, feedback in amplifiers and oscillators.</p> <p>CO5: Understanding the working and applications of CRO.</p>
PHY110 (MDC)	Physics For All	<p>CO1: Understand the foundation of fundamental Newtonian Mechanics.</p> <p>CO2: Understand how scientific theory evolves over time.</p> <p>CO3: Gain basic knowledge of the universe and its evolution.</p> <p>CO4: Acquire basic understanding of laws of motion and oscillation.</p>
3rd Semester		

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PHY200	Heat and Thermodynamics	<p>CO1: Comprehend basic concepts of thermodynamics, including the First and Second Laws, entropy, heat engines, and related theorems.</p> <p>CO2: Understand Maxwell's thermodynamic relations, thermodynamic potentials, and their physical interpretations.</p> <p>CO3: Learn the fundamental aspects of kinetic theory of gases, including Maxwell-Boltzmann distribution, equipartition of energy, and mean free path.</p> <p>CO4: Gain knowledge of transport phenomena such as viscosity, thermal conductivity, diffusion, and Brownian motion.</p>
PHY200P	Laboratory-I	<p>CO1: Develop practical skills in using laboratory instruments such as CRO, galvanometer, metre bridge, and optical lever.</p> <p>CO2: Perform experiments to determine physical quantities like pressure coefficient, coefficient of linear expansion, and resistance accurately.</p> <p>CO3: Understand experimental methods for analyzing electrical and thermal properties of materials.</p> <p>CO4: Analyze observations, estimate errors, and interpret experimental results scientifically.</p>
PHY201*	Ray Optics and Optical Instruments	<p>CO1: Understand the phenomena of reflection and refraction of light.</p> <p>CO2: Comprehend the concept of image formation in mirrors and lenses.</p> <p>CO3: Learn about thick lenses and associated aberrations.</p> <p>CO4. Understand the working of basic optical instruments such as microscope, eyepiece, telescope,</p>

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		camera, and the human eye.
4th Semester		
PHY260	Mathematical Physics-II	<p>CO1: Master analytical and series-based techniques (Frobenius method) to solve first and second-order ordinary differential equations.</p> <p>CO2: Apply separation of variables to solve fundamental equations for heat flow, wave vibrations, and potentials in multiple coordinate systems.</p> <p>CO3: Mastery of Legendre, Hermite, Bessel, and Laguerre functions to solve advanced problems in electrostatics and quantum mechanics.</p> <p>CO4: Understand and apply recurrence relations, generating functions, and orthogonality properties of polynomials to physical systems.</p>
PHY260P	Laboratory-2	<p>CO1. Apply Kirchhoff's laws to analyse current and voltage within complex circuits and networks.</p> <p>CO2. Use a Post Office Box and other instruments to calculate unknown resistance and observe thermal effects on lamp filaments.</p> <p>CO3. Determine Earth's magnetic field components (horizontal intensity and angle of dip) using specialized magnetometers.</p> <p>CO4. Experimentally verify the Inverse Square Law and calculate</p>

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		the magnetic moment of bar magnets.
PHY261*	Modern Physics	<p>CO1: Understand atomic models, electronic configurations, and the physics of X-ray spectra, including Moseley's law and mass spectrograph.</p> <p>CO2: Distinguish between classical and quantum theories of blackbody radiation using laws by Stefan-Boltzmann, Wien, and Planck.</p> <p>CO3: Grasp the dual nature of matter (wave-particle duality), the Uncertainty Principle, and the effects of Special Relativity like time dilation and mass-energy equivalence.</p> <p>CO4: Analyse the specific heat of solids (Einstein and Debye models) and the motion of electrons in metals using Fermi energy and conductivity laws.</p>
5th Semester		

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PHY300	Wave Optics	<p>CO1: Explain the physics of interference, diffraction, and polarization using the principles of superposition and wave motion.</p> <p>CO2: Understand the mechanics of interferometers, biprisms, and diffraction gratings for precision measurement of light properties.</p> <p>CO3: Grasp the production methods of LASERs, including population inversion and Einstein's coefficients, along with their practical applications.</p> <p>CO4: Apply Rayleigh's criterion to determine the resolution and resolving power of telescopes, gratings, and other optical instruments.</p>
PHY301P	Laboratory-3	<p>CO1: Determine the focal length and radius of curvature of lenses using the displacement and Newton's rings methods.</p> <p>CO2: Demonstrate proficiency in calculating the magnifying power of telescopes and using traveling microscopes for refractive index measurements.</p> <p>CO3: Calculate the specific heat and coefficient of apparent expansion of liquids through experimental cooling and weight thermometry.</p> <p>CO4: Use interference patterns (Newton's rings) to perform high-precision geometric measurements of optical components.</p>

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PHY301	Classical and Statistical Mechanics	<p>CO1: Apply Lagrangian and Hamiltonian formulations to solve complex physical problems, including central force motion and Keplerian orbits.</p> <p>CO2: Understand the Calculus of Variations, the Principle of Least Action, and D'Alembert's Principle to derive equations of motion.</p> <p>CO3: Grasp the concepts of microstates, macrostates, and phase space across micro-canonical, canonical, and grand-canonical ensembles.</p> <p>CO4: Derive and apply Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics to systems like free electron metals and harmonic oscillators.</p>
PHY301P	Laboratory-4	<p>CO1: Determine the acceleration due to gravity (g) by studying the period of a bar pendulum.</p> <p>CO2: Calculate the frequency of a tuning fork via Melde's experiment and verify the laws of vibrating strings using a sonometer.</p> <p>CO3: Determine Young's modulus of a wire using Searle's method and measure the coefficient of viscosity and surface tension of liquids.</p> <p>CO4: Gain proficiency in using specialized laboratory apparatus to quantify fundamental physical constants and material properties.</p>

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PHY302*	Electromagnetic Theory	<p>CO1: Apply Gauss's law and Poisson/Laplace equations to determine electric fields, capacitance, and the behaviour of dielectrics and polarization.</p> <p>CO2: Understand the modification of Ampere's law through displacement current and the unified framework of Maxwell's equations in various gauges.</p> <p>CO3: Characterize the transverse nature of electromagnetic waves, wave impedance, and propagation through vacuum, dielectrics, and conducting media.</p> <p>CO4: Apply boundary conditions to solve problems involving the reflection and refraction of plane waves using Fresnel's formulae and Brewster's law.</p>
6th Semester		
PHY360	Quantum Mechanics	<p>CO1: Understand the basic postulates and solve the Schrodinger equation for 1D systems like particles in boxes, potential steps, and tunnelling.</p> <p>CO2: Apply linear and Hermitian operators, commutators, and expectation values within the framework of Hilbert space and Dirac's bra-ket notation.</p> <p>CO3: Explain spatial quantization and determine eigenvalues for angular momentum operators (L^2 and L_z) and their physical significance.</p> <p>CO4: Mathematically describe the harmonic oscillator and the non-relativistic hydrogen atom by solving wave equations in spherical polar coordinates.</p>

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PHY360P	Laboratory-5	<p>CO1: Experimentally determine the I-V characteristics of PN-junction and Zener diodes, and calculate the energy band gap of semiconductors.</p> <p>CO2: Master various transistor biasing configurations and evaluate both static and dynamic characteristics in Common Emitter (CE) and Common Base (CB) modes.</p> <p>CO3: Validate Stefan's law of radiation and experimentally determine Stefan's constant through precision measurements.</p> <p>CO4: Use Joule's electrical calorimeter to calculate the mechanical equivalent of heat, linking electrical energy to thermal work.</p>
PHY361	Nuclear & Particle Physics	<p>CO1: Master the concepts of binding energy, nuclear stability, and the semi-empirical mass formula to explain ground state properties.</p> <p>CO2: Understand the liquid drop and shell models alongside the physics of alpha, beta, and gamma decay, including Gamow's and Pauli's theories.</p> <p>CO3: Analyze nuclear fission and fusion processes and understand the working principles of particle accelerators (cyclotrons, synchrotrons) and detectors (GM counters).</p> <p>CO4: Identify fundamental elementary particles and their conservation laws, while understanding the origins and effects of cosmic rays.</p>

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PHY361P	Laboratory-6	<p>CO1: Solve complex ordinary and partial differential equations (like the heat and wave equations) using analytical methods and the Frobenius power series.</p> <p>CO2: Mastery of Legendre, Hermite, Bessel, and Laguerre functions to solve advanced problems in quantum mechanics and spherical/cylindrical systems.</p> <p>CO3: Experimentally determine critical physical values, including the electron's charge-to-mass ratio (e/m) and the electrochemical equivalent (ECE) of copper.</p> <p>CO4: Use laser diffraction for precision measurements of wavelengths and wire diameters, and perform statistical analysis on nuclear radiation using GM counters.</p>
PHY362	Mathematical Physics-III	<p>CO1: Master the algebra of complex numbers and apply the Cauchy-Riemann equations to determine the analyticity and differentiability of functions.</p> <p>CO2: Utilize Taylor and Laurent series, Cauchy's Integral Theorem, and the Residue Theorem to evaluate complex contour integrals.</p> <p>CO3: Apply Fourier and Laplace transforms, along with their inverse operations, to solve differential equations and boundary value problems.</p> <p>CO4: Develop a functional understanding of the Dirac Delta function and its properties for modeling physical phenomena.</p>

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PHY363*	Atomic & Molecular Physics	<p>CO1: Evaluate the evolution of atomic theory from Bohr and Sommerfeld to the Vector Atom Model, including spin-orbit coupling and relativistic corrections.</p> <p>CO2: Understand the physical interpretation of the Stern-Gerlach experiment, Pauli's exclusion principle, and the fine structure of hydrogen and alkali atoms.</p> <p>CO3: Explain the impact of external electric and magnetic fields on atomic spectra through the study of the Zeeman, Paschen-Back, and Stark effects.</p> <p>CO4: Mastery of rotational, vibrational, and electronic spectra of diatomic molecules using models like the rigid rotator, harmonic oscillator, and the Born-Oppenheimer approximation</p>
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** indicates that Minor Courses is also offered for other subjects*

PROGRAM OUTCOMES (POs)

At the end of the program, the student will have/be able to:

PO1. Fundamental Knowledge: Develop a strong foundation in core areas of physics such as mechanics, thermodynamics, electromagnetism, optics, quantum physics, and electronics.

PO2. Analytical & Problem-Solving Skills: Apply mathematical and computational methods to analyse physical systems and solve complex problems logically.

PO3. Experimental & Technical Skills: Perform experiments, use scientific instruments, analyse data, and interpret results with accuracy and scientific reasoning.

PO4. Communication & Scientific Attitude: Communicate scientific ideas effectively and develop critical thinking, teamwork, and ethical responsibility in scientific work.

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PROGRAM SPECIFIC OUTCOMES (PSOs)
At the end of the program, the student will have/be able to:
PSO1. Application of Physical Principles: Apply concepts from classical mechanics, quantum mechanics, electromagnetism, and statistical physics to real-world phenomena and technological applications.
PSO2. Mathematical Physics & Modelling: Use mathematical tools and techniques to formulate and solve physical problems, including modelling and simulations.
PSO3. Electronics & Instrumentation Skills: Understand and work with basic electronics, optical instruments, and modern experimental techniques relevant to physics research and industry.
PSO4. Advanced Concepts & Research Readiness: Gain knowledge in advanced topics such as quantum mechanics, nuclear physics, and wave optics, enabling higher studies, research, and professional careers in physics and allied fields.

DEPARTMENT OF POLITICAL SCIENCE			
Sem	Course Code	Course Name	Course Outcome

I	POLS100	Political Theory	<ul style="list-style-type: none"> ▪ CO1: Explain the meaning, scope, and significance of political theory, and critically analyse major approaches to its study including Traditional, Behavioural, Post-Behavioural, and Marxist perspectives. ▪ CO2: Examine the concept of the state and its origins from Liberal and Marxist viewpoints, and evaluate the nature, characteristics, and competing theories of sovereignty including Monistic and Pluralist interpretations. ▪ CO3: Analyse the core political concepts of liberty, equality, and rights, and distinguish between their various types and interpretations in political thought. ▪ CO4: Assess the idea of justice with special reference to John Rawls' theory, and evaluate the meaning, forms, and major theories of democracy including Elitist, Pluralist,
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			and Marxist approaches.
I	POLS101 (Major2/Minor)	Government & Politics of Mizoram	<ul style="list-style-type: none"> ▪ CO1: Describe the political history of Mizoram (1890–1986), and explain the structure, powers, and functions of chieftainship along with the provisions and relevance of the Inner Line Regulation.

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			<ul style="list-style-type: none"> ▪ CO2: Analyse the causes and consequences of insurgency in Mizoram and evaluate the significance of the Mizoram Peace Accord (Memorandum of Settlement, 1986). ▪ CO3: Examine the emergence and development of political parties in Mizoram, including Mizo Union and United Mizo Freedom Organisation, and assess the role of national parties (INC, BJP) and regional parties (MNF, MPC, ZPM). ▪ CO4: Explain the structure, powers, and functions of local self-government institutions in Mizoram, including municipalities, village councils, and autonomous district councils.
I	POL110 (MDC)	Introduction to the constitution of India	<ul style="list-style-type: none"> ▪ CO1: Recall and explain the philosophical foundations of the Indian Constitution, including the Preamble, its salient features, and

			<p>sources.</p> <ul style="list-style-type: none"> ▪ CO2: Explain and apply the provisions of Fundamental Rights, Fundamental Duties, and Directive Principles of State Policy in contemporary contexts. ▪ CO3: Analyse the composition, powers, and functions of the Supreme Court and evaluate its role in judicial review. ▪ CO4: Examine the powers and functions of the President and Prime Minister within India's parliamentary system. ▪ CO5: Compare and evaluate the composition, powers, and functions of the Lok Sabha and Rajya Sabha. ▪ CO6: Assess the composition, powers, and functions of the Election Commission of India in ensuring free and fair elections.
II	POLS160 (Major)	Indian Govt. & Politics	<ul style="list-style-type: none"> ▪ CO1: Explain the formation and role of the Constituent Assembly, and analyse the

			<p>Preamble, salient features, Fundamental Rights, Duties, and Directive Principles of the Constitution of India.</p> <ul style="list-style-type: none"> ▪ CO2: Examine the nature of Indian federalism, and evaluate the amendment procedure and emergency provisions of the Constitution. ▪ CO3: Analyse the structure and functions of the Union and State legislatures, and assess the roles of the Prime Minister and Chief Minister in governance. ▪ CO4: Explain the composition and functions of the judiciary (Supreme Court and High Courts) and the executive (President and Governor) in India.
II	POLS161 (Major2/Minor)	Forms of Government	<ul style="list-style-type: none"> ▪ CO1: Explain the meaning, types, and functions of the organs of government— legislature, executive, and judiciary. ▪ CO2: Analyse the meaning and characteristics of

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			<p>unitary and federal systems of government.</p> <ul style="list-style-type: none"> ▪ C03: Compare the parliamentary and presidential systems in terms of their meaning and basic characteristics. ▪ C04: Evaluate democracy and authoritarianism, including their meaning, types, merits, and demerits.
II	VAC102	Understanding India	<ul style="list-style-type: none"> ▪ C01: Define the idea of image and explain the concepts of ideological and ethnographic image. ▪ C02: Analyse the nature of the ideological and ethnographic image of Indian society. ▪ C03: Outline the concepts of nationalism, pluralism, and Indian civilization. ▪ C04: Discuss processes of change and modernization in India. ▪ C05: Identify the major forces responsible for the continuity of tradition alongside modernization. ▪ C06: Describe the key

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			<p>parameters of the ethnographic image of Indian society.</p> <ul style="list-style-type: none"> ▪ CO7: Examine the portrayal of unity in diversity, village India, caste, tribes, and religion. ▪ CO8: Analyse the features of 'Little and Great Traditions' in India.
III	POLS200 (Major)	International Relations	<ul style="list-style-type: none"> ▪ CO1: Explain the meaning, nature, and scope of International Relations, and critically assess key theoretical approaches such as Realism and Idealism. ▪ CO2: Analyse the evolution and characteristics of the sovereign nation-state system and evaluate the concept of national interest, including its components and instruments. ▪ CO3: Examine the concept of national power and assess its major elements in shaping state behaviour in international politics. ▪ CO4: Evaluate the causes, dynamics, and global impact

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			<p>of the Cold War, and analyse the changing nature of world politics in the post-Cold War era, including unilateralism and multilateralism.</p> <ul style="list-style-type: none"> ▪ CO5: Assess the role and contemporary relevance of the Non-Aligned Movement in post-Cold War international relations. ▪ CO6: Analyse key issues in international security, including balance of power, collective security, and international terrorism.
III	POLS201 (Major2/Minor)	Human Rights	<ul style="list-style-type: none"> ▪ CO1: Explain the meaning and generations of human rights, and analyse key historical developments prior to the United Nations. ▪ CO2: Examine the provisions and significance of the Universal Declaration of Human Rights and the International Covenants on Civil and Political Rights (1966) and Economic, Social and Cultural Rights (1966). ▪ CO3: Analyse the role of the

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			<p>United Nations in promoting human rights, and evaluate group rights concerning women, children, and minorities.</p> <ul style="list-style-type: none"> ▪ CO4: Assess the role and functions of Amnesty International and the National Human Rights Commission of India in the protection and promotion of human rights.
IV	POLS260 (Major)	Western Political Thought	<ul style="list-style-type: none"> ▪ CO1: Examine the political ideas of Plato and Aristotle, focusing on justice, education, ideal state, classification of constitutions, and related concepts. ▪ CO2: Discuss the contributions of Niccolò Machiavelli and the social contract theories of Thomas Hobbes, John Locke, and Jean-Jacques Rousseau. ▪ CO3: Evaluate the theories of Jeremy Bentham on utilitarianism and John Stuart Mill on liberty and democracy. ▪ CO4: Interpret the ideas of

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			G. W. F. Hegel and Karl Marx, including dialectics, state, historical materialism, class struggle, and surplus value. Top of Form Bottom of Form
IV	POLS261	The United Nations	<ul style="list-style-type: none"> ▪ CO1: Explain the origin, development, objectives, and principles of the United Nations and its Charter. ▪ CO2: Analyse the structure and functions of the principal organs of the United Nations, including the General Assembly, Security Council, ECOSOC, Secretariat, International Court of Justice, and Human Rights Council. ▪ CO3: Examine the role and functions of specialized agencies such as UNESCO and WHO, along with UN programmes and funds like UNICEF, UNDP, and UNEP. ▪ CO4: Evaluate the role and relevance of the United Nations in the post-Cold War period. ▪ CO5: Critically assess the

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			need for and nature of reforms in the United Nations system.
V	POLS300 (Major1)	Indian Political Thought	<ul style="list-style-type: none"> ▪ CO1: Discuss the sources of Indian political thought and the theory of government and statecraft in <i>Arthashastra</i>. ▪ CO2: Explain the liberal ideas of Raja Ram Mohan Roy and the concepts of nationalism and internationalism in Swami Vivekananda. ▪ CO3: Assess the ideas of swadeshi and swaraj in the political thought of Gopal Krishna Gokhale and Bal Gangadhar Tilak. ▪ CO4: Interpret the principles of non-violence and satyagraha in Mahatma Gandhi, socialism and secularism in Jawaharlal Nehru, and social justice in B. R. Ambedkar.
V	POLS301 (Major2)	Indian Foreign Policy	<ul style="list-style-type: none"> ▪ CO1: Explain the

			<p>determinants, principles, and objectives of India's foreign policy, including the evolution and significance of the policy of non-alignment.</p> <ul style="list-style-type: none"> ▪ CO2: Analyse India's relations with major powers, particularly the United States and Russia, with reference to key issues, the Indo-US Nuclear Deal, and post-Cold War developments. ▪ CO3: Evaluate India's relations with China, focusing on major issues and areas of tension in bilateral relations. ▪ CO4: Examine India's relations with neighboring countries, especially Pakistan, Sri Lanka, and Bangladesh, with emphasis on key issues, conflicts, and recent trends. ▪ CO5: Assess India's engagement with Myanmar, including areas of cooperation and emerging challenges in bilateral relations. ▪ CO6: Analyse India's
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			<p>strategic initiatives such as the Look East/Act East Policy and India's nuclear policy in the context of regional and global politics.</p>
V	<p>POLS302 (Major3/Minor)</p>	<p>Major Political System</p>	<ul style="list-style-type: none"> ▪ CO1: Understand the salient features of the British political system and explain the functioning of its parliamentary structure, including the Monarchy, Parliament, and Cabinet. ▪ CO2: Explore the salient features of the U.S. political system with reference to the roles of the President, Congress, and Supreme Court. ▪ CO3: Identify the key features of the Swiss political system and describe the functions of the Federal Council, Federal Assembly, and Federal Tribunal. ▪ CO4: Interpret the salient features of the Chinese political system along with the structure and functions of the National People's Congress, President of the

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			PRC, and State Council.
VI	POLS361 (Major1)	Political Ideologies	<ul style="list-style-type: none"> ▪ CO1: Understand the concept and relevance of political ideologies in shaping political thought and practice. ▪ CO2: Differentiate between classical and modern liberalism in terms of their meaning and key characteristics. ▪ CO3: Explore the key concepts and various types of feminism in contemporary political discourse. ▪ CO4: Explain the concepts and types of multiculturalism and communitarianism in modern political theory.
VI	POLS362 (Major2)	Indian Politics	<ul style="list-style-type: none"> ▪ CO1: Understand the emergence of political parties in India and explain the features of the party system, including single-party dominance, multi-

			<p>party system, coalition politics, and the recognition of national and regional parties.</p> <ul style="list-style-type: none"> ▪ CO2: Examine the composition and functions of the Election Commission of India and the key provisions of electoral laws, including the Representation of the People's Act, 1951 and the Anti-Defection Law, 1985, along with electoral reforms. ▪ CO3: Explain the meaning, causes, and remedies of communalism and regionalism, and describe the constitutional provisions for reservation of SC and ST communities. ▪ CO4: Discuss the concept of secularism and evaluate the provisions related to reservation for SC, ST, and women in India.
VI	POLS362 (Major3)	Public Administration	<ul style="list-style-type: none"> ▪ CO1: Explain the evolution, meaning, nature, and significance of Public Administration, and analyse

			<p>major approaches such as Scientific Management, Human Relations, and Bureaucratic theories.</p> <ul style="list-style-type: none"> ▪ CO2: Examine the core principles of administration, including organization, hierarchy, and the concepts of centralization and decentralization. ▪ CO3: Analyse administrative behaviour with reference to leadership, decision-making, and accountability, along with key aspects of personnel administration such as recruitment, training, and promotion. ▪ CO4: Explain the concept of budgeting and evaluate the process of preparation and enactment of the budget in India. ▪ CO5: Assess the role and functions of the Comptroller and Auditor General in ensuring financial accountability.
VI	POLS363 (Major4/Minor)	Political Sociology	<ul style="list-style-type: none"> ▪ CO1: Understand the meaning, nature, and scope

			<p>of political sociology and explain major approaches including Behavioural, Marxist, and Systems Analysis.</p> <ul style="list-style-type: none"> ▪ CO2: Describe the concept, composition, and types of political culture, and explain political socialisation and forms of political participation. ▪ CO3: Examine the meaning and elements of social stratification with reference to caste and class structures. ▪ CO4: Explain the concept and characteristics of social change and discuss processes such as westernisation and secularisation.
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PROGRAMME OUTCOMES(POs) OF BA POLITICAL SCIENCE

- **PO1:** Demonstrate a comprehensive understanding of core concepts,

theories, and approaches in Political Science, including political theory, political thought, and political ideologies.

- **PO2:** Analyse the structure, functioning, and processes of political systems at national and international levels, including constitutions, governance, and comparative political systems.
- **PO3:** Evaluate political institutions, processes, and issues such as democracy, federalism, elections, party systems, public administration, and political development.
- **PO4:** Apply knowledge of political science to understand contemporary issues in Indian politics, foreign policy, human rights, and international relations.
- **PO5:** Develop critical thinking skills to interpret political phenomena using interdisciplinary perspectives such as sociology, history, and economics.
- **PO6:** Communicate political ideas and arguments effectively in both oral and written forms using appropriate academic and analytical frameworks.
- **PO7:** Demonstrate awareness of political values such as justice, equality, liberty, secularism, and human rights in personal and civic life.
- **PO8:** Build research aptitude and analytical skills for interpreting political data, policies, and real-world governance issues.

PROGRAMME SPECIFIC OUTCOMES(PSOs)

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- **PSO1:** Understand and critically engage with classical and modern political theories, ideologies, and thoughts from both Western and Indian traditions.
- **PSO2:** Analyse the functioning of Indian political system, including the Constitution, institutions, electoral processes, and public policies at central, state, and local levels.
- **PSO3:** Evaluate comparative political systems and global political processes, including international relations, United Nations, and foreign policy dynamics.
- **PSO4:** Examine socio-political issues such as human rights, social justice, political sociology, and governance challenges with contextual understanding.
- **PSO5:** Apply theoretical and analytical knowledge of Political Science to understand and respond to contemporary political and administrative issues in society.

DEPARTMENT OF ZOOLOGY

COURSE CODE	COURSE NAME	COURSE OUTCOME (CO)
ZOO100	Systematics and Fundamental Concepts	After successful completion of this course, students will be

		<p>able to:</p> <p>CO1: Understand and explain the principles of systematics, taxonomic hierarchy, Linnaean classification, and scientific nomenclature rules including priority and homonymy.</p> <p>CO2: Analyze the historical development of biological classification systems, including Aristotle’s contributions, kingdom classifications, discovery of Archaea, and the modern domain system.</p> <p>CO3: Differentiate among various species concepts and evaluate mechanisms of speciation, evolutionary relationships, and molecular phylogeny using proteins, DNA, RNA, cladograms, and phylogenetic trees.</p> <p>CO4: Critically examine foundational biological theories such as spontaneous generation, recapitulation theory, and pangenesis, along with major experimental contributions that shaped modern</p>
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		zoological science.
		<p>Program Outcome (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive knowledge of taxonomy, evolution, systematics, and historical biological concepts essential for zoological sciences.</p> <p>PO2: Critical Thinking and Scientific Reasoning</p> <p>Enhance analytical skills through evaluation of competing biological theories, classification systems, and evolutionary models.</p> <p>PO3: Research and Analytical Skills</p> <p>Build the ability to interpret phylogenetic data, taxonomic principles, and historical scientific experiments.</p> <p>PO4: Scientific Communication</p> <p>Strengthen the use of</p>

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		<p>correct scientific terminology, classification methods, and conceptual frameworks.</p> <p>PO5: Lifelong Learning and Professional Development</p> <p>Prepare students for advanced studies in zoology, biodiversity, conservation, and related biological disciplines.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1: Acquire foundational expertise in animal classification, taxonomy, and systematics essential for understanding biodiversity.</p> <p>PSO2: Develop competency in interpreting evolutionary processes, species formation, and molecular phylogenetic relationships.</p> <p>PSO3: Apply historical and modern biological concepts to zoological research, biodiversity studies, and higher academic pursuits.</p> <p>PSO4: Build scientific aptitude for advanced learning in</p>

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		evolutionary biology, wildlife biology, ecology, and taxonomy-oriented professions.
ZOO101	Non-chordate Biology	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the structural organization, locomotion, reproduction, and physiological processes of protozoans such as Amoeba, Euglena, and Paramecium.</p> <p>CO2:</p> <p>Classify major invertebrate phyla based on salient features and explain fundamental concepts such as symmetry, metamerism, coelom, and canal systems.</p> <p>CO3:</p> <p>Analyze structural adaptations, developmental processes, and ecological significance of diverse invertebrates including corals, molluscs, annelids, and arthropods.</p>

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		<p>CO4:</p> <p>Evaluate the functional systems, life histories, metamorphosis, and social organization of selected invertebrates such as insects and echinoderms.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of invertebrate diversity, taxonomy, morphology, physiology, and evolutionary significance.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Enhance analytical abilities through comparative study of invertebrate systems, adaptations, and biological functions.</p> <p>PO3: Practical and Research Skills</p> <p>Build foundational knowledge useful for laboratory identification, classification, and</p>

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		<p>biological investigations of non-chordates.</p> <p>PO4: Environmental and Biodiversity Awareness</p> <p>Promote understanding of ecological roles of invertebrates, coral reefs, and economically significant insects.</p> <p>PO5: Scientific Communication</p> <p>Strengthen zoological terminology, comparative biology concepts, and systematic interpretation.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire detailed knowledge of invertebrate taxonomy, morphology, and physiological systems.</p> <p>PSO2:</p> <p>Develop understanding of evolutionary adaptations and diversity among non-chordate organisms.</p> <p>PSO3:</p> <p>Apply zoological</p>

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		<p>concepts to biodiversity conservation, ecological studies, and entomological research.</p> <p>PSO4:</p> <p>Prepare for advanced studies and careers in zoology, marine biology, entomology, parasitology, and environmental sciences.</p>
<p>ZOO110 or ZOO120 or ZOO210</p>	<p>Fundamentals of Biology</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the historical development of biological sciences through the major contributions of pioneering scientists in physiology, microbiology, and evolutionary biology.</p> <p>CO2:</p> <p>Explain the origin and advancement of foundational biological theories including cell theory, germ theory, evolutionary theory, and Mendelian genetics.</p>

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		<p>CO3:</p> <p>Analyze major scientific discoveries such as antibiotics, DNA structure, genome research, and cloning, along with their significance in modern biology.</p> <p>CO4:</p> <p>Evaluate the ethical, scientific, and societal implications of modern biological advancements including genome studies and cloning technologies.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop foundational understanding of core biological concepts, scientific discoveries, and the evolution of life sciences.</p> <p>PO2: Critical Thinking and Scientific Reasoning</p>

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		<p>Enhance the ability to critically evaluate biological theories, scientific experiments, and technological developments.</p> <p>PO3: Historical and Conceptual Understanding</p> <p>Strengthen awareness of the progressive development of biology as an integrated scientific discipline.</p> <p>PO4: Ethical Awareness</p> <p>Develop sensitivity to ethical issues related to genetics, cloning, and biomedical advancements.</p> <p>PO5: Lifelong Learning</p> <p>Prepare students for advanced academic and professional pursuits in diverse biological fields.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire strong foundational knowledge in the history, principles, and milestones of biological</p>

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		<p>sciences.</p> <p>PSO2:</p> <p>Develop understanding of essential concepts in evolution, genetics, microbiology, and molecular biology.</p> <p>PSO3:</p> <p>Apply biological principles and historical scientific knowledge to higher studies, research, and interdisciplinary scientific careers.</p> <p>PSO4:</p> <p>Build awareness of scientific ethics and societal responsibilities associated with modern biological innovations.</p>
<p>ZOO160</p>	<p>Evolution and Ethology</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the principles of evolution, natural selection, modern synthesis, and adaptive mechanisms through classical and contemporary</p>

		<p>examples.</p> <p>CO2:</p> <p>Explain theories regarding the origin of life, molecular evolution, symbiogenesis, and human evolutionary history using fossil and genetic evidence.</p> <p>CO3:</p> <p>Analyze behavioural adaptations such as mimicry, camouflage, altruism, learning, and communication in animals from an evolutionary perspective.</p> <p>CO4:</p> <p>Evaluate the physiological and hormonal mechanisms underlying animal behaviour, survival strategies, and evolutionary responses.</p>
		<hr/> <p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive</p>

		<p>understanding of evolutionary biology, adaptive traits, and animal behaviour.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Strengthen analytical skills through interpretation of evolutionary evidence, behavioural ecology, and adaptive strategies.</p> <p>PO3: Research and Scientific Reasoning</p> <p>Build competence in evaluating biological hypotheses related to evolution, origin of life, and behavioural sciences.</p> <p>PO4: Environmental and Biodiversity Awareness</p> <p>Promote understanding of adaptation, species survival, and ecological interactions.</p> <p>PO5: Interdisciplinary Knowledge</p> <p>Integrate genetics, physiology, endocrinology, and ecology in understanding animal behaviour and evolution.</p>
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		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire advanced knowledge of evolutionary mechanisms, speciation, and adaptation in living organisms.</p> <p>PSO2:</p> <p>Develop understanding of ethological principles, behavioural ecology, and hormonal regulation of behaviour.</p> <p>PSO3:</p> <p>Apply evolutionary and behavioural concepts in ecological studies, wildlife biology, conservation, and zoological research.</p> <p>PSO4:</p> <p>Prepare for advanced studies and professional careers in evolutionary biology, behavioural science, wildlife conservation, and interdisciplinary biological sciences.</p>
ZOO161	Chordate Biology and Wildlife	Course Outcomes (CO)

		<p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the classification, diversity, and distinguishing characteristics of chordates, including protochordates and major vertebrate groups.</p> <p>CO2:</p> <p>Explain comparative anatomy, developmental biology, physiological adaptations, and specialized features of fishes, amphibians, reptiles, birds, and mammals.</p> <p>CO3:</p> <p>Analyze evolutionary adaptations such as metamorphosis, neoteny, flight, migration, reproductive systems, and survival mechanisms in chordates.</p> <p>CO4:</p> <p>Evaluate threats to wildlife, causes of extinction, biodiversity conservation strategies, and the role of global organizations in wildlife</p>
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		protection.
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive knowledge of chordate diversity, anatomy, development, and ecological significance.</p> <p>PO2: Critical Thinking and Comparative Analysis</p> <p>Strengthen analytical abilities through comparative study of vertebrate adaptations and evolutionary biology.</p> <p>PO3: Biodiversity and Conservation Awareness</p> <p>Promote understanding of wildlife conservation, extinction risks, and environmental sustainability.</p> <p>PO4: Practical and Research Skills</p> <p>Build foundational expertise useful in zoological</p>

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		<p>classification, wildlife biology, and conservation studies.</p> <p>PO5: Ethical and Environmental Responsibility</p> <p>Encourage responsible scientific attitudes toward biodiversity conservation and sustainable ecosystem management.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire detailed understanding of chordate taxonomy, comparative anatomy, developmental biology, and evolutionary adaptations.</p> <p>PSO2:</p> <p>Develop expertise in wildlife biology, biodiversity assessment, and conservation principles.</p> <p>PSO3:</p> <p>Apply zoological concepts to ecological studies, vertebrate biology, and wildlife management.</p> <p>PSO4:</p>

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		<p>Prepare for advanced studies and careers in zoology, wildlife conservation, environmental science, and biodiversity research.</p>
ZOO200	Cell Biology	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the fundamental principles of cell theory, structural organization of prokaryotic and eukaryotic cells, and membrane architecture with transport mechanisms.</p> <p>CO2:</p> <p>Explain the structure and functions of major cellular organelles and their roles in maintaining cellular activities.</p> <p>CO3:</p> <p>Analyze the organization and functions of cytoskeletal elements, extracellular matrix, and nuclear transport</p>

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		<p>systems in cellular stability and communication.</p> <p>CO4:</p> <p>Evaluate mechanisms of cell division, cell cycle regulation, meiosis, and the cellular basis of cancer development and carcinogenesis.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of cellular structure, function, and molecular organization.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Strengthen analytical skills in interpreting cellular processes, regulation, and pathological conditions.</p> <p>PO3: Laboratory and Practical Skills</p> <p>Build practical competence in cytological studies, microscopy, and</p>

		<p>experimental biology.</p> <p>PO4: Research and Innovation</p> <p>Prepare students for advanced learning in molecular biology, genetics, biotechnology, and biomedical sciences.</p> <p>PO5: Professional and Academic Development</p> <p>Provide foundational knowledge for careers in biological sciences, medicine, and research.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire in-depth knowledge of cellular architecture, molecular processes, and organelle functions.</p> <p>PSO2:</p> <p>Develop expertise in understanding cell division, genetic continuity, and disease mechanisms at the cellular level.</p> <p>PSO3:</p> <p>Apply cellular and molecular principles in laboratory</p>

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		<p>investigations, biomedical sciences, and biotechnology.</p> <p>PSO4:</p> <p>Prepare for advanced studies and professional careers in cell biology, molecular biology, medical sciences, and life science research.</p>
<p>ZOO201</p>	<p>Anatomy</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the comparative anatomy of major organ systems in selected chordates, including digestive, circulatory, respiratory, sensory, and nervous systems.</p> <p>CO2:</p> <p>Explain the structural organization and functional significance of vertebrate tissues such as integuments, cartilage, bone, ligaments, and muscles.</p> <p>CO3:</p>

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		<p>Analyze the anatomical adaptations of vertebrates with reference to specialized organs such as the brain, eye, heart, and dentition.</p> <p>CO4:</p> <p>Evaluate evolutionary modifications in vertebrate anatomical structures and correlate them with functional and ecological significance.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive knowledge of vertebrate anatomy, structural biology, and organ system organization.</p> <p>PO2: Critical Thinking and Comparative Analysis</p> <p>Enhance analytical skills through comparative anatomical studies across chordate</p>

		<p>groups.</p> <p>PO3: Practical and Laboratory Skills</p> <p>Build competencies in anatomical observation, specimen study, and morphological interpretation.</p> <p>PO4: Scientific Reasoning</p> <p>Strengthen understanding of structure-function relationships in animal biology.</p> <p>PO5: Professional Development</p> <p>Prepare students for advanced studies and careers in zoology, anatomy, physiology, and biomedical sciences.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire detailed knowledge of vertebrate comparative anatomy and functional morphology.</p> <p>PSO2:</p> <p>Develop expertise in understanding</p>

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		<p>anatomical adaptations and organ specialization across animal groups.</p> <p>PSO3:</p> <p>Apply anatomical principles in zoological research, biomedical sciences, and educational fields.</p> <p>PSO4:</p> <p>Prepare for higher studies and professional opportunities in zoology, physiology, medicine, and related life sciences.</p>
<p>ZOO261</p>	<p>Physiology</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the physiological mechanisms of digestion, respiration, and nutrient metabolism in animals.</p> <p>CO2:</p> <p>Explain circulatory, excretory, and osmoregulatory systems, including</p>

		<p>their structural and functional adaptations in diverse organisms.</p> <p>CO3:</p> <p>Analyze muscle physiology, contractile mechanisms, and biochemical basis of movement.</p> <p>CO4:</p> <p>Evaluate nervous system organization, nerve impulse conduction, synaptic transmission, and physiological coordination in animals.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of functional biology and physiological systems in animals.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Enhance analytical abilities in interpreting physiological processes and regulatory</p>

		<p>mechanisms.</p> <p>PO3: Practical and Experimental Skills</p> <p>Build foundational competence in physiological experimentation and biomedical applications.</p> <p>PO4: Research and Professional Development</p> <p>Prepare students for advanced studies in physiology, medicine, neuroscience, and allied life sciences.</p> <p>PO5: Applied Biological Understanding</p> <p>Enable application of physiological principles in health sciences, veterinary sciences, and environmental biology.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire in-depth knowledge of major physiological systems including digestion, respiration, circulation, excretion, muscle function, and neural regulation.</p> <p>PSO2:</p>

		<p>Develop expertise in understanding functional adaptations and homeostatic mechanisms across animal groups.</p> <p>PSO3:</p> <p>Apply physiological concepts and analytical skills in healthcare, biomedical research, and zoological sciences.</p> <p>PSO4:</p> <p>Prepare for higher studies and professional careers in physiology, medical sciences, neuroscience, veterinary sciences, and related biological disciplines.</p>
<p>ZOO300</p>	<p>Biochemistry</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the classification, structure, and biological significance of carbohydrates, lipids, proteins, and vitamins.</p>

		<p>CO2:</p> <p>Explain enzyme properties, mechanisms of enzyme action, enzyme inhibition, and the role of coenzymes and ribozymes in biochemical reactions.</p> <p>CO3:</p> <p>Analyze major metabolic pathways including carbohydrate and lipid metabolism such as glycolysis, glycogenesis, gluconeogenesis, and β-oxidation.</p> <p>CO4:</p> <p>Evaluate energy production mechanisms and metabolic integration through oxidative phosphorylation, TCA cycle, electron transport chain, and nitrogen metabolism (urea cycle and ketogenesis).</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p>

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		<p>Develop comprehensive understanding of biomolecules, enzymology, and metabolic processes.</p> <p>PO2: Critical Thinking and Analytical Skills</p> <p>Enhance ability to analyze biochemical pathways and regulatory mechanisms.</p> <p>PO3: Practical and Laboratory Skills</p> <p>Build competencies in biochemical experiments, estimations, and analytical techniques.</p> <p>PO4: Research and Innovation</p> <p>Prepare students for advanced studies in biochemistry, molecular biology, biotechnology, and biomedical sciences.</p> <p>PO5: Applied Biological Knowledge</p> <p>Enable application of biochemical concepts in medicine, nutrition, pharmacology, and health sciences.</p>
		<p>Program Specific</p>

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		<p>Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire in-depth knowledge of biomolecular structure, function, and metabolic pathways.</p> <p>PSO2:</p> <p>Develop expertise in enzymology, bioenergetics, and metabolic regulation.</p> <p>PSO3:</p> <p>Apply biochemical principles in laboratory research, diagnostics, and applied biological sciences.</p> <p>PSO4:</p> <p>Prepare for higher studies and professional careers in biochemistry, biotechnology, medicine, nutrition, and life science research.</p>
<p>ZOO301</p>	<p>Embryology</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p>

		<p>Understand the structure of gametes, processes of gametogenesis, and hormonal regulation involved in reproduction.</p> <p>CO2:</p> <p>Explain the mechanisms of fertilization, cleavage, blastulation, gastrulation, and early developmental processes in animals.</p> <p>CO3:</p> <p>Analyze advanced developmental concepts such as placentation, extra-embryonic membranes, regeneration, induction, and fate mapping.</p> <p>CO4:</p> <p>Evaluate the role of genes (homeotic and Hox genes), hormonal regulation in metamorphosis, and biological concepts related to ageing and development.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader</p>

		<p>program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of developmental biology, reproductive biology, and embryological processes.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Enhance analytical skills in understanding developmental mechanisms and genetic regulation.</p> <p>PO3: Practical and Laboratory Skills</p> <p>Build competencies in embryological observations, developmental staging, and experimental techniques.</p> <p>PO4: Research and Innovation</p> <p>Prepare students for advanced studies in developmental biology, genetics, and biomedical sciences.</p> <p>PO5: Professional and Academic Development</p> <p>Provide foundational knowledge for careers in reproductive biology, developmental biology,</p>
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		and medical sciences.
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire detailed knowledge of reproductive processes and embryonic development in animals.</p> <p>PSO2:</p> <p>Develop expertise in understanding developmental mechanisms, gene regulation, and morphogenesis.</p> <p>PSO3:</p> <p>Apply embryological concepts in research, biotechnology, medical sciences, and developmental studies.</p> <p>PSO4:</p> <p>Prepare for higher studies and professional careers in developmental biology, reproductive health, genetics, and life sciences.</p>
ZOO302	Endocrinology and Reproduction Biology	Course Outcomes

		<p>(CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the classification, transport, and mechanisms of action of hormones, along with the structure and functions of major endocrine glands.</p> <p>CO2:</p> <p>Explain endocrine disorders and analyze the physiological and molecular basis of hormone-related diseases and treatments.</p> <p>CO3:</p> <p>Evaluate hormonal regulation of biological rhythms, homeostasis (calcium and glucose), and reproductive processes such as parturition.</p> <p>CO4:</p> <p>Analyze endocrine functions in invertebrates, reproductive cycles in vertebrates, pheromonal communication, and hormonal control of</p>
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		contraception.
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of endocrine systems, hormonal regulation, and reproductive biology.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Enhance analytical abilities in understanding hormone mechanisms, disorders, and physiological regulation.</p> <p>PO3: Practical and Applied Knowledge</p> <p>Build foundational knowledge applicable to health sciences, reproductive biology, and endocrinology.</p> <p>PO4: Research and Innovation</p> <p>Prepare students for advanced studies in endocrinology,</p>

		<p>reproductive biology, and biomedical sciences.</p> <p>PO5: Ethical and Health Awareness</p> <p>Promote awareness of hormone-related therapies, reproductive health, and societal implications of endocrine interventions.</p>
		<hr/> <p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire in-depth knowledge of endocrine glands, hormones, and their physiological roles.</p> <p>PSO2:</p> <p>Develop expertise in understanding hormonal control of reproduction, homeostasis, and behaviour.</p> <p>PSO3:</p> <p>Apply endocrine and reproductive biology concepts in healthcare, research, and applied biological sciences.</p> <p>PSO4:</p>

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		<p>Prepare for higher studies and professional careers in endocrinology, reproductive health, biotechnology, and medical sciences.</p>
<p>ZOO360</p>	<p>Molecular Biology</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the structure and types of DNA and RNA, chromatin organization, nucleosome structure, and special chromosomes.</p> <p>CO2:</p> <p>Explain mechanisms of DNA replication, gene structure in prokaryotes and eukaryotes, and transcription processes.</p> <p>CO3:</p> <p>Analyze the central dogma of molecular biology, genetic code, translation, and gene regulation through</p>

		<p>operon models.</p> <p>CO4:</p> <p>Evaluate chromosomal analysis techniques, mutations, DNA damage and repair mechanisms, and molecular aspects of ageing.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of molecular structure, gene function, and cellular processes.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Enhance analytical skills in interpreting molecular mechanisms and genetic regulation.</p> <p>PO3: Practical and Laboratory Skills</p> <p>Build competencies in molecular techniques such as karyotyping and genetic analysis.</p> <p>PO4: Research and</p>

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		<p>Innovation</p> <p>Prepare students for advanced studies in molecular biology, genetics, biotechnology, and biomedical sciences.</p> <p>PO5: Professional Development</p> <p>Provide a strong foundation for careers in research, healthcare, biotechnology, and life sciences.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire in-depth knowledge of molecular genetics, gene expression, and chromosome organization.</p> <p>PSO2:</p> <p>Develop expertise in understanding DNA replication, transcription, translation, and mutation processes.</p> <p>PSO3:</p> <p>Apply molecular biology concepts and techniques in research, diagnostics, and</p>

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		<p>biotechnology.</p> <p>PSO4:</p> <p>Prepare for higher studies and professional careers in molecular biology, genetics, biotechnology, and biomedical sciences.</p>
ZOO361	Parasitology	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the basic concepts of protozoology and parasitology, including diversity, morphology, and life cycles of major protozoan parasites.</p> <p>CO2:</p> <p>Explain the structure, life cycle, transmission, and pathogenicity of important protozoan parasites affecting humans.</p> <p>CO3:</p> <p>Analyze the life cycles, adaptations, and disease-causing mechanisms of</p>

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		<p>helminth parasites such as cestodes and trematodes.</p> <p>CO4:</p> <p>Evaluate the biology, morphology, and pathogenicity of nematodes and other parasites, and understand their role in human diseases.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of parasite biology, host-parasite interactions, and disease mechanisms.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Enhance analytical abilities in interpreting life cycles, pathogenicity, and epidemiology of parasitic diseases.</p> <p>PO3: Practical and Diagnostic Skills</p> <p>Build competencies in identification,</p>

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		<p>classification, and laboratory diagnosis of parasites.</p> <p>PO4: Public Health and Environmental Awareness</p> <p>Promote understanding of parasitic diseases, their transmission, and control strategies.</p> <p>PO5: Research and Professional Development</p> <p>Prepare students for advanced studies in parasitology, microbiology, public health, and biomedical sciences.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire detailed knowledge of protozoan and helminth parasites, their life cycles, and adaptations.</p> <p>PSO2:</p> <p>Develop expertise in understanding host-parasite interactions and disease pathology.</p> <p>PSO3:</p> <p>Apply parasitological</p>

		<p>knowledge in disease diagnosis, control, public health, and research.</p> <p>PSO4:</p> <p>Prepare for higher studies and professional careers in parasitology, medical microbiology, epidemiology, and health sciences.</p>
<p>ZOO362</p>	<p>Haematology and Immunology</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the process of haematopoiesis, diversity of blood cells, blood coagulation mechanisms, and the structure and function of haemoglobin in gas transport.</p> <p>CO2:</p> <p>Explain the components and mechanisms of innate and acquired immunity, including cellular and humoral immune responses.</p>

		<p>CO3:</p> <p>Analyze antigen-antibody interactions, structure and types of immunoglobulins, and the scientific basis of vaccination.</p> <p>CO4:</p> <p>Evaluate immune system regulation, hypersensitivity reactions, major histocompatibility complex (MHC), and immunodeficiency disorders such as HIV/AIDS.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of blood physiology and immune defense mechanisms.</p> <p>PO2: Critical Thinking and Scientific Analysis</p> <p>Enhance analytical skills in understanding immune responses, disease mechanisms, and diagnostic</p>

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		<p>principles.</p> <p>PO3: Practical and Diagnostic Skills</p> <p>Build competencies in hematological tests, blood grouping, and immunological techniques.</p> <p>PO4: Public Health and Medical Awareness</p> <p>Promote awareness of immunity, vaccination, infectious diseases, and health management.</p> <p>PO5: Research and Professional Development</p> <p>Prepare students for advanced studies in immunology, hematology, microbiology, and biomedical sciences.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire in-depth knowledge of blood composition, immune system components, and defense mechanisms.</p> <p>PSO2:</p> <p>Develop expertise in</p>

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		<p>immunological processes, antigen-antibody interactions, and disease resistance.</p> <p>PSO3:</p> <p>Apply hematological and immunological concepts in diagnostics, healthcare, and research.</p> <p>PSO4:</p> <p>Prepare for higher studies and professional careers in immunology, hematology, medical sciences, and public health.</p>
<p>ZOO363</p>	<p>Entomology</p>	<p>Course Outcomes (CO)</p> <p>After successful completion of this course, students will be able to:</p> <p>CO1:</p> <p>Understand the classification, general characteristics, morphology, physiology, and methods of collection and preservation of insects.</p> <p>CO2:</p> <p>Explain social</p>

		<p>behaviour, caste systems, and hormonal regulation of growth, development, and metamorphosis in insects.</p> <p>CO3:</p> <p>Analyze the economic and medical importance of insects, including beneficial insects and vectors of human diseases.</p> <p>CO4:</p> <p>Evaluate pest control strategies, including biological, chemical, and integrated pest management, and the role of biotechnology in insect control.</p>
		<p>Program Outcomes (PO)</p> <p>This course contributes to the following broader program outcomes:</p> <p>PO1: Disciplinary Knowledge</p> <p>Develop comprehensive understanding of insect diversity, morphology, physiology, and ecological roles.</p> <p>PO2: Critical Thinking and Scientific Analysis</p>

		<p>Enhance analytical abilities in studying insect behaviour, adaptation, and pest management strategies.</p> <p>PO3: Practical and Field Skills</p> <p>Build competencies in insect collection, identification, preservation, and applied entomological techniques.</p> <p>PO4: Environmental and Agricultural Awareness</p> <p>Promote understanding of insect roles in ecosystems, agriculture, and public health.</p> <p>PO5: Employability and Applied Knowledge</p> <p>Prepare students for careers in agriculture, pest management, public health, and applied biological sciences.</p>
		<p>Program Specific Outcomes (PSO)</p> <p>PSO1:</p> <p>Acquire detailed knowledge of insect</p>

		<p>taxonomy, physiology, behaviour, and ecological significance.</p> <p>PSO2:</p> <p>Develop expertise in understanding insect-borne diseases and economically important insects.</p> <p>PSO3:</p> <p>Apply entomological principles in pest control, agriculture, public health, and environmental management.</p> <p>PSO4:</p> <p>Prepare for higher studies and professional careers in entomology, agriculture, forestry, pest management, and applied zoology.</p>
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