

## **FOUR –YEAR INTEGRATED BSc. BED / BA. BED PROGRAMME**

### **I. Program outcomes: BSc. BEd / BA. BEd**

After the completion of this programme student teachers will:

- PO1:** Develop knowledge and understanding with a solid foundation in educational views, and the ability to build a logical conceptualization of pedagogical knowledge that they would apply to specific curriculum areas.
- PO2:** Understand the role of education and schools in promoting sustainable development; critically analyzing various theoretical perspectives on education, teaching assessment, and learning in the light of nature and diversity of the learner.
- PO3:** Able to integrate theoretical and practical knowledge of their respective subject(s) in classroom practices, as well as pursue to keep themselves up to date with advancements in their areas of specialisation, to demonstrate their commitment to continuous self-improvement by engaging in professional development activities, reflective practices to improve teaching and learning, and to contribute to the revitalization of the teaching profession.
- PO4:** Obtain ICT Skills and competencies required for professional employment in accordance with the demands and specifications of educational institutions, research centers, and other organizations. Recognition and readiness for, independent and lifelong learning in the context of the overall explosion of knowledge and technological change.
- PO5** Acquire a wide range of key life skills and abilities of communication, reflection, art, aesthetics, theatre, Yoga and teaching skills needed for planning and organizing inclusive education & effective whole classroom instruction.
- PO6:** Develop an ability to substantiate perspectives and pedagogical content studied with field-based experiences that are provided during pre internship, school internship and post internship: adapt to cater to diverse needs of learners in schools; Understand and experience the real world of teaching with the help of systematic supervisory support and feedback

## **II. Program Specific Outcomes: BSc. BEd- PCM**

### **Physics**

After successful completion of B.Sc. Physics Course student will be able to:

**PSO1:** Acquire core knowledge in Physics in the key areas, develop written & oral communication skills in communicating physics-related topics and design an experiment, demonstrate their understanding of the scientific methods & processes.

**PSO2:** Develop proficiency in acquiring data using a variety of instruments, analyze & interpret the data, learn applications of numerical techniques and understand the impact of Physics & science on society

### **Chemistry**

After successful completion of B.Sc. Chemistry Course student will be able to:

**PSO3:** Students will be able to acquire core knowledge in Analytical, Inorganic, Organic and Physical Chemistries and explore new areas of research in both chemistry and allied fields of science and technology.

**PSO 4:** Appreciate the role and impact of chemistry in environmental, economical and social problems

### **Mathematics**

After successful completion of B.Sc. Mathematics Course student will be able to:

**PSO6:** Demonstrate basic manipulative skills in algebra, geometry, trigonometry and beginning calculus and apply mathematical problems and solutions in variety of context related to science, technology, business and industry. Illustrate solutions using numeric or graphical methods.

**PSO7:** Develop programming skills and Perform job in various fields' like science, engineering, education, banking, business and public services with precision, analytical mind, innovative thinking, clarity of thought, expression, and systematic approach.

## **Program Specific Outcomes BSc. BEd -CBZ**

### **Chemistry**

After successful completion of B.Sc. Chemistry Course student will be able to:

**PSO 1:** Acquire core knowledge in Analytical, Inorganic, Organic and Physical Chemistries and explore new areas of research in both chemistry and allied fields of science and technology.

**PSO 2:** Appreciate the role and impact of chemistry in environmental, economical and social problems

### **Botany**

After successful completion of B.Sc. Botany Course student will be able to:

**PSO 3** Acquire in-depth knowledge of Botany and its allied branches, develop skills to identify and classify plants belonging to different groups from microbes, Algae up to Angiosperms and

**PSO4** Develop awareness about environmental conservation and management strategies.

**PSO5** Gain knowledge about various applicative botanical techniques in the field of Floriculture, Horticulture and use of traditional medicine which will enable them to be the entrepreneurs.

### **Zoology**

After successful completion of B.Sc. Zoology Course student will be able to:

**PSO6** have in depth understanding about evolution, diversity of life forms in non-chordates and chordates, biological roles of the animals in the ecosystem, ecological concepts. They will be able to comprehend the latest concepts of cell biology, immunology, molecular biology, genetics, biochemistry, developmental biology and physiology and their role in living systems.

**PSO7** apply the theoretical concepts in practical and acquire hands-on skills in practical aspects. Field studies and excursion also help them to understand teamwork as well as life on the outdoors. This programme also prepares the students to be versatile enough and successful in different competitive examinations. This course also trains students in the field of applied zoology like sericulture, apiculture etc.

## **Program Specific outcomes :BA. BED- HEP**

### HISTORY

PSO1;To Understand the evolution of human civilization, the socio-cultural and political structures encompassing major aspects of local, national and global history.

PSO2:Manifest knowledge of past societies and familiarity with patterns of social, economic, political and cultural change; and appreciate how historical perspective can enrich understanding of contemporary developments and issues.

### ECONOMICS

PSO3:To identify the concepts of economy, its potential on natural resources and human resources. To understand the basic concepts of Income inequalities , poverty , unemployment , importance of National and International trade, economic policies .

PSO4: The students develop knowledge of various mathematical tools in economics. To promote values such as sustainable development, Optimum utilization of Environment and Economical Resources.

### POLITICAL SCIENCE

PSO5: To expand the understanding of diverse political systems around the world, including empirical area-based knowledge: extensive theoretical understanding of different political systems, institutions as well as its procedures and ever changing National and international contexts within which they operate.

## **Program Specific outcomes**

### **BSc. BEd HES-**

#### HISTORY

PSO1: To Understand the evolution of human civilization, the socio-cultural and political structures encompassing major aspects of local, national and global history.

PSO2: Manifest knowledge of past societies and familiarity with patterns of social, economic, political and cultural change; and appreciate how historical perspective can enrich understanding of contemporary developments and issues.

#### ECONOMICS

PSO3: To identify the concepts of economy, its potential on natural resources and human resources.

PSO4: To understand the basic concepts of Income inequalities , poverty , unemployment , importance of National and International trade, economic policies . The students develop knowledge of various mathematical tools in economics. To promote values such as sustainable development, Optimum utilization of Environment and Economical Resources.

## SOCIOLOGY

PSO5: have in-depth introduction to basic concepts, foundational sociological theories to understand the basic social institutions of the Indian society and this course helps students of urban areas to understand rural India.

PSO6: inculcate the values of studying sociology in different themes and perspectives and to enable students to cope effectively with the socio-cultural and interpersonal processes of a constantly changing complex society.

PSO7: provide the basic tools for research field, data collection or fieldwork. To apprise the student of the current and contemporary problems of the society in general and Indian society in particular. To keep the student abreast of the latest developments in the subject. To make the student aware of the importance of self-reliance in seeking and acquiring information.

## III. COURSE OUTCOMES:

### CHEMISTRY

Semester	Course code / Title	Learning outcome: At the end of the course the students will be able to:
I	BEDS1CH Chemistry I	<ul style="list-style-type: none"><li>-Understand properties of gaseous state and apply the concept to derive Maxwell-Boltzmann equation</li><li>-Link the concept of gaseous state to Andrew's isotherm and joule Thomson system.</li><li>-Predict course of photochemical reactions and understand types of photochemical reactions</li><li>-Understand properties of liquids and solutions</li><li>-Enable the students to perform experiments with accuracy and precision</li><li>-Understand basic concepts in organic chemistry to be used in subsequent semesters</li></ul>

II	BEDS2CH Chemistry II	<ul style="list-style-type: none"> <li>-Understand quantum mechanical model of atom</li> <li>-Draw structures and geometries of molecule using VSEPR and molecular orbital theory</li> <li>-Understand importance and application of chemical bonds</li> <li>-Understand concept of lattice enthalpy</li> <li>-Classify silicates based on their structure and application</li> <li>-Understand properties of noble gases and its compounds</li> <li>-Understand the general chemistry of transition elements with reference to electronic configuration, oxidation state, electrode potential, colour, electronic spectra</li> <li>-Explain electrophilic and nucleophilic substitution reactions of aromatic hydrocarbons</li> <li>-Apply knowledge of electrophilic and nucleophilic substitution reactions to alkyl halide aryl halide</li> </ul>
III	BEDS3CH Chemistry III	<ul style="list-style-type: none"> <li>-Apply concept of kinetics to various chemical and physical processes</li> <li>-Understand theories of reaction rates</li> <li>-Explain and derive mathematical relations for laws of thermodynamics</li> <li>-Understand path functions, state functions, intensive and extensive variables</li> <li>-Explain various enthalpies of reaction</li> <li>-Understand different theories of adsorption</li> <li>-Differentiate between organic and inorganic polymers</li> <li>-Apply Ellingham's diagrams to various metals</li> <li>-Understand difference between alcohols and phenols, ethers, epoxies</li> <li>-Appreciate importance of organometallic compounds</li> </ul>
IV	BEDS4CH Chemistry IV	<ul style="list-style-type: none"> <li>-Apply phase rule in one and two component systems</li> <li>-Draw phase diagrams of different component systems</li> <li>-Understand laws of crystallography and symmetry elements in crystals</li> <li>-Apply different treatment of water in real life</li> <li>-Understand different types of nuclear reactions</li> <li>-Explain aldehydes and ketones</li> <li>-Explain nomenclature and reactions of aldehydes and ketones</li> <li>-Understand reactions of carboxylic acid and their derivatives</li> <li>-Understand tautomerism</li> <li>-Apply knowledge of environmental chemistry in real life</li> </ul>
V	BEDS5CH Chemistry V	<ul style="list-style-type: none"> <li>-Apply knowledge on stereochemistry to different types of molecules</li> <li>-Explain classification and reactions of amines and heterocyclic compounds</li> </ul>

		<ul style="list-style-type: none"> <li>-Understand types of carbohydrates and alkaloids</li> <li>-Understand apply different types of spectroscopies in organic molecules</li> <li>-Appreciate the importance of chemistry in dyes and drugs</li> </ul>
VI	BEDS6CH Chemistry VI	<ul style="list-style-type: none"> <li>-Understand various methods of determination of molar conductance</li> <li>-Explain types of electrochemical cells</li> <li>-Understand ionic equilibria of chemical reactions</li> <li>-Link the physical properties of molecules with their structure</li> <li>-Understand the basic principles of UV, IR, Raman , electronic and rotational spectroscopic techniques</li> </ul>
VII	BEDS7CH Chemistry VII	<ul style="list-style-type: none"> <li>-Understand general chemistry of coordination compounds and different theories of bonding</li> <li>-Rationalize the stability of metal carbonyl compounds</li> <li>-Appreciate the impact of chemistry in paint, varnish, glass, explosive, cement etc. in the real life</li> <li>-Explain importance of trace elements in biological system</li> <li>-Understand importance of chemistry of super conductors, nano materials, conducting polymers and fullerenes</li> </ul>
VIII	BEDS8CH Chemistry VIII	<ul style="list-style-type: none"> <li>-Understand and demonstrate how structure of biomolecules determine their reactivity and biological functions. Learn about -Enzymes, cofactors and their actions and functions</li> <li>explain the structure, synthesis, properties and functions of proteins, carbohydrates and lipids</li> <li>-Understand the structure and functions of DNA and RNA</li> </ul>

#### BOTANY

Semester	Course code / Title	Learning outcome: At the end of the course the students will be able to:
I	BEDS1BO Botany I	<p><b>UNIT 1:</b> lists put various branches and applications of microbiology, enumerate scope of applied microbiology, discuss the history of virology, examine techniques to isolate soil bacteria. identifies cause and symptoms of papaya leaf curl disease.</p> <p><b>UNIT 2:</b> classify bacteria according to Berges system of classification, examines general characters of bacteria, describes binary fission and genetic recombination. defines</p>

		<p>properties, types, structures and importance of Ti plasmid, states economic importance of bacteria in medicine, agriculture, and industry, explain briefly about citrus canker and sandal spike diseases, examine the application of monoclonal antibodies and ELISA.</p> <p><b>UNIT 3:</b> explains the general characters, structure, classification, and economic importance of cyanobacteria, describes the life history of scytonema and spirulina. lists the economic importance of algae, identifies the toxic effects of algae. Recognize various pigmentation of algae.</p> <p><b>UNIT 4:</b> explains the occurrence, life cycle and general characters of Chlamydomonas, Oedogonium, sargassum and polysiphonia.</p>
II	<p>BEDS2BO</p> <p>Botany II</p>	<p><b>UNIT1:</b> explains general characters, thallus organisation, life history and reproduction in Albugo, Peziza, puccinia and Cercospora. Lists the role of fungi in medicine, industry, and agriculture. Describes general characters, economic and ecological importance of lichens. Examines the role of mycorrhiza and saccharomyces.</p> <p><b>UNIT2:</b> identifies symptoms, pathogen ethology, mode of infection of fungal diseases (Koleroga, coffee rust, grain smut of sorghum, blast disease of rice, red rot of sugarcane). Explains briefly pesticidal action of neem, Trichoderma, and bacillus thuringiensis.</p> <p><b>UNIT3:</b> Explains general characters, structure, classification, reproduction, and alteration of generation in Marchantia, Anthoceros and Funaria.</p> <p><b>UNIT4:</b> explains normal and secondary growth in plants, describes anomalous secondary growth in Dracaena and Boerhaavia. Describes the structures and functions of vascular tissue, explains the structure and functions of secretory cells and tissues, examine the structure function and apical meristem organization of meristematic tissues, explains tunica-carpus and histogen theory.</p>
III	<p>BEDS3BO</p> <p>Botany III</p>	<p><b>UNIT1:</b> explain classification, general characters, morphology, anatomy, and reproductive diversity in</p>



		<p>Psilotopsida, Lcyopsida, and Filicopsida.describes stealer evolution, seed habit and heterospory</p> <p><b>UNIT2:</b> list the contribution of palaeobotanist Birbal Sahni, outline geological time scale, explains the process of fossilization. Describe the characters of rhyinia.</p> <p><b>UNTI 3:</b> lists the scope of environmental biology, describes ecological and edaphic factors briefly, state the type of soil erosions, explains the mechanism of ecological succession and its types, discuss about hydrophytic, halophytic, mesophytic, xerophytic and epiphytic and parasitic ecological adaptations. identifies components of ecosystem. Examines fresh water and grassland ecosystem, identifies mechanical barriers of ecosystem.</p> <p><b>UNIT4:</b> describes water shed management, explains the methods to conserve natural resources, differentiate between insitu and ex situ conservation, describe the characters of phytogeographical regions of India, lists types of vegetations of India.</p>
IV	BEDS4BO Botany IV	<p><b>UNIT 1:</b> Identifies chemical nature and replication of genetic material describes properties of genetic code. lists types of non-genetic RNA. Explains regulation of gene action in prokaryotes. explains the process of RNA biosynthesis identifies the importance of genomic libraries and recombinant RNA technology. States the application of genetic engineering in agriculture. Explains the hazards and measures of safeguard technique in genetic engineering with reference to Bt Cotton. Examines the applications of bioinformatics.</p> <p><b>UNIT2:</b> examines the application of microbes in fermentation, ethanol production, industries, and production of antibiotics with reference to penicillin. Discuss the importance of water. define diffusion, water potential, osmosis, osmotic -potential, membrane, and their permeability. Describes the mechanism and factors affecting water absorption. States different types of physiological stress and their effects on plants.</p> <p><b>UNIT 3:</b> examines the importance of micro and macro plant nutrients, identifies deficiency of mineral nutrients in plants. explains the theory of ascent of sap. illustrates stomatal</p>

		<p>dynamics and mechanism of opening of stomata using diagrams. Identifies factors affecting transpiration. differentiates between transpiration and guttation. describes source-sink concept, mass flow hypothesis, contractive protein hypothesis, streaming hypothesis of phloem transport.</p>
V	<p>BEDS5BO Botany V</p>	<p><b>UNIT 1:</b> explain aim and scope of taxonomy, describes species concept, classify plants based on Bentham and hooker, Engler and prantal classification, compares the merits and demerits of Bentham and hooker, Engler and prantls classification. Assign scientific nomenclature to plants. examine ICBN rules for nomenclature. explains herbarium technique. Analyse floras and their importance. Describes the importance of botanical gardens. Defines chemo, cyto and numerical taxonomy. examines the application of computers in taxonomy.</p> <p><b>UNIT 2 and 3:</b> identifies the general characters and examines the economic importance of the following families (poaceae, arecaceae, Musaceae, orchidaceae, archiclamydae and metachlymadae) explains role and importance of ethnobotany.</p> <p><b>UNIT 4:</b> describes the botanical names, family names, part used and economic importance of the following (edible oils, cereals, sugar and starch, fibres, paper and pulp, beverages, spices, timber and medicinal and aromatic roots.)</p>
VI	<p>BEDS6BO Botany VI</p>	<p><b>UNIT 1:</b> Identifies chemical nature and replication of genetic material describes properties of genetic code. lists types of non-genetic RNA. Explains regulation of gene action in prokaryotes. explains the process of RNA biosynthesis identifies the importance of genomic libraries and recombinant RNA technology. States the application of genetic engineering in agriculture. Explains the hazards and measures of safeguard technique in genetic engineering with reference to Bt Cotton. Examines the applications of bioinformatics.</p> <p><b>UNIT2:</b> examines the application of microbes in fermentation, ethanol production, industries, and production of antibiotics with reference to penicillin. Discuss the importance of water. define diffusion, water potential, osmosis, osmotic -potential, membrane, and their</p>

		<p>permeability. Describes the mechanism and factors affecting water absorption. States different types of physiological stress and their effects on plants.</p> <p><b>UNIT 3:</b> examines the importance of micro and macro plant nutrients, identifies deficiency of mineral nutrients in plants. explains the theory of ascent of sap. illustrates stomatal dynamics and mechanism of opening of stomata using diagrams. Identifies factors affecting transpiration. differentiates between transpiration and guttation. describes source-sink concept, mass flow hypothesis, contractive protein hypothesis, streaming hypothesis of phloem transport.</p>
VII	<p>BEDS6BO</p> <p>Botany VII</p>	<p><b>UNIT 1:</b> define cell, describe the structure of eukaryotic chromosome's, telomere, and kinetochore. Describe the importance and structure of nucleosome in organisation of a chromosome. differentiate between meiosis and mitosis. Diagrammatically illustrate the various stages of meiosis and mitosis. Explain the process and importance of apoptosis. Identify structural and numerical chromosomal aberrations. define mitotic inhibitors.</p> <p><b>UNIT 2:</b> demonstrates monohybrid cross, dihybrid cross, incomplete dominance in mirabilis Jalpa and snapdragon. states Mendel's laws of genetics. Defines the term genotype, phenotype epistasis. Classifies different types of epistasis. explains complimentary and supplementary factors. describes linkage and crossing over in maize. Explains polygenic inheritance in maize and self-sterility in tobacco</p> <p><b>UNIT 3:</b> explain various theories of evolution. Examines the role of mutation in evolution states the historical account and objectives of plant breeding. lists different methods of vegetative propagation explains germplasm conservation methods. states the role of pollen banks. Analyse the importance of quarantine methods</p>

VIII	BEDS6BO  Botany VIII	<p><b>Unit 1:</b> define prosthetic groups, allosteric enzyme, co-enzymes, and co-factors. Classify different types of enzymes. Describe the properties of enzymes. identify factors affecting enzyme action and inhibition. explain competitive, non-competitive and feedback mechanism of enzyme inhibition. Identify different sources of nitrogen. Analyse the role of nif genes in the process of symbiotic fixation of nitrogen. Explain nitrogen cycle. Illustrate the synthesis of amino acids.</p> <p><b>UNIT 2:</b> describe the ultra- structure of chloroplast and photosynthetic apparatus. explain principle of light absorption and Emerson light enhancement effect. Describe the processes of hills reaction, c4, c3 cycle and CAM pathway. Differentiate between photosystem one and two. identify organelles required for photorespiration. Explain the process of photorespiration. illustrate glycolysis and Krebs cycle. Define respiratory quotient. calculate respiratory quotient for carbohydrates, fats, and proteins. identify the factors affecting rate of photosynthesis and rate of respiration.</p> <p><b>UNIT 3:</b> describe various types of plant movements. describe the role of vernalisation and florigen concept in flowering. examine the importance of plant secondary metabolites (alkaloids, phenols, and flavonoids) in plant defence mechanism. examine the role of phytochromes in photoperiodism. classify different types of plants based on photoperiodism. Describe the mode of action, physiological role, and horticultural applications of plant hormones. Draw and explain growth curve. Identify the factors affecting plant growth.</p>
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ZOOLOGY

Semester	Course code / Title	Learning outcome: At the end of the course the students will be able to:
I	BEDS1ZOL Zoology I	<ul style="list-style-type: none"> <li>-Understand the animal architecture by studying the body symmetry, body organisation and coelom</li> <li>-Describe the morphology, habit and habitat, systematic position and various systems of <i>Sycon</i></li> <li>-Imparts knowledge on the geological time scale and phylogenetic tree.</li> <li>-Discuss the life cycle and importance of major parasites its occurrence, disease caused, mode of transmission, life cycle and preventive measures</li> </ul>
II	BEDS2ZOL Zoology II	<ul style="list-style-type: none"> <li>-Lists the general characters of the phylum Arthropoda and classification, Describe the morphology, habit and habitat, systematic position and various systems of Prawn and describes why arthropods is a successful animal group</li> <li>-Explain the structure of body wall of Arthropoda, respiratory organs, sense organs and describes the morphology, habit and habitat, systematic position and various systems of Unio</li> <li>-Describe the morphology, habit and habitat, systematic position and various systems of Sea Star, lists the affinities and systematic position of Hemichordata</li> <li>-Describes the importance of Sericulture, Apiculture, Prawn Fisheries, the importance of Insects in Human welfare</li> <li>-Identifies different types of Parasitic Arthropods</li> </ul>
III	BEDS3ZOL Zoology III	<ul style="list-style-type: none"> <li>-Understand the basic chordate characters and classification up to classes, Differentiate class Chondrichthyes and Osteichthyes</li> <li>-Describe the morphology, habit and habitat, systematic position and various systems of <i>Scoliodon</i></li> <li>-Describe the morphology, habit and habitat, systematic position and various systems of frog and explain Adaptive radiation in extinct and extant reptiles</li> <li>-Explain the interesting features of Sphenodon, mammals and differentiate between Ratitae and Carinatae.</li> <li>-Explains Pisciculture, fishing gears and crafts used in fishery and also understands fish processing and preservation, diseases of poultry, differentiates different breeds of cattle: indigenous and exotic breeds and their disease.</li> </ul>

IV	BEDS4ZOL Zoology IV	<ul style="list-style-type: none"> <li>-Comparative knowledge of integumentary, heart, brain circulatory, fishes, amphibians, reptiles, birds and mammals</li> <li>-Comparative knowledge of respiratory, excretory organ, and understand the immune system.</li> <li>-Understand the nature and basic concepts of cell biology ---</li> <li>-Understanding thr histological features of the following mammalian organs</li> </ul>
V	BEDS5ZOL Zoology V	<ul style="list-style-type: none"> <li>-Understanding the fundamentals of the ecology and mechanism of toxicity in the body.</li> <li>-Describing the current environmental issues, wild life conservation and its management</li> <li>-Studying the Animal behaviour</li> </ul>
VI	BEDS6ZOL Zoology VI	<ul style="list-style-type: none"> <li>-Understands the concepts of Gametogenesis, Fertilization, Cleavage, and Blastulation in Developmental Biology</li> <li>-Explains the concepts of Fatemaps and cell lineage</li> <li>-Understands the origin of life, Role of Evolutionary forces in speciation and evolution of man in evolutionary biology</li> </ul>
VII	BEDS7ZOL Zoology VII	<ul style="list-style-type: none"> <li>-Understands the concept of gene, chromosomal basis of sex determination</li> <li>-Understands Chromosomal abberations and gene mutations</li> <li>-Gains knowledge on genetic engineering/Recombinant DNA technology and Applications of Biotechnology</li> </ul>
VIII	BEDS8ZOL Zoology VIII	<ul style="list-style-type: none"> <li>-Explains the process of digestion, circulation, theories of blood clotting, regulation of respiration, excretion, muscle physiology and energy metabolism in animal physiology</li> <li>-Understands the homeostatic functions and common disorders in humans</li> <li>-Imparts the knowledge on various techniques in biology, Microscopy and Statistical tools and their applications</li> </ul>

ZOOLOGY

<b>Semester</b>	<b>Course code / Title</b>	<b>Learning outcome: At the end of the course the students will be able to:</b>
I	BEDS1PH  Physics I	<p>CO 1: Describe Newton's laws of motion, and concepts of terminal velocity, and apply them for the mechanics of single-stage rockets and to the system of particles.</p> <p>CO2: Explain Kepler's contribution towards gravitation, and planetary and satellite motion.</p> <p>CO 3: Understand the principle of work, energy, and power.</p> <p>CO 4: Determine the Centre mass of a given configuration. CO 5: Arrive at various laws of the black body based on the quantum theory of radiation and estimate the surface temperature of the sun.</p> <p>CO 6: Relate the coefficient of viscosity and coefficient of thermal conductivity with necessary theory, derivations, and calculations.</p> <p>CO7: Understand the kinetics of transport phenomena in gases</p> <p>CO8: Describe the laws of thermodynamics with necessary laws, various processes, relations, and theorems.</p> <p>CO9: Learn the basic principles of heat engines and refrigerators.</p>
II	BEDS2PH  Physics II	<p>CO1: Discuss SHM, various types of oscillation, and the transfer of energy related to them.</p> <p>CO2: Study the elastic properties of solids and various elastic moduli with appropriate theory, derivations, and calculations.</p> <p>CO3: Gain knowledge of the methods of attaining low temperature.</p> <p>CO4 Understand the kinetics of transport phenomena in gases.</p> <p>CO5: Understand the concept and consequences and implications of the special theory of relativity.</p> <p>CO6: Discuss the theorems of Moment of Inertia and their applications on different solid bodies.</p> <p>CO7: Delve into the concept of the theorems of the moment of inertia and their applications on various solid bodies.</p> <p>CO8: Formulate the mathematical equation of waves and arrive at the relation between the group and phase velocity of waves.</p>
III	BEDS3PH  Physics III	<p>CO1: Verifies various network theorems and laws using Kirchhoff's laws.</p> <p>CO2: Determine the condition of oscillation in LR, RC, LC, and LCR circuits and the significance of resonance in LCR circuits.</p> <p>CO3: Obtain expressions of magnetic fields due to currents using Biot-Savart and Ampere laws for various shapes of conductors and discuss their applications.</p>

		<p>CO4: Describes the Principle, theory, and applications of a moving coil BG.</p> <p>CO5: Understand the principles of electrostatics mathematically and physically and their application in electromagnetism using vector calculus.</p> <p>CO6: Investigates transverse nature of waves, energy density, pressure and momentum of Electromagnetic waves using vector calculus and mathematical methods.</p> <p>CO7: Discuss the response of LR, CR, and LCR series circuit to the sinusoidal voltage – j operator with the frequency responses.</p> <p>CO8: Understand thermoelectric effects under various methods.</p>
IV	BEDS4PH Physics IV	<p>CO1: Understand Huygens's theory and concept of wavefronts.</p> <p>CO2: Describe interference using coherent sources by division of amplitude and division of wavefront methods.</p> <p>CO3: Explain Fresnel and Fraunhofer diffraction in detail.</p> <p>CO4: Study the principle, production and applications of LASER</p> <p>CO5: Understand the concept of polarization phenomena and double refraction using Huygens explanation.</p> <p>CO6: Appreciates production and detection of linearly , elliptically and circularly polarized light</p> <p>CO7: Explain periodic functions in a series of sine and cosine functions and the determination of Fourier coefficients both in simple and complex form.</p> <p>CO8: Study principle, construction, working and types of optical fibers.</p> <p>Syllabus for</p>
V	BEDS5PH Physics V	<p>CO1: Understand the three basic statistics. CO2: Learn the relativistic mechanics applicable to the microscopic world.</p> <p>CO3: Appreciate Heisenberg's uncertainty principle, Thomson's experiment, and Davisson and Germer's experiment and their implications.</p> <p>CO 4: Explain the Blackbody radiation spectrum, Photoelectric effect, and Compton Effect using the quantum theory of radiation.</p> <p>CO5: Understand the variation of temperature and pressure with altitude.</p> <p>CO6: Describe the dynamics of the atmosphere.</p> <p>CO7: Discuss properties, types, methods of synthesis, and applications of Nanomaterials</p>
VI	BEDS6PH Physics VI	<p>CO1: Explore the stellar classifications and the evolution of stars.</p> <p>CO2: Estimate the luminosity, brightness, mass, and temperature of stars.</p>



		<p>CO3: Understand basic crystal structure and compare various crystal systems.</p> <p>CO4: Distinguish continuous and characteristic X-ray spectra.</p> <p>CO5: Understand the relation between thermal and electrical conductivity based on free electron theory</p> <p>CO6: Discuss the Hall Effect and list its applications.</p> <p>CO7: Provide an in-depth study of intrinsic and extrinsic semiconductors</p> <p>CO8: Appreciates superconductivity and its applications.</p> <p>CO9: Describes special types of diodes, transistor, and their characteristics and applications.</p>
VII	<p>BEDS7PH</p> <p>Physics VII</p>	<p>CO1: In depth understanding of the vector atom model.</p> <p>CO2: Describe the theory of normal and anomalous Zeeman effect based on quantum theory.</p> <p>CO3: Provide a detailed study of pure, rotational, and vibrational spectra of molecules. CO4: Understand the Raman effect to analyze Raman spectra based on quantum mechanics. CO5: Calculate the kinematics of various reactions and decay processes.</p> <p>CO6: Detailed study of radioactive decay and functionality of detectors and accelerators for radioactivity.</p> <p>CO7: Describe various types of nuclear reactions with examples.</p> <p>CO8: Understand elementary particles based on fundamental interactions.</p>
VIII	<p>BEDS8PH</p> <p>Physics VIII</p>	<p>CO1: Understand the properties of operational amplifiers and their applications in amplification.</p> <p>CO2: Describes operational amplifiers as various types of oscillators in detail.</p> <p>CO3: Apply the knowledge of various number systems on logic gates, and a combination of logic and verification of the truth tables.</p> <p>CO4: Realize Boolean theorems and logic gates using universal gates.</p> <p>CO5: Describe the types of magnetic materials and their theories based on classical and quantum mechanical concepts.</p>

#### MATHS

Semester	Course code / Title	Learning outcome: At the end of the course the students will be able to:
I	Maths I	-Exhibit competence in calculating Eigen values and Eigen vectors, and thereby diagonalizing square matrices.

		<ul style="list-style-type: none"> <li>-Apply the Cayley-Hamilton Theorem to compute powers of a given square matrix and inverse of a given square matrix.</li> <li>-Compute successive differentiation of nth derivatives of functions.</li> <li>-Compute definite and indefinite integrals of algebraic and trigonometric functions using formulas and substitution.</li> <li>-demonstrate knowledge of Analytic geometry and its applications in the real world</li> </ul>
II	Maths II	<ul style="list-style-type: none"> <li>-Construct and describe groups. They will learn basic properties of groups. They will understand semigroup and subgroup</li> <li>-Develop the ability to apply differential calculus and integral calculus to significant applied and/or theoretical problems</li> <li>-Develop the ability to solve differential equations using different techniques</li> </ul>
III	Maths III	<ul style="list-style-type: none"> <li>-Understand the proof, statement and simple uses of Lagrange's Theorem.</li> <li>-Understand the types of sequences and its properties.</li> <li>-Derive the different tests to test the convergence of the series.</li> <li>-Applies the knowledge and understanding to find the differentiability and continuity of a given problem.</li> </ul>
IV	Maths IV	<ul style="list-style-type: none"> <li>-Demonstrate familiarity with permutation groups and be able to decompose permutations into 2-cycles.</li> <li>Familiar with Fourier series and their applications and be notionally aware of their convergence.</li> <li>-Laplace transforms is used to simplify calculations in system modeling.</li> <li>-Demonstrate an understanding of solution techniques for second and higher order differential equations; be familiar with qualitative tools for linear equations applications.</li> </ul>
V	Maths V	<ul style="list-style-type: none"> <li>-Analyze and demonstrate examples of Subring, Integral domains, Ideals, Maximal Ideals and quotient rings.</li> <li>-Use the concepts of isomorphism and homomorphism for groups and rings.</li> </ul>

		<ul style="list-style-type: none"> <li>-Compute the derivatives and line integrals of vector functions and learn their applications.</li> <li>-Solve many numerical integration and differentiation problems and appreciate their application for engineering problem solving.</li> </ul>
VI	Maths VI	<ul style="list-style-type: none"> <li>-Able to analyse the methods such as integral transforms, the concept of resolvent, uniqueness theorems, Fredholm theory.</li> <li>-Understanding the line integral of a vector field and knowing how to compute the line integral over various types of paths.</li> <li>- Know how and when to use integral Theorems</li> </ul>
VII	Maths VII	<ul style="list-style-type: none"> <li>-Use computational techniques and algebraic skills essential for the study of systems of linear equations, matrix algebra, vector spaces, Eigenvalues and eigenvectors, orthogonality and diagonalization. (Computational and Algebraic Skills).</li> <li>-Able to work and apply concepts in Second order linear partial differential equations, canonical form for parabolic, elliptic and hyperbolic equations.</li> <li>-Use computational tools to formulate and solve problems of one-dimensional heat and wave equation and two-dimensional Laplace equation using Fourier series.</li> </ul>
VIII	Maths VIII	<ul style="list-style-type: none"> <li>-The student gains competence to understand the operations with complex numbers, use the complex derivatives function, use and operate analytic functions, demonstrate knowledge of integration in the complex plane, use the Cauchy integral theorem and Cauchy integral formula, manipulate and use power series, understand residues and their use in integration, demonstrate the understanding of conformal mappings.</li> <li>The student will be able to appreciate the significance of differentiability for complex functions and be familiar with the Cauchy-Riemann equations.</li> <li>The student will be able to apply problem-solving using complex analysis techniques applied to diverse situations in physics, engineering and other mathematical contexts.</li> </ul>

		Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.
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HISTORY

SEMESTER	COURSE CODE/ PAPER TITLE	LEARNING OUTCOME
I	HISTORY OF INDIA-I BEDA1HI	<ol style="list-style-type: none"> <li>1. To understand the nature of the sources and interpretations of the ancient Indian history.</li> <li>2. Compare and contrast various stages of progress from Indus valley civilization to Vedic age.</li> <li>3. Apply the teachings of Mahavira and Buddha in everyday life.</li> <li>4. Analyse the emergence of Mauryan and Gupta empire.</li> <li>5. Evaluate the cultural contributions of south Indian dynasties.</li> <li>6. Indicate the places of historical importance in map and develop the skill of drawing the India map.</li> </ol>
II	HISTORY OF INDIA -II BEDA2HI	<ol style="list-style-type: none"> <li>1. Examine the importance of sources in medieval Indian history.</li> <li>2. Understand the foundation of Delhi sultanate and socio-political developments from slave dynasty to Lodi dynasty.</li> <li>3. Compare and contrast the administrative reforms Allauddin Khilji and Mahmad Bin Tughlaq.</li> <li>4. Identify the different aspects of Mughal rule.</li> <li>5. Explain the social ,Economic, Cultural condition of India under the Mughal Empire.</li> <li>6. Analyse the rise of the Marathas and the administration of Shivaji.</li> </ol>
III	KARNATAKA SOCIETY, ECONOMY, AND CULTURE. – BEDA3HI	<ol style="list-style-type: none"> <li>1. Examine the rule of Satavahana,Kadamba, Early Chalukyas in Karntaka.</li> <li>2. Analyse the social economic condition of Vijayanagara empire, Bahmani, Adilshahi and Keladi.</li> </ol>

		<ol style="list-style-type: none"> <li>3. Understand Karnataka as a multi religious state through the growth of new religious sects, Jainism, Haridasas, Sufism.</li> <li>4. Identify the literary contributions of Pampa - Vachanas, Dasas, Navodaya movement.</li> <li>5. Outline the Stages of freedom movement in Karnataka.</li> <li>6. Discuss the contemporary issues in Karnataka</li> </ol>
IV	HISTORY AND TOURISM IN INDIA BEDA4HI	<ol style="list-style-type: none"> <li>1. Identify the scope and importance of tourism.</li> <li>2. Understand the development of tourism through the ages.</li> <li>3. Recognise the significance of tourism policies and planning.</li> <li>4. Analyse the role of various organisations in tourism industry.</li> <li>5. Examine the prospects of tourism in Karnataka.</li> </ol>
V	HISTORY OF MODERN INDIA BEDA5HI	<ol style="list-style-type: none"> <li>1. Discuss the advent of Europeans and Resistance movements by Indians.</li> <li>2. Examine the various revenue policies introduced by Britishers in India.</li> <li>3. Analyse the impact of western Education and socio-religious reform movements in the growth of nationalism.</li> <li>4. Describe the phases of freedom struggle.</li> <li>5. Critically evaluate the role of Gandhi in freedom struggle.</li> <li>6. Understand the processes of partition and Independence.</li> </ol>
VI	HISTORY OF EUROPE 1500 -1945 BEDA6HI	<ol style="list-style-type: none"> <li>1. 1.Understand the events of medieval Europe such as geographical discoveries, renaissance.</li> <li>2. Evaluate the impact of French revolution in the history of Europe.</li> <li>3. Identify the role of Napoleon Bonaparte in the history of France.</li> <li>4. Examine the emergence of nationalism and movements for unification in Europe.</li> <li>5. Describe the relationship between Rise of Dictatorships as a root cause for the outbreak of II World War</li> </ol>

VII	INDIA AFTER INDEPENDENCE  BEDA7HI	<ol style="list-style-type: none"> <li>1. Understand the political, economic consolidation and integration of early post-independent Indian nation-state.</li> <li>2. Analyse the emergence of political parties.</li> <li>3. Identify the prominent regional parties.</li> <li>4. Examine the post-modernist movements in India.</li> </ol>
VIII	CONTEMPORARY WORLD  BEDA8HI	<ol style="list-style-type: none"> <li>1. Understand the post world war development such as cold war, emergence of third world countries.</li> <li>2. Analyse the formation of regional organisations.</li> <li>3. Examine the contemporary human rights issues, disarmament and environmental concerns.</li> </ol>

POLITICAL SCIENCE

Semester	Title of the Course	Learning outcome at the end of the course the student teachers will be Able to:
I SEMESTER	CORE CONCEPTS OF POLITICAL SCIENCE	<ul style="list-style-type: none"> <li>• Embrace the Nature, Scope, Importance and approaches to the study of Political Science.</li> <li>• Illuminate the theories of State with respect to Political Science learning and State in the age of Globalization.</li> <li>• Recognize the characteristics of a Sovereign State and Theories of Sovereignty.</li> <li>• Diagnose the sources and schools of Law.</li> <li>• Comprehend the Nature, Kinds and Importance of Power, Authority and Legitimacy.</li> </ul>
II SEMESTER	UNDERSTANDING POLITICAL THEORY	<ol style="list-style-type: none"> <li>1. Envision the theories of Political Science.</li> <li>2. Inspect the theories of Democracy and Challenges to Democracy in the contemporary world.</li> <li>3. Understand the Rights and Duties towards the State.</li> <li>4. Identify the relationship between Justice and Equality in Egalitarian society.</li> </ol>

		<ul style="list-style-type: none"> <li>Analyze the types and features of Imperialism and Neo – Colonialism.</li> </ul>
III SEMESTER	PUBLIC ADMINISTRATION: CORE CONCEPTS	<ol style="list-style-type: none"> <li>Apprehend Scope, Importance of Public Administration and theories of Organization.</li> <li>Comprise the dynamics of Management.</li> <li>Encompass Personnel Administration Meaning and Importance.</li> <li>Recall an understanding of Financial Administration based on readings.</li> <li>Extend the knowledge of trends in Public Administration.</li> </ol>
IV SEMESTER	WESTERN AND EASTERN POLITICAL THOUGHT	<ul style="list-style-type: none"> <li>Encapsulate the Political thoughts of Ancient Greece.</li> <li>Collate Medieval and Modern Political thought of Europe.</li> <li>Concede the Political contributions of Social Contractualists- Thomas Hobbes, John Locke and J.J. Rousseau.</li> <li>Scrutinize the Ideologies of Karl Marx and Lenin.</li> <li>Delineate the Indian Political thoughts of Manusmrithi, Kautilya's Arthasastra and Shanti Parva of Mahabharata.</li> </ul>
V SEMESTER	INDIAN CONSTITUTION – INSTITUTIONAL FRAMEWORK	<ol style="list-style-type: none"> <li>Demonstrate the Institutional framework of Indian Constitution.</li> <li>Traverse the power and functions of Indian Parliament.</li> <li>Examine the power and functions of State Legislature.</li> <li>Explicate the importance of Indian Judicial system.</li> </ol>
VI SEMESTER	INTERNATIONAL POLITICS	<ol style="list-style-type: none"> <li>Elucidate the theories of Idealist, Realist and World Systems.</li> <li>Identify the National Power with National Interest, Formulation and Implementation of Foreign Policy.</li> <li>Apprehend the Nature, Sources, Sanctions of International law and concede the role of Non-governmental Organizations in the promotion of Human Rights.</li> </ol>

		4. Trace the Approaches to International Peace.
VII SEMESTER	MAJOR CONSTITUTIONAL SYSTEMS	<ol style="list-style-type: none"> <li>1. Catalogue the features of Political System of U.K.</li> <li>2. Evaluate the features of Political System of America.</li> <li>3. Recognize the features of Political System of Russia.</li> <li>4. Abridge the features of Political System of Switzerland.</li> </ol>
VIII SEMESTER	INTERNATIONAL INSTITUTIONS AND FOREIGN POLICIES	<ol style="list-style-type: none"> <li>1. Assess the significance of International Institutions.</li> <li>2. Inspect major issues pertaining to International Trade Organizations.</li> <li>3. Extrapolate the essence of Foreign policies of major powers.</li> <li>4. Embellish the Foreign policy of India.</li> </ol>

#### ECONOMICS

Semester	Semester/ Title of the Course	Learning outcome
<b>I</b>	<b>Economics 1- Business Economics</b>	<ul style="list-style-type: none"> <li>- To enable students to understand the Features of Business Economics</li> <li>- To Obtain Decision Making &amp; Planning skills</li> <li>- To Confer the Role of and Responsibilities of Business Economist.</li> <li>- To Know Utility, cost analysis equations and Identify production function mechanism.</li> </ul>
<b>II</b>	<b>Economics II Managerial Economics</b>	<ul style="list-style-type: none"> <li>- To understand Nature &amp; Scope of Managerial Economics,</li> <li>- To Compute Price under different market situations.</li> <li>- To understand mechanism for pricing policy with respect to product life cycle.</li> <li>- To Illuminate the methods of Capital Budgeting.</li> </ul>
<b>III</b>		<ul style="list-style-type: none"> <li>- To make students acquainted with the concept of money</li> </ul>



	<b>Economics III</b> <b>Monetary Economics</b>	<ul style="list-style-type: none"> <li>- To make students understand the basic demand and supply theory of money</li> <li>- To evaluate the functions and working of Central Bank</li> <li>- To analyze the functions of commercial bank.</li> </ul>
IV	<b>Economics III</b> <b>Public Economics</b>	<ul style="list-style-type: none"> <li>– To comprehend the Scope of Public Economics, causes of market failure</li> <li>– To Determine the sources of Public revenue; understand tax system</li> <li>– To find the causes of public expenditure and understand new reforms to control public expenditure</li> <li>– To Elucidate the sources of public borrowing</li> </ul>
V	<b>Economics V</b> <b>Corporate Economics</b>	<ul style="list-style-type: none"> <li>– To increase students' understanding of the administration and analysing of business decision-making problems</li> <li>– To develop students' critical thinking skills and analytical abilities towards corporate planning.</li> <li>– To make students understand the rigours of various economic models and their applications in terms of Recruitment &amp; risk management.</li> <li>– To make students understand how globalization has stretched its tentacles towards the corporate globe.</li> <li>– To study the ethical issues &amp; CSR in the corporate world.</li> </ul>
VI	<b>Economics VI</b> <b>Economics Of Human Resource Management</b>	<ul style="list-style-type: none"> <li>– To enable students to understand an integrated perspective on the role of HRM in modern business &amp; TQM.</li> <li>– To provide insight to plan human resources and implement techniques of job analysis, ability to design, job description and job specifications.</li> <li>– To enable students to understand the competency to recruit, the Ability to train, and appraise the performance of employees, rational design of wage and salary administration &amp; implementation of Employee benefits, Employee Safety and Welfare measures.</li> </ul>

		<ul style="list-style-type: none"> <li>- To identify and appreciate the significance of human rights in HRM.</li> </ul>
<b>VII</b>	<b>Economics VII</b>  <b>Mathematics for Economists</b>	<ul style="list-style-type: none"> <li>- To make students review mathematic tools like simultaneous equations, matrices etc.</li> <li>- To make students appreciate differential calculus as a tool and its relationship with economics.</li> <li>- To analyze market equilibrium conditions and production functions.</li> <li>- To appreciate the utility maximization and production maximization problems.</li> </ul>
<b>VIII</b>	<b>Economics VIII</b>  <b>Statistics for Economists</b>	<ul style="list-style-type: none"> <li>- To make students familiarize from collection of data to presenting the data.</li> <li>- To orient students to understand various measures of central tendency.</li> <li>- To analyze various measure of dispersion.</li> <li>- To appreciate and calculate Indices and time series</li> <li>- To recognize concept of hypothesis and testing of hypothesis.</li> </ul>

#### SOCIOLOGY

<b>Semester</b>	<b>Semester/ Title of the Course</b>	<b>Learning outcome</b>
I	Sociology I	<p>Find out the difference between the sociology and other social sciences</p> <p>Discover the sociological contributes to a social scientific understanding of social reality through its nature and scope.</p> <p>Interpret how the basic concepts of society, its relationship with man and the processes of socialization promotes the positive social interactions and the better social structure through its application in social settings.</p> <p>Implement the role of social institutions and its functions for the welfare of society as well its role which creates the rules and regulations which controls the individual behaviour of human beings.</p> <p>Describe the culture with its different functions and features.</p> <p>How the process of civilization leads the human society with</p>

		its developmental aspects also will be able to explain by the student
II	Sociology II	<p>To make conscious efforts to drive home the relevance and significance of sociology for understanding past and present social institutions.</p> <p>To understand the basic social institution.</p> <p>To understand the process of social institution and the relevance of social institutions in present society.</p> <p>Analyse how numerous sociological events impact their own lives, their families, and communities, and how it impacts the larger society.</p> <p>The student will be able to acquire knowledge about the role of current social institutions.</p>
III	Sociology III	<p>Enhance the define and employ the learned skill of communication in the field of academic as well as social.</p> <p>Able to identify and analyze the role of the mass communication and able to apply the various theoretical perspective of mass communication in research arenas.</p> <p>Evaluate the present role of mass medias and their positive as well as negative contributions in the view of sociological perspectives.</p> <p>Reveal the functions and dysfunctions of mass medias through their gained subject knowledge of mass media communication.</p> <p>Describe the effects of mass communication on society.</p>
IV	Sociology IV	<p>-Debate on how Anthropology is related with the excavation of human culture and also its role for the gradual evolutionary progress of humankind.</p> <p>-Describe the role of society and its relationship with the culture and civilization. They also will be able to explain how the human biological diversity has had the dominant role of the human cultural as well as their environment.</p> <p>Improve the knowledge of the skill of briefing the practices of marriage, family and kinship through the different ages of human existence.</p> <p>-Enhance the contribution of religion and its role which controls the attitude and action of the human beings through the ages. They will be able to explain the different forms of religion practices which were followed by the tribal societies.</p> <p>-Describe Forms of religion in tribal and peasant societies.</p>
V	Sociology V	<p>- Able to define and employ the learned knowledge of medical sociology in the field of society.</p> <p>-Enhance the identify and analyse the nature of health in terms of diseases, caste, culture, region as well as the sociological factors.</p> <p>- Improve the knowledge of able to appraise the present situation of hospital relations in terms of patient treatment, cost of surgery, and relationship with the patients. Able to examine the emergence of different diseases regarding its emergence and impacts in the contemporary society. CLO4. -</p>

		Examine and reveal the functions of WHO and UN related with health, not only these able to appraise the current public health systems of the government. -Gain the knowledge of medical sociology.
VI	Sociology VI	-Able to define and employ the learned knowledge of medical sociology in the field of society. -Enhance the identify and analyse the nature of health in terms of diseases, caste, culture, region as well as the sociological factors. -Improve the knowledge of able to appraise the present situation of hospital relations in terms of patient treatment, cost of surgery, and relationship with the patients. Able to examine the emergence of different diseases regarding its emergence and impacts in the contemporary society. -Examine and reveal the functions of WHO and UN related with health, not only these able to appraise the current public health systems of the government. -Gain the knowledge of medical sociology.
VII	Sociology VII	-Able to define and describe the role and importance of social research in sociology and its different steps which promote quality research. -Know the functions of social research with its different stages, types and designs which help to build strong social research with great outcomes. -Enhance the ability to reveals the importance of scaling techniques in social research with its reliability and validity. -Describe the knowledge of computers are being used in the social research as well as the application of statistical packages. -Observe the knowledge of Classification and Tabulation of data.
VIII	Sociology VIII	Able to define and identify the social problems with its causes and stages Gained knowledge of social problems, by that they can create the different approaches and it will be employed by them in the society. Analyze the fundamental factors of different social problems and, they will be able to classify the cause and effect.

## COURSE OUTCOMES : EDUCATION

### 1.Nature and Purpose of Education

Course outcomes:

After completion of the course, student-teachers will be able to:

- Gain a broad perspective of education
- Understand the normative and cognitive aspects of education
- Understand the aims and purposes of education from multiple perspectives

- Study different thinkers' conceptualizations of education
- Engage with the role of education in promoting values
- Appreciate that education is a complex and contested domain of study and practice

## **2. ICT in Education**

- Situate the role of ICT in education within broader aspirations of the society.
- Develop a critical understanding of ICT in Education in relation to building inclusive societies.
- Appreciate the role of participation and knowledge sharing in virtual communities.
- Understand the role of ICT in administrative and academic support systems.

## **3. Critical Reading and Expository Writing**

After completion of the course, student-teachers will:

1. Develop the skill of critical reading by way of engaging with a variety of texts
2. Analyse what they read and share the readings in different forms
3. Develop the skill of writing for different purposes
4. Become aware of their own thinking process

## **5. Constitution of India**

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### **6. Childhood, Adolescence and Growing Up**

1. Understand theories of child development and socio-cultural constructs of childhoods & adolescence
2. Appreciate how the identity of a child/adolescent is shaped by representations of gender, class, caste in society
3. Interpret the lived experiences of children and adolescents vis-à-vis the universalistic normative notions of childhood and adolescence
4. Develop an understanding of the issues relating to marginalization, difference and diversity
5. Evaluate the role of teachers in terms of the needs of diverse learners in school

### **7. Language Across Curriculum**

After completion of the course, student-teacher will be able to

1. Develop sensitivity towards the language background of students
2. Appreciate the nature of classroom discourse and develop strategies for use of oral language
3. Develop an understanding of the nature of reading comprehension in different content areas

### **8. Health and Physical Education**

After completion of the course, student-teacher will be able to:

1. Understand the concept of holistic health, its various dimensions and determinants and the importance of sports and yoga for development of holistic health
2. Develop positive attitude towards health as individual and be collectively responsible to achieve it
3. identify students' health status, health problems and take up remedial measures
4. Becoming aware of the rules of safety in hazardous situation (illness, accident and injury) and ability to use first aid measures
5. Learning to form right habits about exercise, games and sports, sleep, rest and relaxation
6. Acquiring skills for teaching physical fitness, correct postural habits and activities for their development
7. Creating interest for the practice of yogasanas and meditations through which they learn the skills/art of self-control, concentration, peace and relaxation to avoid ill effects of stress, strain and fatigue of routine life
8. Understanding various policies and programmes related to health, physical education and *yoga*; and
9. Understanding the process of assessment of health and physical fitness.

#### **9. Computer Literacy**

After completion of the course, student-teacher will be able to:

1. Learn the use of various educational tools for creating digital resources in different subjects
2. Understand possibilities of integrating ICT in teaching learning for different subjects
3. Explore the possibilities of using ICT in assessment activities.

#### **10. Creating an Inclusive School**

After completion of the course, student-teacher will be able to:

1. Understand the national commitments towards the education of children with diverse needs.
2. Develop an understanding of the concept, principles and models of inclusive education in the context of education for all.
3. Identify and address diverse needs of all learners.
4. Familiarise with the trends and issues in inclusive education
5. Develop an understanding of the role of facilitators in inclusive education.
6. Identify and utilise existing resources for promoting inclusive practice.

#### **11. PCK – I Part 1**

##### **Phy science**

After completion of the course, student-teacher will be able to:

1. Analyse one's own notions of science and gaining an understanding of the meaning, nature and scope of scientific knowledge and method
2. Understand the purposes of teaching science and its place in the school curriculum
3. Develop an awareness of the aims of science education
4. Analyse relevance, limitations and rationale of school science curriculum.

##### **English**

- Acquire an understanding of the nature and structure of English language and its component skill.

- Acquire the theoretical knowledge of different methods and approaches and apply them in their classroom teaching.
- Develop core skills and reference skills among them.
- Understand the role and importance of language.
- Appreciate different forms of literature and inculcate the same in students teachers

### Kannada

1. ಕನ್ನಡ ವ್ಯಾಕರಣ ಮತ್ತು ಛಂದಸ್ಸು ಅಲಂಕಾರಗಳ ಮೂಲ ಸ್ವರೂಪದ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳುವರು.
2. ಕಲಿಕೆ ಸಂವಹನ ಮತ್ತು ಭಾಷಾ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಷೆಯು ನಿರ್ವಹಿಸುವ ವಿವಿಧ ರೀತಿಯ ವಾಕ್ಯಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವರು.
3. ಶಿಕ್ಷಣದಲ್ಲಿ ಮಾತೃ ಭಾಷಾ ಅಭಿವೃದ್ಧಿಯ ಬಗ್ಗೆ ವಿಮಶಾತ್ಮಕ ಚಿಂತನೆಯನ್ನು ಬೆಳೆಸಿಕೊಳ್ಳುವರು.
4. ಮಾತೃಭಾಷೆ ಬೋಧನೆಯ ಗುರಿ ಮತ್ತು ಉದ್ದೇಶಗಳನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವರು.
5. ಭಾಷಾ ಬೋಧನೆಯನ್ನು ಮನೋವೈಜ್ಞಾನಿಕ ನಿಯಮಗಳ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಚಿಂತಿಸುವರು.

### **12. ICT Mediation**

After completion of the course, student-teacher will be able to:

1. Learn the use of various educational tools for creating digital resources in different subjects
2. Understand possibilities of integrating ICT in teaching learning for different subjects and for creating inclusive classrooms.
3. Evaluate the use of ICT resources in various stages of teaching learning in terms of suitability of content, pedagogic appropriateness and facilitating learning
4. Explore the possibilities of using ICT in assessment activities.

### **13. Learning and Teaching**

After completion of the course, student-teacher will be able to:

1. Understand the processes of learning
2. Understand the needs of the learner
3. Appreciate teaching as a complex activity
4. Analyse teaching in diverse classrooms
5. Evaluate teaching as a profession

### **14. PCK I – Part 2**

#### **Physical science:**

After completion of the course, student-teacher will be able to:

1. Understand key concepts related to secondary school physical science
2. Critically analyse the secondary school physical science curriculum
3. Explore children's ideas about physical phenomenon and properties of matter
4. Plan for teaching physical science – selecting appropriate methods, classroom interactions etc
5. Identify, design and use resources for teaching physical science
6. Develop appropriate assessment processes in physics and chemistry

### **15. Arts and Craft RR**

At the completion of the course, students will be able to:

- Distinguish between different art forms and discern the impact of Art forms on the human mind
- Engage with different Art forms, through exploration, experience and free expression
- Integrate different Art forms across school curriculum at secondary level
- Build their awareness of the rich cultural heritage of artists and artisans in Indian and global contexts.

### **16. Environmental Studies**

#### **17. Contemporary India and Education**

At the completion of the course, students will be able to:

1. Understand the concept and context of universalization of school education
2. Appreciate the need to maintain the pluralistic fabric of Indian Society
3. Recognise that diversity exists at many levels and the need for inclusive education to meet diverse needs
4. Understand the constitutional provisioning, the legal and policy imperatives in meeting the needs of marginalized children
5. Understand the crucial role of teachers in universalization of school education and in making inclusive education a reality

#### **18. . Optional course : Guidance and counselling**

At the completion of the course, students will be able to:

1. Understand the need and importance of guidance and counselling.
2. Familiarize student teachers with types of guidance and counselling.
3. Develop awareness among the student teachers about the tools & techniques of guidance.
4. Acquaint the student teachers about the guidance and counselling services in the educational institutions.
5. Develop counselling skills in the student teachers.
6. Develop understanding about the role and professional ethics of the counsellor.

#### **19. Optional course: Education for peace**

1. Understand the concept of peace education.
2. Recognize the significance of peace education in National development.
3. Examine the relationship between Peace and Education.
4. Appreciate the contributions of great educational philosophers.
5. Imbibe the knowledge, attitudes and skills needed to achieve and sustain a global culture of peace.

#### **20. Assessment for Learning**

1. Appreciating the role of assessment in learning



2. Understanding the purposes and forms of assessment
3. Analysing ways and means of making assessment inclusive
4. Developing a critical understanding of the issues in assessment
5. Creating a range of assessment tools and reports on assessments

## **21. PCK II – Part 1**

### Objectives

1. Understand the need of social science
2. Develops instructional objectives related to various methods strategies of teaching social science
3. Develop skills in different devices and techniques for teaching social science.
4. Develop skills in preparing lesson plans and instructional material for teaching and learning process of social sciences.
5. Develop the spirit of civic sense.
6. Identify the alternative ways of approaching content organization in social sciences.
7. Apply the knowledge of social science in daily life.
8. Develop skill in collect and interpret the geographical and social data in the form of table, charts, graphs etc.

## **22. EPC5 – Theatre in Education**

### Objectives

1. Providing a theoretical background on the relation between education and theatre
2. Realising one's own potential for self-enhancement through theatre in education
3. Recognising the importance of group work and socialisation
4. Developing organisational skills, interpersonal relationships and discipline
5. Making linkages among various art forms on the one hand and between theatre and school subjects

## **23. SDC3 – Life Skills**

### At the completion of the course, students will be able to:

- 1. Build and sustain effective interpersonal relationships using social life skills**
- 2. Achieve progressive results in their life goals using thinking life skills**
- 3. Establish emotional resilience against crises by using coping life skills**

## **24. 2FC10 – Knowledge and Curriculum**

### Objectives of the course:

1. Understand rudimentary epistemological propositions
2. Understand the basic concepts and processes relating to curriculum development
3. Appreciate the complexities and the problems of curriculum development
4. Analyse text books and related educational materials in the context of aims and objectives of education
5. Recognise the impact of hidden curriculum

6. Design culturally sensitive curriculum implementation plans

## **25. HC11 – Development and Management in School Education**

Objectives of the course:

1. Understand primary, secondary, Higher Secondary.
2. Understand structure of educational administration at the state level.
3. Identify challenges and strategies related to imparting quality education at the secondary stage.  
Understand importance and status of open school, distance education and types of school.  
Develop managerial skills required in schools.
4. Develop and insist Total Quality Management in schools.
5. Appreciate features of Indian constitution and the policies of education.
6. Understand the management of school education by Government and Private agencies.

## **26. HC12 – Action Research**

After completion of the course student teachers will:

- Understand the concept and types of research –applied basic and action research.
- Be familiar with the concept of Action research in Education.
- Identify the suitable problems for Action Research.
- Get acquainted with the various steps of conducting action Research.
- Understand and use descriptive statistical techniques in action Research
- Acquire the skills of planning, executing, evaluating and reporting action research.

## **27. SC4 – PCK II – Part 2 social science**

Objectives: After completion of the course student teachers will:

1. Develop skills in preparing and using of resource material in social sciences
2. Acquire knowledge and skills about extended curricular activities
3. Prepare various enrichment activities
4. Critically analyse the text book and question papers of secondary school social science.

## **28. EPC6 – Pre- Internship Activities**

## **29. FC3 – Indian History, Culture and Diversity**

Objectives: After completion of the course student teachers will:

1. gain a better understanding and comprehension of Indian culture, diversity and society.
2. Have a healthy respect for the rich diversity in Indian society and culture.
3. understand the problems of rural society.
4. develop the secular values of tolerance, communal amity and peaceful co- existence.

5. address the contemporary challenges before Indian society like communalism, ethnocentrism and gender discrimination.
6. Identify the key role to play in the promotion of national integration, and in promoting the unity and integrity of the country.

### **30. HC13 – Gender, School and Society**

The course will enable the student teachers to -

1. develop basic understanding and familiarity with key concepts-gender, gender bias, gender stereotype, empowerment, gender parity, equity and equality, patriarchy and feminism and transgender.
2. know about policies, plans and schemes of the government for addressing all forms of disparities and inequalities existing in the society
3. learn about gender issues in school, curriculum, textual materials across disciplines, pedagogical processes and its intersection with class, caste, religion and region; and
4. understand the need to address gender based violence in all social spaces and evolve strategies for addressing it.

### **31. School Internship Programme**

This course will enable the student teachers

1. to facilitate student learning by creating authentic learning situations; prepare school development plan in collaboration with local community;
2. to use local resources, including material and local knowledge in teaching learning process;
3. to integrate ICT in teaching learning process;
4. to respect diversity among learners and seek to promote learning of all;
5. to use alternative assessment tools and involve students in assessment process;
6. to adapt teaching learning strategies and/or use various teaching learning strategies to address diversity among learners, including cultural and learning needs;
7. To promote holistic approach to student assessment and organization of learning environments; and bring out pedagogical innovations in promoting quality of learning

### **32. HC14 – Education and National Concerns**

Develop insight and strategies about the process of Population and Environmental Education.

1. Develop knowledge and skills on the concept, process, ways & means of sustainable development.
2. Understand the concepts of HIV/AIDS, clarify the myths and misconceptions related to HIV/AIDS.
3. Understand the meaning, importance and develop strategies of Peace & Multicultural Education.
4. Understand the historical backdrop of Universal Declaration of Human Rights.
5. Develop sensitivity and skills in conducting appropriate scholastic and co-scholastic activities to promote human rights culture among students.