B.Sc. Botany Programme Outcomes (PO' s)

PO1. Understanding of Plant Diversity and its importance in the maintenance of ecological balance.

PO2. Students learn to carry out practical work, in the field and in the laboratory, interpreting plant morphology and anatomy, Plant identification, Vegetation analysis techniques.

PO3. Apply the knowledge of basic science, life sciences and fundamental process of plants.

PO4. Apply modern techniques and instruments for Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological studies of plants with an understanding of the applications in human life.

PO5. Apply the knowledge gained from the studies for the upliftment of society via addressing health, environmental issues, food scarcity etc.

Detail of Courses

DISCIPLINE SPECIFIC COURSES (DSC)

1. Biodiversity (Microbes, Algae, Fungi and Archegoniates) BOTA 101
2. Plant Ecology and Taxonomy BOTA 102
3. Plant Anatomy and Embryology BOTA 201
4. Plant Physiology and metabolism BOTA 202

DISCIPLINE SPECIFIC ELECTIVE (DSE)

1. Economic Botany and Biotechnology BOTA 301
2. Analytical Techniques in Plant Sciences BOTA 302
3. Cell and Molecular Biology BOTA 303
4. Bioinformatics BOTA 304
5. Genetics and Plant Breeding BOTA 305

Ability Enhancement Compulsory Courses

1. English/Hindi/SKT
2. Environment Sciences

Skill Enhancement Courses in Botany

1. Biofertilizers BOTA 203
2. Gardening and Floriculture BOTA 204
3. Medicinal Botany and Ethnobotany BOTA 306
4. Mushroom Cultivation Technology BOTA 307

DSC: Botany Paper I
Biodiversity (Microbes, Algae, Fungi and Archegoniates)
(BOTA 101) (Credits: Theory-4, Practicals-2)

Course Outcomes:

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

1. Understand the structure, characters and significance/economic importance of Microbes, algae, fungi, bryophytes, pteridophytes and gymnosperms.
2. Understand the ecological and economic significance of lichen

Practical (BOTA 101PR)

the students will be able to

1. understand the structure and characters of microbes, algae, fungi, lichens, bryophytes, pteridophytes and gymnosperms through slides (temporary/permanent slides), models, charts, ultra micrographs
2. learn the methods of Gram staining.
3. learn how to prepare temporary and permanent slides.

DSC Botany – Paper II
Plant Ecology and Taxonomy
(BOTA 102) (Credits: Theory-4, Practicals-2)

Course Outcomes:

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

1. Understand the definition of ecology, different ecological factors(soil, water, lght)

2. Understand about xerophytes and hydrophytes.
3. Understand plant communities, ecosystem.
4. Understand botanical nomenclature and plant classification.

Practical (BOTA 101PR)

the students will be able to

1. Understand about instruments used to measure microclimatic variables.
2. Understand morphological adaptations of hydrophytes and xerophytes.
3. learn the methods to study herbaceous vegetation.
4. Study vegetative and floral characters of twelve families and describe plant in technical terms.

DSC Botany – Paper III
Plant Anatomy and Embryology
(BOTA 201) (Credits: Theory-4, Practicals-2)

Course Outcomes:

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

1. have knowledge regarding anatomy equipped the students to identify different types of tissues and make them able to correlate their physiology in a better away.
2. understand how different plant tissue evolve and modify their structure and functions with respect to their environment.
3. have Knowledge regarding embryology make them understand how reproduction play significant role in defining population structure, natural diversity and sustainability of ecosystem in a better way.

Practical (BOTA 201PR)

the students will be able to

1. have knowledge about double staining method for permanent slide preparation of monocots and dicots.
2. study floral characters of plants, pollination methods and seed dispersal adaptations and mechanisms.

DSC Botany – Paper IV
Plant Physiology and Metabolism (BOTA 202)
(Credits: Theory-4, Practicals-2)

Course Outcomes:

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

1. Know about the plant water relations; requirement of mineral nutrition for plant growth and translocation in phloem.
2. Understand the process of Photosynthesis, Respiration, enzymes, Nitrogen metabolism and plant growth regulators.
3. Know about the plant response to light and temperature.

Practical (BOTA 202 PR)

the students will be able to

1. determine osmotic potential of plant cell; demonstration of transpiration; calculate stomatal index and demonstrate the activity of catalase.
2. study O2 evolution in photosynthesis; rate of respiration; separation of photosynthetic pigments and determine RQ.

SKILL ENHANCEMENT COURSE
Biofertilizers (BOTA 203)
(Credits 4)

Course Outcomes:

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

1. have knowledge regarding fertilizers and biofertilizers, advantages and disadvantages, *Rhizobium, Actinorrhizal Symbiosis, Azospirillum, Azotobacter* and Phosphate Solubilizing Organisms.
2. have Knowledge regarding Cyanobacteria, Mycorrhizal Association and Organic Farming.

SKILL ENHANCEMENT COURSE
Gardening and Floriculture
(BOTA 204)
(Credits 4)

Course Outcomes:

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

1. have knowledge regarding Landscape Gardening and Floriculture, Gardening operations, Garden Designs, Principles, Types and Features and Propagation of Garden Plants
2. have Knowledge regarding Ornamental Plants, Commercial Floriculture and Post Harvest Management

Discipline Specific Elective Botany
Economic Botany and Biotechnology
(BOTA 301)
(Credits: Theory-4, Practicals-2)

Course Outcomes:

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

1. Know about the cultivated plants, cereals, pulses, vegetables, spices, beverages, oil, sugar, fiber yielding plants and medicinal plants.
2. Know about tissue culture techniques, transgenic plants, DNA finger printing, blotting techniques, molecular DNA markers, DNA sequencing. PCR, ELISA, Hybridoma and Human gene therapy.

Practical (BOTA 301PR)

the students will be able to

1. study some economically important plants.
2. familiarize with basic equipment used in tissue culture and equipments used in PCR, Blotting techniques and PAGE with the help of photographs or videos.

Discipline Specific Elective Botany
Cell and Molecular Biology
(BOTA 303)
(Credits: Theory-4, Practicals-2)

Course Outcomes:

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

1. Know about the microscopy techniques, cell, cell organelles, cell membranes and cell cycle.

2. Know about DNA, replication, RNA, transcription and regulation of gene expression.

Practical (BOTA 303PR)

the students will be able to

1. study prokaryotic cells, cell organelles, mitosis, meiosis, membrane permeability and plasmolysis.
2. measure the cell size, study the structure of nuclear pore complex, DNA packaging , special chromosomes (polytene & lampbrush), karyotype and ideogram.

SKILL ENHANCEMENT COURSE
Medicinal Botany and Ethnobotany
(BOTA 306)
(Credits 4)

Course Outcomes:

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

1. Know about the Traditional Systems of Medicine, Ethnobotany, Plants Used by the Tribals, Methodology of Ethnobotanical Studies.

2. Know about Role of ethnobotany in modern Medicine, Role of ethnic groups in conservation of plant genetic resources, Ethnobotany and Legal Aspects

SKILL ENHANCEMENT COURSE
Mushroom Cultivation Technology
(BOTA 307)
(Credits 4)

Course Outcomes:

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

1. Know about the mushrooms, cultivation technology and Cultivation practices of *Agaricus bisporus*, *Pleurotus* sp. and *Volvoriella volvacea*.

2. Know about mushroom storage, food preparation, diseases and pests of mushrooms.

DEGREE PROGRAM : BSc with ZOOLOGY

PROGRAM SPECIFIC OUTCOMES (PSOs)

After successful completion of this course , the students will be able to :-

PSO 1. Understand the nature and basic concepts of animal diversity, comparative anatomy of vertebrates , developmental biology of vertebrates, physiology , biochemistry, genetics , evolutionary biology, medical diagnostics, apiculture, animal biotechnology, reproductive biology, sericulture and aquarium fish keeping.

PSO 2. Have knowledge about the diversity of animals and their distribution in different habitats of the world.

PSO 3. Have information about morphology, anatomy , physiology and histology of animals.

PSO 4. Gain knowledge about the importance of conservation of threatened animal species.

PSO 5. Have understanding about the adaptations of animals to different habitats and their evolutionary relationships.

PSO 6. Develop ability in application of acquired knowledge to applied zoology for making a self-reliant nation.

PSO 7. Have knowledge about skill development courses like beekeeping, silkworm rearing and aquarium fish keeping which will help them to entrepreneurship and become self-sufficient economically.

PSO 8. Gain knowledge about the research methodologies , effective communication, presentation and problem solving skills.

PSO 9. To evaluate and identify their own values, beliefs and actions in relation to social and professional standards of ethics and their impacts on the biosphere.

PSO 10. Understand the importance of population control, harms of overexploitation of natural resources and benefits of sustainable development.

PSO 11. Have knowledge about various job opportunities in the field of zoology and can pursue a career according to their own potentials, skills and interests.

COURSE OUTCOMES (COs)

FIRST YEAR

THEORY Course / Paper I : ANIMAL DIVERSITY, ZOOL 101 TH, Discipline Specific Course (DSC), Credits 4.

After successful completion of the course , the students will be able to :-

CO 1. Understand the taxonomy and classification of the whole animal kingdom into various categories / ranks of classification such as phylum, class, order, genus and species etc.

CO 2. Have knowledge about taxonomic position, identification and characters of animals belonging to different species.

CO 3. Understand the division of invertebrates into 9 major phyla as protozoa, porifera, coelenterata, platyhelminthes, nemathelminthes, annelida, arthropoda, mollusca and echinodermata.

CO 4. Have knowledge among invertebrates about the locomotion in protozoa, canal system in porifera (sycon), polymorphism in coelenterata, life history of tapeworm (platyhelminthes), life history and parasitic adaptations in ascaris (nemathelminthes), metamerism in annelida, vision in arthropoda, metamorphosis in insects (arthropoda), torsion in mollusca and water vascular system in echinodermata.

CO 5. Understand the subdivision of phylum chordata into lower chordates (Protochordates) and higher chordates (Euchordates) with 7 major classes such as cyclostomata, chondrichthyes, osteichthyes, amphibia, reptilia, aves and mammalia.

CO 6. Understand among vertebrates about osmoregulation in fishes (pisces), parental care in amphibia, poisonous & non-poisonous snakes. biting mechanism in snakes (reptiles), flight adaptations in birds (aves) and origin of mammals.

PRACTICAL Course / Paper 1 : ANIMAL DIVERSITY , ZOOL 101 PR , Discipline Specific Course (DSC) , Credits 2.

After successful completion of course, the students will be able to:-

CO 1. Learn the identification of animals including invertebrates and chordates from study of specimens, models, charts and slides in zoology lab.

CO 2. Learn to make the diagrams, write classification and unique characters of animals in a practical manual of each course.

CO 3. Learn to make a project work on fauna / diversity of animals in a particular area.

THEORY Course / Paper 2 : ZOOL 102 TH , COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES Discipline Specific Course (DSC) , Credits 4.

After successful completion of course, the students will be able to:-

CO 1. Have knowledge about the comparative account of vertebrates from class cyclostomata to mammalia.

CO 2. Understand various systems of vertebrates : derivatives & glands of integumentary system; evolution of visceral arches; alimentary canal & associated digestive glands; respiratory organs- gills, lungs, air sacs & swim bladder ; evolution of heart & aortic arches; succession of kidneys & evolution of urinogenital ducts; comparative account of brain; and types of receptors / sense organs.

CO 3. Gain knowledge about early embryonic development in vertebrates : gametogenesis (mammals), vitellogenesis (birds), types and mechanism of fertilization.

CO 4. Understand early development in fog and human: structure of gametes (ovum & sperm), patterns & types of cleavage, blastulation, gastrulation (types of morphogenetic movements), fate maps and fate of germ layers.

CO 5. Have knowledge about late embryonic development in vertebrates : implantation of placenta in humans, formation & functions of human placenta, types of placenta, metamorphosis in frog and its hormonal regulation.

CO 6. Understand about control of development including intercellular communication, cell movements and cell death.

PRACTICAL Course / Paper-2 : COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES, ZOOL 102 PR, Discipline Specific Course (DSC), Credits 2.

After successful completion of course, the students will be able to:-

CO 1. Identify and have practical knowledge of disarticulated bones / skeletons of frog and rabbit ; and carapace & plastron of tortoises.

CO 2. Identify and have knowledge of whole mounts / sections of permanent slides of developmental stages of frog : cleavage, blastula, gastrula, neurula, tail bud stage, external gill stage and internal gill stage.

CO 3. Identify and have knowledge of different types of placenta with the help of slides / photomicrographs.

CO 4. Learn to make project work on human placenta with help of ultrasound scans.

CO 5. Identify and have knowledge of gametes (sperm and ovum) of frog / rat / human with the help of slides / photomicrographs.

SECOND YEAR

THEORY Course / Paper 1: PHYSIOLOGY AND BIOCHEMISTRY , ZOOL 201 TH , Discipline Specific Course (DSC) , Credits 4.

After successful completion of course, the students will be able to:-

CO 1. Have knowledge about the physiology of nervous system, muscular system, digestive system, respiratory system, excretory system, cardiovascular system, reproductive system and endocrine system.

CO 2. Understand about the structure of nerve fiber / neuron, skeletal muscle fiber, nephron / uriniferous tubule, heart, thyroid gland , pituitary gland, adrenal gland, parathyroid gland and pancreas.

CO 3. Gain knowledge about origin and propagation of nerve impulse; mechanism & molecular / chemical basis of muscle contraction; digestion & absorption of various types of food in alimentary canal with hormonal control ; transport of gasses (oxygen & carbon dioxide) in blood, respiratory volumes & capacities; mechanism of urine formation, counter-current mechanism; composition of blood, origin and conduction of cardiac impulse & cardiac cycle; physiology of male & female reproduction with hormonal control ; and functions of endocrine glands.

CO 4. Have knowledge about metabolism of carbohydrates : glycolysis, kreb cycle, pentose phosphate pathway, gluconeogenesis, glycogenolysis and electron transport chain.

CO 5. Have knowledge about metabolism of lipids: oxidation of fatty acids & glycerol.

CO 6. Have knowledge about metabolism of proteins : transamination, deamination and urea cycle.

CO 7. Understand the properties of enzymes, mechanism of action, inhibition and regulation.

PRACTICAL Course / Paper 1: PHYSIOLOGY AND BIOCHEMISTRY , ZOOL 201 PR , Discipline Specific Course (DSC) , Credits 2.

After successful completion of course, the students will be able to:-

CO 1. Learn the methods of preparation of temporary slides : hemin crystals & hemochromogen crystals.

CO 2. Identify the histological sections of permanent slides : pituitary gland, thyroid gland, adrenal gland, pancreas, spinal cord, duodenum, lung, liver, kidney, bone and cartilage.

CO 3. Learn the qualitative tests for identification of carbohydrates: glucose, fructose, sucrose, lactose and starch.

CO 4. Learn the estimation of proteins by Lowry's method.

CO 5. Learn the methods of knowing action of salivary amylase on substrate under optimal conditions and also effects of change in pH & temperature on activity of enzymes.

THEORY Course / Paper 2 : GENETICS AND EVOLUTIONARY BIOLOGY , ZOOL 202 TH , Discipline Specific Course (DSC) , Credit 4.

After successful completion of course, the students will be able to:-

CO 1. Understand about the laws of genetics : molecular basis, Medelian inheritance, modifications of Medelian inheritance / non-Mendelian inheritance- complementary genes, supplementary genes, inhibitory genes, epistasis, codominance , incomplete dominance, multiple alleles, lethal alleles & pleiotropy; extrachromosomal inheritance; and sex-linked inheritance.

CO 2. Gain knowledge of linkage, crossing over and chromosomal mapping.

CO 3. Have knowledge of types of mutations: chromosomal mutations (structural and numerical) ; gene mutations (transition, transversion & frameshift).

CO 4. Understand the types of sex determination.

CO 5. Have knowledge about origin & evolution of life : history of life, theories of evolution (Lamarckism, Darwinism and Neo-Darwinism) ; evidences of organic evolution (morphological ,

anatomical, embryological, paleontological , biochemical, cytological and taxonomical); and types & dating of fossils.

CO 6. Gain knowledge about processes of evolutionary change : organic variations, isolating mechanisms, types of natural selection and artificial selection.

CO 8. Understand biological species concept and modes of speciation; principles of evolution including microevolution & macroevolution.

CO 9. Have knowledge of extinction: causes, types, mass extinction and role of extinction in evolution.

PRACTICAL Course / Paper 2: GENETICS AND EVOLUTIONARY BIOLOGY, ZOOL 202 PR , Discipline Specific Course (DSC) , Credits 2.

After successful completion of course, the students will be able to:-

CO 1. Understand the laws of Mendel and non-Mendelian interactions; and verification of results with chi square test.

CO 2. Have knowledge of linkage, recombination and gene mapping.

CO 3. Gain knowledge about human karyotypes including both normal & abnormal types.

CO 4. Understand the evidence of evolution : fossil evidence with the help of models / pictures; and homologous & analogous organs from specimens / pictures.

CO 5. Have knowledge about evolutionary history: phylogeny of horse with diagrams / cut outs of limbs and teeth of horse ancestors ; and Darwin's finches with diagrams / cut outs of beaks of different species.

CO 6. Learn to make a project report on a visit to the natural history museum.

THIRD YEAR

THEORY Course / Paper 1: ANIMAL BIOTECHNOLOGY , ZOOL 301 (B) TH , Discipline Specific Elective (DSE) , Credits 4.

After successful completion of course, the students will be able to:-

CO 1. Understand the concept and scope of biotechnology: role in food, medicine, waste management, primary & secondary metabolites, vaccines and monoclonal antibodies etc.

CO 2. Have knowledge about various types of cloning vectors: plasmids, cosmids, phagemids, MAC, BAC, YAC and expression vectors etc.

CO 3. Gain knowledge about types of restriction enzymes; transformation techniques ; and construction & screening of genomic and cDNA libraries.

CO 4. Understand about types of molecular biology techniques : blotting techniques (southern, northern and western); DNA sequencing methods; Polymerase Chain Reaction / PCR; DNA fingerprinting; and DNA microarray techniques.

CO 5. Understand about the genetically modified organisms (GMOs): cloned & transgenic animals with methods of production and applications ; and transgenic plants with their types, production methods and applications.

CO 6. Have knowledge about: cell / tissue culture techniques and their applications (primary & secondary) ; molecular diagnosis of genetic diseases ; recombinant DNA techniques in medicine (production of insulin) ; and gene therapy.

PRACTICAL Course / Paper 1: ANIMAL BIOTECHNOLOGY, ZOOL 301 (B) PR , Discipline Specific Elective (DSE) , Credits 2.

After successful completion of course, the students will be able to:-

CO 1. Learn the methods of: genomic DNA isolation from E.coli ; and plasmid DNA isolation (pUC 18/19) from E.coli.

CO 2. Learn the methods of : restriction digestion of plasmid DNA; construction of circular and linear restriction maps from the data provided; and calculation of transformation efficiency from the data provided.

CO 3. Learn the methods of molecular biology techniques : southern blotting, northern blotting, western blotting, DNA sequencing , PCR (polymerase chain reaction) and DNA fingerprinting.

CO 4. Learn to make project work on animal cell culture / other relevant topics from the coursework.

THEORY Course / Paper 2 : REPRODUCTIVE BIOLOGY , ZOOL 302 (C) TH , Discipline Specific Elective (DSE) , Credits 4.

After successful completion of course, the students will be able to:-

CO 1. Understand about the endocrinology of reproduction : male and female gonadal hormones; mechanism and regulation of hormonal action; hypophyseal-gonadal axis; development & differentiation of gonads and genital ducts; and mechanism of sex differentiation.

CO 2. Gain knowledge about the functional anatomy of male reproductive system: outline and histology of male reproductive system (rat and human) ; spermatogenesis; androgen synthesis; hormonal regulation; accessory glands; sperm transportation and maturation.

CO 3. Have knowledge about the functional anatomy of female reproductive system : outline and histology of female reproductive system (rat and human); reproductive cycles (rat and human) and their regulation; synthesis, secretion and regulation of female sex hormones; ovulation, & corpus luteum formation; ovum transport and sperm transport in female genital tract; fertilization and implantation; mechanism and regulation of gestation; and parturition and lactation.

CO 4. Understand about reproductive health: causes of infertility in male and female; diagnosis and management ; assisted reproductive techniques -IVF, ET, EFT, IUT, ZIFT, GIFT, ICSI, PROST; and modern contraceptive technologies.

CO 5 . Have knowledge about demographic terms used in family planning.

PRACTICAL Course / Paper 2: REPRODUCTIVE BIOLOGY , ZOOL 302 (C) PR , Discipline Specific Elective (DSE), Credits 2.

After successful completion of course, the students will be able to:-

CO 1. Learn about animal houses: set up, maintenance, breeding techniques, care of normal & breeding animals.

CO 2. Understand about the surgical techniques : principles of surgery, ovariectomy , hysterectomy, tubectomy and castration.

CO 3. Learn the identification of various parts of the reproductive system from histological sections of slides / photomicrographs (rat and human) : testis, epididymis, vas deferens, copulatory organ, accessory glands in male ; and ovary, fallopian tube, uterus, cervix and vagina in female.

CO 4. Learn the methods of studying vaginal smear of rats and human vaginal exfoliative cytology.

CO 5. Learn the methods of knowing and calculating sperm motility and sperm count (rat).

CO 6. Learn the methods of applying modern contraceptive devices for birth control.

Department of Chemistry

Program outcomes in Chemistry

Purpose of undergraduate Chemistry is to provide the key knowledge and laboratory resources to prepare students for careers as professionals in the field of chemistry, Biotechnology and industry

The main program outcomes are

1. Firm foundation of students in fundamentals and applications of current theories and principles in everyday life
2. Designing of scientific Experiments, record and analysis of results
3. Communication of results in oral written and electronic format with scientists and public
4. To explore new areas of research in Chemistry and applied fields of science and technology
5. Develop ability to observe, analyze and interpret data and make rational decisions and solve problems
6. Apply ethical principles and commit to professional ethics, responsibilities and norms of scientific practice.
7. Chemistry is an integral activity for addressing social economic and environmental problems
8. Application of knowledge and technical skills in industries as effective technologists, operation of analytical instruments and identifying problems and their solutions

List of course outcomes (Chemistry)

Course Code	Title	Outcomes	Credit
CHEM101TH	Atomic Structure, Bonding , General Organic Chemistry and Aliphatic Hydrocarbon	To impart theoretical understanding and basic concepts of organic Chemistry. Name of functional group and different class organic compound	4
CHEM101PR	Atomic Structure,	Basic practical skills in volumetric and organic analysis	2

	Bonding , General organic Chemistry and Aliphatic Hydrocarbon		
CHEM102TH	States of Matter , Chemical Kinetics and functional Organic chemistry	Basic principles of physical chemistry and complete knowledge of periodic tables, atomic structure inorganic chemistry	4
CHEM102PR	States of Matter , Chemical Kinetics and functional Organic chemistry	Understanding of concepts of purification like distillation, crystallization, determination of Melting point and boiling point	2
CHEM201TH	Solution phase equilibrium conductance electro chemistry and organic chemistry	Understanding concepts of Solutions Phase Equilibrium and critical solutions Knowledge of different aspects of electrochemistry Preparation and properties of organic compound Detail study of carbohydrates	4
CHEM201PR	Solution phase, equilibrium, conductance electro chemistry and organic chemistry	Determination of distribution coefficient of different solutions Conductance determination Preparation of organic compounds	2
CHEM202TH	Main Group elements and chemical energetics	Detail study of s & p block elements and properties of noble gases Different aspects of chemical and Ionic equilibrium	4

CHEM202PR	Main Group elements and chemical energetics	Analysis of inorganic mixture and determination of heat capacity and pH measurement	2
CHEM203SEC	Analytical Chemistry	To learn the analysis of water and soil sample Food adulteration by lab method	4
CHEM204SEC	Fuel chemistry and Chemistry of Cosmetics & perfumes	knowledge of petro chemicals, perfume and cosmetics Knowledge of different types of chromatographic technique Knowledge of composition preparation and structure of essential oils	4
CHEM301TH	Polynuclear Hydrocarbons, Dyes, UV, IR and NMR spectroscopy	Preparation and properties of poly aromatic hydrocarbons, dyes and their application in pharmaceuticals and agricultural products	4
CHEM301PR	Polynuclear Hydrocarbons, Dyes, UV,IR and NMR spectroscopy	Detail study of UV, IR and NMR with application in structure identification and characterization	2
CHEM305TH	Polymer Chemistry	Detail knowledge of polymer Principals of polymerization Synthesis and applications Properties (Mechanical and Physical) Knowledge of conducting polymers	4
CHEM305PR	Polymer Chemistry	Preparation of polymers by different methods Measurement of physical properties of polymers	2
CHEM307SEC	CHEMICAL TECHNOLOGY & Society &	Principles of chemistry as applied in chemical industry such as biotechnology, cement	4

	Business skills in chemistry	factories, fertilizers factories Students get in format ion regarding the scaling up of chemical reactions to industry level. Familiarity of apparatus used in industry. Knowledge of IPR business management.	
CHEM308SEC	Pesticide &Pharmaceutic al chemistry	Students to know about different pesticides their application, preparation and side effects. Knowledge of Green pesticides their synthesis and how they are able to reduce the environmental pollution. Synthesis of different categories of drugs, their application and their side effects.	4

Bachelor of Science (B.Sc.) with Physics

PO1. The students will have scientific temperament .
PO2. Students' analytical and problem solving skills enable them to face various challenges in their day to day life.
PO3. Students will be able to have their livelihood in their fields like banking, technology, civil services etc.
PO4. Students will be able to impart basic knowledge in science to society
PO5. Students will be able to aware people about environment conservation.
PO6. Students will be able to pursue different courses in higher education and research.

Detail of Courses

Discipline Specific Courses (DSC)

1. Mechanics PHYS101TH
2. Electricity and Magnetism PHYS102TH
3. Statistical and Thermal Physics PHYS210TH
4. Waves and optics PHYS202TH

Discipline Specific Electives (DSE)

1. Elements of Modern Physics PHY301TH
2. Nuclear and Particle Physics PHYS304TH

Skill Enhancement Courses in Physics

1. Physics Workshop Skill PHYS203TH
2. Electrical Circuit and Network Skill PHYS205TH
3. Radiation Safety PHYS307TH
4. Renewable Energy and Energy Harvesting PHYS310TH

Course Outcomes (Cos)

First Year

Theory Paper 1: Mechanics PHYS101TH (DSC)

Students will be familiar with following outcomes:

CO1. Coordinate System, Inertial Frames and Non Inertial Frames

CO2. Gravitation and Inverse Square law, Rotational Motion, Kinamatics of Elastic and Inelastic Collision

CO3. Theory of Relativity and Effects of Relativity

Theory Paper 2: Electricity and Magnetism PHYS102TH

Students will have the knowledge of following outcomes:

CO1. Vector analysis, Electrostatics, Fields of moving Charges,
CO2. Magnetism, Surface current Density, Dielectrics, Polarisation
CO3. Maxwell Equations and Electromagnetic Wave Propagation and it's Physical interpretation

Second Year

Theory Paper 1: Statistical Physics and Thermal Physics (PHYS201TH)

CO1. To understand the concepts of temperature, entropy, heat, work and other important thermodynamic properties for various ideal gas processes.
CO2. To understand different types of statistics in detail
CO3. To understand the difference laws of thermodynamics to various processes and real system

Theory Paper 2: Waves and Optics (PHYS202TH)

CO1. Students will have the basic knowledge of SHM and various Mechanical and Electrical oscillator s

CO2. To provide good foundation in optics and behaviour of light

CO3. To understand and familiar with the different experiments related to light

Skill Paper 1: Physics Workshop and Skill (PHYS203TH)

CO1. Students will be aware of different machines

CO2. Students will have the knowledge of construction,working, uses and precautions regarding Lathe Machine, welding Machine, automobile Gear System etc.
CO3. How to use various measuring devices in physics practical, students will apprise with this.

Skill Paper 2: Electrical Circuits and Network Skill (PHYS205TH)

CO1. Students will gain the knowledge of basic Electrical Circuits
CO2. Thevenin's Theorem and Norton Theorem will help the students to study complex electrical circuits

CO3. Students will have the idea of blue print of electrical circuits.

Third Year

Theory Paper 1: Elements of Modern Physics (PHYS301TH)

CO1. Concepts of wave particle nature duality will be better understood

CO2. Atomic structure, bohr model are known here

CO3. Hesienbisenberg Uncertainty Principle, wave function propertie

Theory Paper 2: Nuclear and Particle Physics (PHYS304TH)

CO1.Students will be aware of properties of nucleus and nuclear models

CO2. A profound understanding of radioactivity and nuclear Reactions, Insight of Nuclear Detectors and Accelerators

CO3. Students will be familiar with subatomic particles and properties, understand the quark model thoroughly, and grasp the concept of Cosmic rays

Skill Paper 1: Radiation Safety (PHYS307TH)

CO1. Students will grasp the knowledge of atomic and nuclear physics, Interaction of radiation with matter
CO2. Students will have knowledge of Radiation Detection and Measuring Devices
CO3. Insight of Radiation Safety Management and Application pplication of Nuclear techniques will be given to students

Skill Paper 2: Renewable Energy and Energy Harvesting (PHYS310TH)

CO1. Students will acquire understanding of Renewal and non renewable energy sources
CO2. Detailed explanation of renewable energy sources like solar energy, hydro energy, wind energy etc. are provided
CO3. Students will comprehend the concept of Piezoelectricity and it's applications

Program: Bachelor of Science (B.Sc.)

Program Outcomes (Pos)

On successful completions of the BSc Programme students will be able to :-

Understand and apply the fundamental principles, concepts and methods in key areas of science and multidisciplinary fields

Demonstrate problem solving, analytical and logical skills to provide solutions for the scientific requirements

Develop the critical thinking with scientific temper

Communicate the subject effectively

Understand the importance and judicious use of technology for the sustainable growth of mankind in synergy with nature

Understand the professional, ethical and social responsibilities

Enhance the research culture and uphold the scientific integrity and objectivity

Engage in continuous reflective learning in the context of technological and scientific advancement

Degree program: B.Sc. with Mathematics

Program Specific Outcomes (PSos)

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

A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology.

A student should get adequate exposure to global and local concerns that explore them many aspects of mathematical sciences.

Student is equipped with mathematical modelling ability, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

Student should be able to apply their skills and knowledge that is translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.

Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Course Outcome (Cos)

B.Sc.1st-YEAR PAPER- I

Code	Course Title	Course Type
MATH101TH	Differential calculus, (Core Course)	DSC

On Completion of this course the students will be able to:

- Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point.
- Compare and contrast the ideas of continuity and differentiability.
- To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function.
- To able to calculate limits in inderminate forms by a repeated use of L' Hospital rule.
- To find the roots of algebraic and transcendental equations by using Rolls theorem and Mean value theorem and also solve the Taylor's series and Maclaurin series.
- To find maxima and minima, critical points and inflection points of functions of several variables and to determine the concavity and convexity, radius of curvature of curves.
- To able to evaluate integrals of rational functions by partial fractions and also Jacobian of functions.

B.Sc.1st-YEAR PAPER-II

Code	Course Title	Course type
MATH102TH	Differential Equations, (Core Course)	DSC

On Completion of this course the students will be able to:

Find the solutions of first order first degree differential equations, Wronskian and its properties.

Distinguish between linear, nonlinear, partial and ordinary differential equations

The main aim of the course is to introduce the students to the technique of solving various problems of engineering and science

Solve basic application problems described by second order linear differential equations with constant coefficients and also with variable coefficient.

Find the transforms of derivatives and integrals.

Obtain the solution by Variation of parameters method, Cauchy- Euler equation and Legendre differential equations.

Find the solutions of simultaneous differential equations and Total differential equations

To find the solutions of partial differential equations, Linear partial differential equation of first order, Lagrange' s method. Classification of second order partial differential equations into elliptical, parabolic and hyperbolic.

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B.Sc.2nd-YEAR PAPER-I

Code	Course Title	Course type
MATH201TH	Real Analysis, (Core Course)	DSC

After completing the course students are expected to be able to:

Describe the basic difference between the rational and real numbers. Give the definition of concepts related to metric spaces such as countability, compactness, convergent etc.

Give the essence of the proof of Bolzanoweistrass theorem the contraction theorem as well as existence of convergent subsequence using Cauchy ' s Criteria. Evaluate the limits of wide class of real sequences.

Determine whether or not real series are convergent by comparison test,p- test, root test and ratio test. We can also discuss the convergence of alternating series by using Leibnitzrule.

To find solutions of sequences and series of functions. We can understand the concept of pointwise, and uniform convergence with the help of Mn -test and M test. Results about uniform convergence, power series and radius of convergence.

Students will be able to demonstrate basic knowledge of key topics in classical real analysis.
The course pervious the basic for further studies with in function analysis, topology & function Theory.

B.Sc.2nd -YEAR PAPER-II

Code	Course Title	Course Type
MATH202TH	Algebra, (Core Course)	DSC

On successful completion of the course, students will be able to:

Students will be able to understand definition of group, abelian and non-abelian groups, the groups Z_n of integers under addition modulo n and the group U(n), Cyclic group, Normal subgroups, quotient groups.
Understand group homomorphism.
Understand basic theory of Rings, Commutative and Non-Commutative rings, Polynomial rings, rings of matrices, subring, Ideals, Integral domain and fields in detail.

B.Sc.2nd -YEAR PAPER-III

Code	Course Title	Course Type
MATH 309TH	Integral Calculus	SEC-1

On successful completion of the course:

This course will provide understanding of integration by partial fraction, integration of rational and irrational functions and properties of definite integrals.
reduction formulae.
Areas and lengths of curves in the plane, volumes and surfaces of solids of revolution, Cartesian and parametric forms.
Double and triple integrals.

B.Sc.2nd-YEAR PAPER III

Code	Course Title	Course Type
MATH310TH	Vector Calculus	SEC-2

On successful completion of the course, students will be able to:

Vector calculus motivates the study of vector differentiation and integration in two- and three-dimensional spaces.
It helps to understand the students about Scalar and vector product of three and product of four vectors. Reciprocal vectors. Vector differentiation, scalar point function and vector point function. Derivative along a curve, directional derivatives.
To understand the concept of orthogonal curvilinear coordinates. Gradient, Divergence, Curl and Laplacian operator in terms of orthogonal curvilinear coordinates system.
To understand the concept of vector integration: line integral, surface integral, volume integral. Theorem of Gauss, Green and Stokes and its applications.
It is widely accepted as a prerequisite in various fields of science and engineering.
It offers important tools for understanding functions (both real & complex)
non-Euclidean geometry and topology.
These tools are employed successfully in different branches of engineering and physics (such as electromagnetic fields, fluid flow and gravitational fields).

B.Sc. 3rd - YEAR PAPER-IV

Code	Course Title	Course Type
MATH301TH	Matrices	DSE-1A

On Completion of this course the students will be able to Understand:

Types of matrices. Rank of a matrix. Invariance of rank under elementary transformations. Reduction to normal form, Solutions of linear homogeneous and non-homogeneous equations with number of equations and unknowns up to four.

Matrices in diagonal form. Reduction to diagonal form up to matrices of order3. Computation of matrix inverses using elementary row operations. Rank of matrix. Solutions of a system of linear equations using matrices.

Illustrative examples of above concepts from Geometry, Physics, Chemistry, Combinatorics and Statistics.

Vector spaces, subspaces, algebra of subspaces, quotient spaces, linear combination of vectors, linear span, linear independence, basis and dimension, dimension of subspaces.

Linear transformations, null space, range, rank and nullity of a linear transformation, matrix representation of a linear transformation, algebra of linear transformations. Dual Space, Dual Basis,

Double Dual, Eigen values and Eigen vectors, Characteristic Polynomial.

B.Sc.3rd - YEAR PAPER-IV

Code	Course Title	HPW
MATH 304TH	Numerical Methods,	DSE-1B

On successful completion of the course, students will be able to:

Solve an algebraic or transcendental equation using Bisection method, False position method, Fixed point iteration method, Newton' s method, Secant method, LU-decomposition method.

Solve a linear system of equations using Gauss- Jacobi, Gauss- Siedel and SOR iterative methods. Understand the concept of interpolation by using Lagrange and Newton interpolation method.

Find the concept of Finite difference operators, numerical differentiation by using Newton forward and backward difference method, Sterling's difference method.

Calculate a definite integral using Trapezoidal rule, Simpson's rule, Euler method.

These appropriate methods are used to Code in modern computer language.

B.Sc. 3rd - YEAR PAPER-IV

Code	Course Title	Course Type
MATH313TH	Probability & Statistics	SEC-3

On successful completion of the course, students will be able to:

Understand basic theoretical and applied principles of statistics needed to enter the job force.

They will have a better informative view on sample space, probability axioms, cumulative distribution functions, probability density function.

mathematical expectations, moments, moment generating functions.

Binomial, Poisson, Normal, continuous distribution. Joint cumulative distribution function & its properties, joint probability density functions, marginal and conditional distributions, expectation of function of two random variables.

B.Sc.3rd - YEAR PAPER IV

Code	Course Title	Course Type
MATH317TH	Transportation & Game Theory	SEC-4

On successful completion of the course, students will be able to:

The game theory provides powerful tools for analysing transport systems and making decisions in situations.

The students will be able to thoroughly grasp the topics like transportation problem and its mathematical formulation, optimal solution.

NWCM, LCM, VAM, for solving transportation problems and Hungarian method for solving assignment problem.

In game theory Principal of dominance, Graphical Method.

Department Of Mathematics

Dr. Sohan Kumar
Prof. Surjeet Kumar
Prof. Shiv Kumar

Bachelor of Science (B.Sc.) with Computer Science

Programme Outcomes

POs On completion of the programme the students will be able to:

PO1 The programme aims to give knowledge with facts and figures related to various subjects in pure sciences such as Physics, Chemistry, Botany, Zoology, Mathematics and Computer Science.

PO2 Enable the students to understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevance in the day-to-day life.

PO3 The learners acquire the abilities in handling scientific instruments, scheduling and executing the experiments in laboratories and to draw logical inferences from the scientific experiments.

PO4 They become capable of thinking creatively, to propose innovative ideas in clarifying facts and figures and providing new solution to the problems.

PO5 To give them knowledge about developments in any science subject and how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable developments.

PO6 The programme targets to develop scientific aptitude among the students to make them open-minded, critical and curious in order to deal with all aspects related to life. PO7 To make them capable of applying their acquired knowledge and able to work on their own hence make themselves self-reliant

Course Outcome

Learning Outcomes– BSc. Computer Science

Problem solving using Computer COMP101TH

CO 1 It Will Provide brief overview of SDLC Models to the students.

CO 2 Be able to identify the real-life problems, able to develop flow charts and algorithms and programming approaches.

CO 3 Develop and maintain problem-solving skills and also provides basic knowledge of computers.

CO 4 Basic and Advance Python Programming language are used to solve real life Problems.

Software Lab using Python COMP101PR1

CO1 Apply language features including strings, lists, tuples, dictionaries, regular expressions

CO2 Create and call functions.

CO3 Create and manipulate files.

CO4 To develop flow charts and algorithms to solve any real-life problems.

CO5 Python Provides large number of graphics library which can be used to depict their problems visually.

Office Automation Tools COMP102 TH 1

CO1 Basic of MS Office/Open Office/Libre office

CO2 To perform documentation and presentation skills. CO3 Input experimental data into Microsoft Excel.

CO3 Generate simple and effective tables and graphs to describe experimental data in Microsoft Excel.

Office Automation Tools Lab COMP102 PR 1

CO1 It will Provide knowledge of basic Text formatting option using MS Word.

CO2 use and analysis of numerical data using MS Excel. CO3 Understanding of Power Point Presentation to exchange ideas in better way.

Computer System Architecture COMP201 TH2

CO1 Understanding of electronic circuits, Boolean algebra, Data representation and basic computer Arithmetic' s

CO2 Understanding of electronic circuits, Boolean algebra, Data representation and basic computer Arithmetic' s

CO3 The design of combinational and sequential circuits CO4 Basic of computer organization and Architecture

CO5 Basics of CPU and arithmetic and logical microoperations along with I/O Organization

Data Base Management system COMP202 TH 2

CO1 Understanding of database concepts, approaches and architecture of DBMS.

CO2 Understanding of E-R and relational Models.

CO3 Database design, functional dependencies and Normal Forms

Data Base Management system Lab COMP202 PR 2

CO1 Understanding of My Access and My SQL.

CO2 Understanding of DDL Commands.

CO3 Understanding of DML Commands.

PHP Programming COMP203 TH2

CO1 Understanding of basic building blocks of PHP Programming

CO2 Handling HTML Forms with PHP codes.

CO3 Understanding of functions for Modular Programming Approach.

CO4 Understanding of string manipulation and regular expression.

Operating System COMP301 TH3

CO1 Understanding of OS design strategies and types of OS.

CO2 Understanding of OS Architecture

CO3 Understanding of Process Management and Memory Management.

CO4 Introduction to Linux Shell and shell scripting.

Data Structure and File Processing COMP302 TH3

CO1 Understanding the basics of Data structure

CO2 Understanding of Searching algorithms

CO3 Understanding of Physical devices.

CO4 Understanding of basic File organization.

Data Structure and File Processing Lab COMP302PR 3

CO1 Understanding to develop codes for Arrays.

CO2 Understanding to develop codes for Stack and Queue. CO3 Understanding to develop codes for searching algorithms.

Software Engineering COMP303 TH3

CO1 Understanding of software Development Process.

CO2 Apply new software models, techniques, and technologies to bring out innovative and novelistic solutions for the growth of the society in all aspects and evolving into their continuous professional development.

CO3 Understanding of software requirement, Software configuration Management, Project Management and testing.

CO4 Understanding of Basics of reverse Engineering

Program: Bachelor of Arts (B.A.)

Degree program: B.A. with English

Program Outcomes (Pos)

The course introduced to students arises not only interest and love for literature but a sensibility and critical approach toward it. It focuses on multidimensional development of students in the field of English literature.

The course covers all the aspects and branches of English literature.

The students acquire communication skills, critical and analytical thinking, interpersonal skills, time management and awareness towards day-to-day developments and develop scientific and secular approach.

Students must develop an ability to understand and accept a composite view of multiculturalism.

The programme inculcates in the students a knack for a deeper pursuit of knowledge and equipping oneself with advanced skills in the English language.

To develop basic skills and ability to listen, speak, read and write English.

Students acquire the necessary Communication Skills (verbal and non-verbal) to meet the global and local needs and enhance their employability.

To develop a taste for critical approach and awareness to latest trends in both language and literature.

To help students discover universality in themes, theories, literary movements between the East and the West, the Classical and Modern, the Original and the Translation.

To build vocabulary and practice rhetoric.

To polish creativity and professional aptitude.

The holistic plan is to make the learner not to follow the bandwagon but be in command of shaping his life as a whole

The avenues available to the students are in the field of administrative services, teaching, journalism and writers, creative and technical writing.

They can be employed as ESL teachers, interpreters and soft skill experts.

Course Outcome (Cos)

Year	Code	Name of the paper	Type of Paper	Course Outcome
BAI / B Com I	CE 101	English-1 Core English (Compulsory) For B.A. and B.Com.	DSC	**On completion of the course students will have**: 1. Better understanding of different forms of writing. different words, their meaning and how these meanings are conveyed about a literary text. 2. Ability to

				differentiate between prose, poetry and drama. 3. Better understanding of grammar.
BAI	ENG DSC 102/	DSC-1B English Literature-2 (Poems, Short Stories and Essays)	DSC	1. A worldview of English literature. 2 Interpret the meaning, theme, structure of poems and other pieces of literary texts. 3. understand the impact of society and its trends, values and traditions on literature.
BAI	ENG DSC 103	English Literature-2 (Poems, Short Stories and Essays)	DSC	1. Knowledge of different genres of verse across cultures. 2. Knowledge
BAI/ BCom/ BScI	ENG AECC 104	AECC-2 Writing Skills		1. Increased vocabulary 2. Critical thinking. 3. Improved writing skills of letters, essays. 4. Able to write diary entries, notices, reports, feature articles. 5. Learn interview skills. 6. Improved grammar. 7. Ability to develop ideas.
BAII / BCom II	ENG CE 201	English-2 Core English (Compulsory) for B.A & B.Com.		1 knowledge about the various categories of essayas. 2 critical ability to appreciate the short poems of some of the best poets from the English literature. 3 Ability to analyze the themes of the essays and poems. 4 Able to differentiate between noun and verb ;Homonym, homophone and Homograph 5. To use words as nouns and verbs. 6 To interchange the degree of a sentence.
BAII	ENG DSC 202/	DSC- 1C British Literature (Play	Dsc	At the end of the course students will : 1. Critically examine various

		and Novel)		characters, themes and scenes of the play 2. Explain the relevance of the particular novel and drama to modern times 3. Learn to appreciate the different devices and art of Drama and novel writing. 4. Learn vocabulary appropriate to subject matter.
BAII	ENG DSC 203	DSC-1D Literary Cross Currents (Core Course for students who choose English as Discipline	DSC	Students will be able to: 1. Evaluate the themes of the poems, stories, Novel and drama critically 2. Reflect on social, cultural and political issues concerning the Indian society.
BAII	ENG AEEC/ SEC 204	AEEC/SEC-1: Creative Writing, Book and Media	SEC	Students will have: 1. knowledge of various forms of creative writings and advance their knowledge of literary devices 2 Recognize various types of devices used in a piece of literary writing 3. Judicially review a book film, or TV programme
BAII	ENG AEEC/ SEC 205	AEEC/SEC-2 Translation Studies and Principles of Translation (Basic Concepts and Readings)	SEC	Students will have knowledge: 1 To identify various methods of translations and will explain them in detail. 2 Different approaches to translation. 3 Problems in translation and solving them. 4. Knowlege of different concets of translation.
BAIII	ENG AEE C SEC 301	Technical Writing	AECC/SEC	On completion of the course students will learn: 1 Importance and art of technical writing. 2. Practice audience analysis and develop effective communication strategies for a variety of audiences. 3. To use computer technology in the writing process, including

				research and documentation. 3. Know the importance of selecting and integrating graphics with written communication.
BAIII	ENG AEEC/ SEC 302	Business Communication	AECC/SEC	
BAIII	ENG DSE 303	Soft Skills	DSC	1 Students develop and improve their soft skills. They will be able to communicate their ideas, suggestions, views and opinions clearly and logically. 2 They about the listening skills, team work, emotional intelligence 3 Students learn the Interview skills, self evaluation through SWOT, non verbal communications and etiquettes. 4 It also teaches professional ethics .
BAIII	ENG DSE 304	DSE-1 B Academic Writing and Composition	DSC	1 The student Learns about the features and conentions of academic writing. 2 The student learns about the technique, ethics of witring research papers. they come to know about the problems and mistakes usually done at the time of doing research and learn how to avoid them. 3 They learn and practice exercises in proper punctuation, subject-verb agreement, use of apostrophe, common abbreviations, common grammatical mistakes. 4 The students Learn about the process of academic writing step-by- step. They learn to draft and edit. 6 The student Learns to employ critical thinking in their everyday writing and to write proper

				academic research papers, proposals, reports etc.

हिंदी विभाग के पाठ्यक्रम के प्रति फलन

HIND101		प्रयोजनमूलक हिंदी	भाषा सीखने के प्रतिफल क्या है? सीखने के प्रतिफल को छात्रो के गुणात्मक एवं मात्रात्मक रूप से परे देखा जा सकता हैं। प्रतिफल एक बच्चे के विकास के अपेक्षाकृत संपूर्ण सीखने के अनुसार बच्चे की बढ़ोतरी का आकलन करते हैं। सीखने के प्रतिफल वे दक्षताएँ जिन्हें शिक्षार्थी द्वारा किसी पाठ्यक्रम के अन्त में प्राप्त कर लेना चाहिए या प्रदर्शित करना चाहिए।
HIND102 DSC – IA		हिंदी साहित्य के इतिहास	हिंदी साहित्य के इतिहास अध्ययन के अनेक लाभ है । हिंदी साहित्य के इतिहास के माध्यम से हमारी संवेदना व्यापक हो जाती है , हमारी सोच का दायरा व्यापक हो जाता है। हम समाज , राजनीति , अतीत और आस-पास के परिवेश को और अधिक बेहतर समझने योग्य हो पाते हैं।
HIND103 DSC – IB	Core Course	मध्यकालीन कविता	मध्यकालीन साहित्य उस समय के लेखन की समान विशेषताओं का अनुसरण करता है। मध्यकालीन साहित्य को लेखन में रूपक के उपयोग, काम के भीतर धार्मिक या शैक्षिक शिक्षाओं, लेखकों की गुमनामी और दरबारी प्रेम और शिष्टता के

			विचार के लिए जाना जाता है। इससे विद्यार्थियों को लौकिक और अलौकिक ज्ञान की समझ बढ़ती है।
HIND201 SKT/ HINDI-2	Core Course B.A./B.Com.	**अनिवार्य हिंदी रचना पुंज**	प्रस्तुत पाठ्यक्रम में विद्यार्थियों को कविता और कहानी दोनों एक साथ सिखाई जाती है। इस पाठ्यक्रम में विद्यार्थी कहानी और कविता के माध्यम से समाज में हो रही गतिविधियों का अध्ययन करते हैं और सामाजिक गतिविधियों के मध्य निर्णय लेकर उनसे व्यवहाररत होने की योग्यता हासिल करते हैं।
HIND202 DSC – IC	Core Course	**आधुनिकहिन्दी कविता**	कविताएँ सीखने में कैसे मदद करती हैं, और आप महाविद्यालय के बच्चों में कविता के प्रति प्रेम कैसे प्रेरित कर सकते हैं। यह वर्तनी में सहायता करता है। वाणी विकास में सुधार होता है। यह बच्चों को अपनी राय विकसित करने की अनुमति देता है।

हिंदी विभाग के पाठ्यक्रम के प्रति फलन

HIND203 DSC – ID	Core Course	**हिन्दी गद्य साहित्य**	उपन्यास एवं कहानियां सुनाने से बच्चों की कल्पना शक्ति बढ़ती है। बच्चों में आगे के समय को ध्यान में रख कर सोचने की शक्ति पढ़ती है और वे शब्दों के माध्यम से अपनी दुनिया बनाने लगते हैं। वे कहानी के पात्रों की कल्पना कर लेते हैं और उनके बारे में ध्यान से सोचने लगते हैं। इस तरह उनकी कल्पनाशीलता बढ़ती है।
HIND204 SEC - I	Skill Enhancement Course	**कार्यालयी हिन्दी**	सभी क्षेत्रों से सम्बद्ध कार्यालयों में काम करने वाले व्यक्ति एक तरह से कार्यालयी हिन्दी का ही प्रयोग करते हैं। इसलिए कार्यालयी हिन्दी अपने-आप में व्यापक अर्थ की अभिव्यंजना रखती है। भाषा मनुष्य की अभिव्यक्ति का एक माध्यम है। अलग-अलग क्षेत्रों में भाषा का रूप भी बदलता है।कार्यालयी हिंदी से विद्यार्थी अपने जीवन के कार्यों को सरल एवं सुगम बनाने के तरीके सीखते हैं। हिंदी विद्यार्थियों को समाज में रहने और कार्य करने के हर परिवेश से रूबरू करवाती है।
HIND206 SEC - II	Skill Enhancement Course	**अनुवाद विज्ञान**	अनुवाद के अध्ययन से अत्यधिक कुशल अनुवादक बना जा सकता है हैं। अनुवाद अध्ययन अभ्यासकर्ताओं को उन कौशलों को विकसित करने में मदद करता है,जिनसे किसी भी क्षेत्र में सफलता हासिल की जा सकती है।और भी व्यापक पैमाने पर, "सूचना, ज्ञान और विचारों के प्रसार के लिए अनुवाद आवश्यक है। विभिन्न संस्कृतियों के बीच प्रभावी और सहानुभूतिपूर्ण

			संचार के लिए यह नितांत आवश्यक है।
HIND301 SEC - III	Skill Enhancement Course	**रंगमंचएवं रंगआलेख**	पाठ्यक्रम के मुख्य विषय हिंदी के प्रश्न पत्रों की सामग्री निर्धारण में ज्ञान और शिक्षा के बदलते परिपेक्ष में को ध्यान में रखा गया है। पारंपरिक एवं शास्त्रीय विषयों के साथ-साथ जो विषय आधुनिक पीढ़ी के लिए उपयोगी तथा रोचक है उनका भी समावेश पाठ्यक्रम में किया गया है। रंग आलेख और रंगमंच जैसे विषय साहित्य के विद्यार्थी में ज्ञान की अभिवृद्धि वैश्वीकरण के संदर्भ में प्रासंगिकता और उपयोगिता सिद्ध करती है। साहित्य के छात्र के समुचित एवं सर्वांगीण विकास को ध्यान में रखते हुए साहित्य की विविध मुखी विधाओं का समायोजन इस पाठ्यक्रम में किया गया है
HIND302 SEC - IV	Skill Enhancement Course	**समाचारसंकलनएवं लेखन**	समाचार के संकलन और लेखन तथा उसके पठन-पाठन से विद्यार्थियों में शब्दों का ज्ञान बढ़ता है। उनकी सुनने की कला विकसित होती है। वे अपनी संस्कृति के बारे में विस्तार से ज्ञान प्राप्त कर पाते हैं। उनकी मानसिकता में मजबूती आती है उनकी सोचने और समझने और याद रखने की क्षमता मजबूत होती है। प्रस्तुत प्रश्न पत्र से विद्यार्थी अपने रचनात्मक शक्ति को धारण करते हुए अपने संबंधों को भी मजबूत करता है।

हिंदी विभाग के पाठ्यक्रम के प्रति फलन

HIND305 DSE – 1A	Discipline Specific Elective	**लोकसहित्य**	प्रस्तुत प्रश्न पत्र से विद्यार्थी अपने रचनात्मक शक्ति को धारण करते हुए अपने संबंधों को भी मजबूत करता है।लोक साहित्य को लोक संस्कृति का सर्वाधिक महत्त्वपूर्ण अंग माना जा सकता है क्योंकि इसमें लोक संस्कृति के सभी अंगों की झलक मिलती है। किसी भी समाज की मान्यताएँ, अंधविश्वास, त्योहार, रीति-रिवाज, गीत, गाथा, क़िस्से-कहानियाँ, कहावतें, मुहावरे आदि का परिचय हमें लोक साहित्य के द्वारा ही मिल सकता है।
HIND306 DSE – 1B	Discipline Specific Elective	**छायावादोतरहिन्दी कविता**	कविता भी राष्ट्रीय पाठ्यचर्या साक्षरता का एक महत्वपूर्ण हिस्सा है विद्यार्थियों को कविता पढ़ने का आनंद लेने कुछ को दिल से सुनाने और अपनी खुद की कविताएँ लिखने के लिए प्रोत्साहित किया जाता है - और कक्षा के अंदर और बाहर इसके कुछ आश्चर्यजनक लाभ हो सकते हैं। यह वर्तनी में सहायता करता है तुकबंदी और छंदबद्धता कौशल के बारे में अच्छी जागरूकता वाले बच्चे बेहतर पाठक और वर्तनीकार बनते हैं। तुकबंदी पर ध्यान देने से उन्हें शब्दों के भीतर पैटर्न और वे कैसे बनते हैं यह देखने में मदद मिलती है, जिससे शब्द पहचान और वर्तनी में मदद मिलती है ।

			वाणी विकास में सुधार होता है। शब्दों में ध्वनियों और तुकबंदी पैटर्न के साथ खेलना मुंह ग्रसनी और नाक में स्वर तंत्र के विकास में सहायता करता है, जिससे भाषण और भाषा के विकास में मदद मिलती है । जैसे-जैसे बच्चे ध्वनि-विज्ञान से निपटना शुरू करते हैं कविता स्वरों की अभिव्यक्ति का मार्ग भी प्रशस्त करती है। पढ़ना अधिक धाराप्रवाह हो जाता है। पृष्ठ पर कविताओं की धुनें और बच्चों में पढ़ने के प्रवाह को विकसित करने में सहायता करते हैं, जिसका अर्थ है कि कविता अधिक अनिच्छुक पाठकों को शामिल करने के लिए एक आदर्श माध्यम है, साथ ही अधिक आश्वस्त पाठकों को पृष्ठ पर शब्दों पर अधिक ध्यान देने के लिए प्रोत्साहित करती है। यह बच्चों को अपनी राय विकसित करने की अनुमति देता है एक कविता कोई पहेली नहीं है जिसे सुलझाया जा सके: जब बच्चे कविताओं के बारे में बात कर रहे हों या जो वे सुन रहे हैं या

			पढ़ रहे हैं उसके बारे में राय साझा कर रहे हैं तो कोई सही या गलत उत्तर नहीं है जो उन्हें कक्षा में दूसरों के सामने अपने विचार व्यक्त करने में आत्मविश्वास दे सके। पंक्तियों और छंदों के बीच का भौतिक स्थान बच्चों को प्रतिबिंबित करने और अपनी व्याख्या करने के लिए विराम भी प्रदान करता है। यह रचनात्मकता को प्रेरित करता है अच्छी तरह से चुनी गई कविताएँ बच्चों को स्वयं लेखक बनने के लिए प्रेरित करने में मदद कर सकती हैं। वे अक्सर आवाज़ की समझ हासिल करते हैं और अपनी खुद की कविता लिखकर अपनी विषय वस्तु, भाषा, व्याकरण और शैली के बारे में ध्यान से सोचते हैं। कविताएँ लिखने से उन्हें अपने अनुभव पर विचार करने, उसे फिर से बनाने और अपनी आवाज़ का उपयोग करके उसे आकार देने के लिए प्रोत्साहित किया जाता है। वे अनुप्रास और विभिन्न लेखन उपकरणों के साथ भी प्रयोग कर सकते हैं जिससे उनका लेखन अधिक गतिशील और रोमांचक हो जाएगा।

			यह व्याख्या कौशल विकसित करने में मदद करता है कविता बच्चों के व्याख्यात्मक कौशल और पृष्ठ पर शाब्दिक शब्दों से परे अनुमान लगाने और निष्कर्ष निकालने की क्षमता का विस्तार करती है: कविता की शक्तियों में से एक इसकी संक्षिप्तता है : लेखन के एक छोटे से टुकड़े में बच्चे लेखक के इरादे को अधिक गहराई से देख सकते हैं समझ सकते हैं कि चुनाव क्यों किए गए हैं और इनका प्रभाव क्या है - यह विस्तृत शब्दावली और विविध व्याकरण को प्रोत्साहित करता है कविता भाषा के साथ खेलती है, और कविता के लेखक पाठक पर अंतिम प्रभाव के लिए शब्दों और विराम चिह्नों का उपयोग करने के तरीके में जानबूझकर चुनाव करते हैं। अच्छी तरह से लिखी गई कविता पढ़ने से बच्चों को सर्वोत्तम भाषा, सबसे विचार-विमर्श लेआउट और अर्थ व्यक्त करने के लिए सबसे उपयुक्त विराम चिह्न का उपयोग करके विचारों को प्रभावी ढंग से लिखने के तरीकों को देखने की अनुमति मिलती है। यह बच्चों को उनकी भावनाओं को समझने में मदद करता है

			कविता बच्चों की भावनात्मक साक्षरता के विकास में सहायता करती है। वे साझा की गई कविताओं में सुने गए अनुभवों के आधार पर अपनी भावनाओं भावनाओं और व्यवहार को प्रबंधित करना और प्रतिबिंबित करना सीख सकते हैं। जब वे अपनी कविता लिखते हैं, तो वे किसी विशेष घटना या भावना को रूप और महत्व दे सकते हैं जो उनके लिए महत्वपूर्ण थी, और इसे पाठक या श्रोता तक पहुंचा सकते हैं। यह विभिन्न लेखकों विषयों और शैलियों का परिचय देता है प्राथमिक विद्यालय के बच्चों के लिए विभिन्न लेखकों की विभिन्न कविताओं का एक विशाल चयन उपलब्ध है।

डॉ० अनिल कुमार
सहायक आचार्य हिंदी विभाग
राजकीय आर्य महाविद्यालय नूरपुर

Bachelor of Arts (B.A.) with Sanskrit

Programme Outcome

POs On completion of the programme the students will be able to:

PO 1 It aims to train students in classical Sanskrit in which major works on various disciplines are written.

PO 2 It is also aims to train them in important traditional disciplines such as - Vedic studies; prose, poetry and drama which have inspired and continue to inspire great literary works in almost all Indian languages;

PO 3 Students also learn literary criticism or kavya Shastra; vyakarana which covers a large area of linguistics; darshana i.e., philosophy and logic; dharma Shastra which covers many areas of sociology and legal studies.

PO 4 The course will thus make students better equipped to pursue their post graduate studies and undertake further research in these disciplines

Course Outcome

Sanskrit Kavya SKT-DSC-101 DSC 1st year

CO1 It introduces students to the literary works of prominent Sanskrit scholars i.e. Kalidas, Magh, Bhartihari.

CO2 In Raghuvan sham Mahakavi Kalidas has described characteristics of Raghuvanshi Kings which attracts students toward good qualified.

CO3 In Magha's Shishupalvadham students come across with a peculiar genre

CO4 Bhartrihari' s Nitishatkam is a collection of hundred verses on various issues of social concern.

CO5 This course gives a general outline of the history of sanskrit poetry, Origin and development.

Ki Sanskrit Gadya Kavya SKT-DSC-102 DSC 1st year

CO1 This course enables students to familiarize themselves with some of the leading classical proseworks of Sanskrit.

CO2 Students get acquainted with Banabhatt 'swriting skills through his Shuknasopdesha.

CO3 Sukhnas' sserman to Chandrapeed is of all time importance to the students.

CO4 Shivrajvijay is a first novel of sanskrit which is of historical importance for the students.

CO5 It enables students to understand origin and development of sanskrit prose.

Neeti Sahitya Neeti Sahitya SKT-DSC-103

CO1 The course makes students aquatinted with the Niti-Literature meaning thereby policy-literature in Sanskrit.

CO2 Panchatantra of vishnusharma gives students a broader vision to deal with social, political and personal issues in a very simple way.

CO3 It helps students improving their reading and Story writing skills.
CO4 It enables students to enjoy the essence of Nitishatkam of Bhartrihari and to apply its teachings in their day today life.

Upnishad, Bhagwad Gita and Paniniya Shiksha SKT-AECC-104 AECC 1st YEAR

CO1 It gives general outline of Upnishad-philosophy, particularly of Ishavasyopanishad.
CO2 Through this course students get acquainted with their old scriptures.
CO3 It makes students understand deep philosophical thoughts of Ishavasyopnishad and Bhagwad Gita.
CO4 It includes 2nd chapter of Bhagwad Gita which explains mortality of the body and immortality of the soul
CO5 It describes origin process of letters in sanskrit through Paniniya Shiksha.

Sanskrit Natak SKT-DSC-201 DSC 2nd year

CO1 This course helps students to get acquainted with two most prominent dramatic works of sanskrit literature
CO2 Plays included in this course represent two stages of development of Sanskrit drama.
CO3 It includes Karnbharam of bhasa which highlights characteristics of great donor of Mahabharat, Karan. CO4 Abhigyan Shakuntala makes students aware of the beauty of classical sanskrit drama highlighting moral values and love for nature.
CO5 It enables students to get acquainted with technical words used in sanskrit drama as described in Natya Shastra.

Sanskrit Vyakaran SKT-DSC-202 DSC

CO1 It introduces students with the basic element of sanskrit language i.e.,grammar.
CO2 Students come to know structural perspective of Sanskrit on the basis of Laghu siddhantKaumudi, the premier text of Sanskrit grammar written by varadraj. CO3 It facilitates students to learn 14 Maheshwara Sutras, the very base of sanskrit grammar.
CO4 It gives knowledge of sandhi, karakas etc. for the formation of sentences in sanskrit.
CO5 After completion of this course, it becomes very easy for students to understand structural pattern of sanskrit language.

Vyakaranevam Samayojan SKT-DSC-203 DSC 2nd year

CO1 It enables students to know basics of sanskrit grammar.
CO2 Students learn sangya, sandhi, samason the basis of laghu siddant kaumudi.
CO3 It also introduces students to pratyay (suffix) for formation of meaningful words.
CO4 This enables students to write short paras in sanskrit.
CO5 It also facilitates students to translating sentences in sanskrit from hindi or english.

Ayurvedkemool Siddant SKTAEEC/SEC-205 AEEC/SEC 2nd year

CO1 This course introduces students to the traditional indian healthcare system.
CO2 It enables students know history of Ayurveda through original sanskrit texts i.e.,Charaksamhita, Sushrutsamhita, Ashtanghridayaand Taitariyopanishadh.

CO3 It makes students appreciate principles of traditional Indian medicine system.
CO4 It makes students know that Aurveda does not give knowledge of medicine and physical health only but also explains healthy lifestyle including food habits, preventive measures, medicinal plsts etc.
CO5 Students also get basic knowledge of physiology, healthcare, ways of diagnosis of illnesses and preventive measures.

SanskritChhandevamgaayan SKTAEEC/SEC-206 AEEC/SEC2nd year

CO1 This course enables students to learn sanskrit meters and lyrical technique.
CO2 Students get acquainted with the basics of the vedic and Classical meters.
CO3 Students get introduced to Chhanashastra- cassification and elements of chhand as described Therein.
CO4 Students get to learn analysis of selected classical meters (anushthan, malini etc.) and their musical renditions(gayanpaddhati).
CO5 It develops quality of lyric writing and along with its rendition.

Vyaktitva Vikas ka Bharatiy Drishtikon SKT-DSE-301 DSC3rd year

CO1 This course helps students to develop the rpersonalityas a perfect human being.
CO2 It introduces students to some theoretical concepts and practical techniques for development of their personality.
CO3 It enables students to know the concept of person, personality and it' s Development on the basis of Gita ,Upnishad and Vedic literature.
CO4 It covers verses of Gita from its various chapters to explain concept of a person.
CO5 Measures for behavioural improvement are also included for student's overall growth

Sahityik Samalochana SKT-DSE-302 DSE3rd year

CO1 It makes students get acquainted with the aims, causes of origin(hetu), types, and definition of Kavya (poetry) on the basis of Mummy' s Kavya-Prakash.
CO2 Students get benefitted from the knowledge of word powers- Abhidha, Lakshna and Vyanjana.
CO3 It imparts knowledge on the types of the three-word powers.
CO4 It also introduces students with rasa- the students come to know three types of words.
CO5 essence of Kavya.

Patanjal Yogsutra SKT-GE-303 GE3rd year

CO1 This course makes students know world' s most important and popular text.
CO2 It makes students aware of the vision of our ancient yoga tradition.
CO3 It helps students to apprehend yoga sutras of Maharshi Patanjali.
CO4 It facilitates students to acquire necessary tools for a balanced life.
CO5 Students learn as how to concentrate their mind and body in order to lead a peaceful and happy life.

JiBhasha Vigyan keMool bhut Siddant SKT-GE-304 GE 3rd year

CO1 It enables students understand basic fundamentals of linguistics in Sanskrit language.

CO2 It enables students to develop a scientific approach to study the languages.

CO3 It facilitates students to know structure of a language i.e., phonology and phonetics, morphology and syntax etc.

CO4 It makes students capable of analysing the words and their meanings.

CO5 It makes students capable of classification of languages.

Bharatiy Rangshala SKT AEEC/SEC-305 AECC/SEC 3rd year

CO1 It enables students to know Various aspects of the article performances and production.

CO2 It Helps them knowing various technical words related to theatre.

CO3 It facilities students to acquire knowledge of the origin And development of theatre in India. CO4 It gives knowledge as how to construct rangmanch. CO5 It also describes types of rangmanch or rangshala

Department of Political Science

Government Arya Degree College Nurpur (Kangra)

- ***Course and Program Outcomes***

The course' s goal is to provide students with the ideas, theories, concepts, and trends they need to support their career choices and job opportunities. The goal of the course is to mold the students' perspective and understanding of the political and socioeconomic environments that exist in both the east and the west. In order to better prepare students for life' s various problems, the course also aims to hone their analytical skills and decision-making talents. In general, political science focuses on three primary course categories

- **The DSC and DSE Courses**
- **The SKILL Courses**
- **The GENERIC Courses**

Political theory and topics, Indian government and politics, comparative politics, and international relations are the primary DSC and DSE subjects being taught.

Political Theory and Themes: Presenting political theory (***Introduction to Political Theory- B.A. 1st Year***) and themes (***Themes in Comparative Political Theory- B.A. 3rd Year***) to the students, outlining its methods and background, and evaluating its modern and critical tendencies Theory enables students to differentiate between various types of political science inquiry and systematic normative investigation. Every notion has a relationship to an important political issue that needs to be analyzed using our conceptual knowledge. The capacity to name the key figures in contemporary Western political philosophy and to justify their significance is imparted to students. By applying political theorists' theories to current social situations, it develops in students the capacity to translate abstract theory into real-world issues.

Indian Government and Politics: Through the courses like " ***Indian Government and Politics" (B.A. 1st Year)*** and " ***Democracy and Governance" (B.A. 3rd Year)***, students can learn about the philosophy, the operation of the constitution, the nature of the state, and the functioning of the polity through this course. It will foster comprehension of Indian politics' nature, dynamics, and socioeconomic, cultural, and political contexts that influence Indian politics at the federal, state, and local levels.

Comparative politics: Students will be able to study authoritarian, democratic, unitary, federal, parliamentary, and presidential political systems with this course. Pupils will get the opportunity to investigate the various electoral systems and party systems that are used in various nations. The course will engage with the numerous themes of comparative analysis in industrialized and developing nations, with a focus on studying politics within a historical context.

International Relations (IR): The goal of the course is to teach students the information, awareness, and abilities necessary to comprehend national and worldwide political, cultural, and economic growth. Additionally, it gives policymakers insight into how to create policies both locally and globally. Understanding society and its issues- such as racial apartheid, poverty, hunger, human rights violations, and refugee crises- as well as raising awareness of one' s own and other people' s ideals and obligations are also beneficial. The core of the course consists of the most significant component of critical thinking, which follows scientific advancements and innovations in organizational efforts to promote international peace and security.

Skill Courses: ***Legislative Support, Public Opinion and Survey Research (B.A. 2nd Year), Democratic Awareness through Legal Literacy***, and ***Conflict and Peace Building (B.A. 3rd Year)*** are among the several skill courses being taught. The several skill classes are

designed to help students develop critical thinking skills, problem solving abilities, and an awareness of current trends in research technique. A broad grasp of the statutory provisions and legal standards is practically provided by the curriculum and the skill courses.

Generic Courses: The two general courses, ***" Society, Economy, and Politics in Himachal Pradesh"*** and " ***Human Rights, Gender, and Environment***" , will familiarize students with the history of this Himalayan state, starting with its humble feudal beginnings and continuing through its evolution and second course helps to enhance their understanding of the issues of human rights, gender and environment. Simultaneously, this also introduce students with the legal aspects of the same.

Career Outcome: The courses equip students with analytical, evaluative, and communication skills that will boost their chances of finding employment in a variety of public, private, and other sectors. Political science is therefore a subject that supports a wide range of careers as it is studied by teachers, lawyers, and those aspiring to the civil service in order to further their careers and develop their leadership, interpersonal, communication, problem-solving, and decision-making skills.

B A Program Outcomes

PO 1. The students acquire knowledge in the field of social sciences, literature and humanities which make them sensitive and sensible enough.

PO 2. The B.A. graduates will be acquainted with the social, economical, historical, geographical, political, ideological and philosophical tradition and thinking.

PO 3. The program also empowers the graduates to appear for various competitive examinations or choose the postgraduate programme of their choice.

PO 4.The B. A. program enables the students to acquire the knowledge with human values framing the base to deal with various problems in life with courage and humanity.

PO 5. The students will be ignited enough to think and act over the solution of various issues prevalent in human life to make this world better than ever.

PO 6. Programme provides the base to be the responsible citizen

PROGRAMME SPECIFIC OUTCOMES (PSOs) of B.A. in Economics (Core)

1. Understand basic concepts and theories of economics
2. Understand the relation/conflict between economic growth & environmental problems as well as economic growth & Social inequality
3. Have the idea of government economic policies both at national & international level
4. Ability Comprehend and evaluate economic policies at various levels
5. Ability to understand Financial Markets & it's working
6. Familiarity with basic quantitative tools and their applications in economics
7. Develop analytical ability and other cognitive skills.
8. Develop interest in taking up higher studies in economics, including research.

PRINCIPLES OF MICROECONOMICS - I -, DSC 101

CO1 Understand the determinants of demand and supple and concept of market equilibrium, surplus and shortage

CO2 Understand society's trade-offs by using a production possibilities frontier (or curve) as well as the concept of elasticity

CO3 Understand the concept of production and costs in detail

CO4 Learn how microeconomic concepts can be applied to analyze real-life economic situations.

CO5 Understand the characteristics of perfectly competitive markets and allocative efficiency under it

PRINCIPLES OF MICROECONOMICS II - DSC 102

CO1 Understand different forms of market imperfections and market failures observed in real life situations

CO2 Understand production is distributed among the different factors of production and the demand for inputs.

CO3 Understand the concepts of comparative and absolute advantage besides other issue in international trade

CO4 Understand imperfect competition including monopoly and monopolistic competition

CO5 Able to understand how is regulation of monopoly done

Principles of Macroeconomics I DSC 201

CO1 Understand the meaning of macroeconomics and various macroeconomic issues

CO2 Understand the meaning of GDP and its measurement

CO3 Understand the basics of national income accounting

CO4 Understand money, functions, demand and theories of money

CO5 Understand and evaluate fiscal and monetary policy outcomes

Principles of Macroeconomics II , DSC 202

CO1 Understand the basic analytical framework of IS-LM to understand the basic functioning of the macroeconomy
CO2 Understand the various theories of determination of national income
CO3 Understand the concept of inflation and its relationship with unemployment
CO4 Understand the basic concepts in an open economy such as balance of payments and determination of exchange rate
CO5 Able to critically examine and comment on effectiveness of various macroeconomic policies.

Economy of Rural Development SEC 204

CO1 Concept, Objectives and Indicators Rural Development Strategies
CO2 Theories of Rural Development Infrastructural Development
CO3 An Overview Rural Development Experiences in India – A Retrospective

SEC 206 DEMOGRAPHY

CO1 To make the students aware of the importance of population in economic development and the various theories that explain the growth of population in a country.
CO2 The paper also enlightens the students on the quantitative and the qualitative aspects and characteristics of the population through various demographic techniques

C-13: INDIAN ECONOMY – DSE 301

CO1 Understand the sector-specific policies and their impact in shaping trends in key economic indicators in India.
CO2 Understand the policy debates in India and evaluate the Indian empirical evidence.
O3 Able to understand the role of economic policies in shaping and improving economic performance in agriculture
CO4 Able to understand the role of economic policies in shaping and improving economic performance in manufacturing
CO5 Able to understand the role of economic policies in shaping and improving economic performance in services

DEVELOPMENT ECONOMICS – IN DSE 305

CO1 Understand the basics of development economics
CO2 Understand the aggregate models of growth
CO3 Understand the causes and measures of poverty, inequalities and unemployment.
CO4 Understand the growth experience of different nations across the globe that can help evaluate these models
CO5 Understand the political institutions and their relationship with economic performance

SEC 311: MONEY AND BANKING

CO1 Understand current monetary policies and financial market outcomes and critically evaluate policies.
CO2 Understand the theory and functioning of the monetary and financial sectors of the economy.

CO3 Understand the organization, structure, and role of financial markets and institutions.
CO4 Understand monetary management and instruments of monetary control.
CO5 Understand the Financial and banking sector reforms in India

SEC 309: RESEARCH METHODOLOGY

CO1 This course will be able to understand and comprehend the basics in research methodology and applying them in research/ project work.
CO2 This course will help them to select an appropriate research design.
CO3 With the help of this course, students will be able to take up and implement a research project/ study.
CO4 The course will also enable them to collect the data, edit it properly and analyse it accordingly.
CO5 Thus, it will facilitate students' prosperity in higher education.
CO6 The Students will develop skills in qualitative and quantitative data analysis and presentation.

GOVT ARYA DEGREE COLLEGE NURPUR

SSR- 2.6

PROGRAM: BACHELOR OF PHYSICAL EDUCATION

PROGRAME OUTCOMES (POs)

Physical Education students after successful completion of their Bachelors Degree (Major & Minor) were eligible for the job of physical education Teachers.
Students who has mastered the necessary movement skills , were able to participate confidently in many different forms of physical education activity and competitive sports.
Physical education students is able to understand the importance of maintaining good health.
Improved knowledge of rules and strategies of particular games and sports ebable students to emerge as a professional sports person.

On completion of Ba in physical education , students are able to:

Develop competency in many physical activities.
Students will be understand how they have perform in a variety of sports events.
Students will achieve and maintain a health-enhancing level of physical fitness.
Students will understand the relationship between history, culture and games.
Students will demonstrate responsible personal and social behaviour while participating in different sports activities.
Achieve a level of physical fitness for health and performance while demonstrating knowledge of fitness concepts, principles and strategies.

PROGRAM SPECIFIC OUTCOMES

BA 1ST YEAR

THEORY COURSE / PAPER 1 : INTRODUCTION TO PHYSICAL EDUCATION PED101TH, Discipline specific course (DSC-1A)

Students will gain the knowledge of the historical aspects of physical education and sports which will help in comparison of the recent development in the field of physical education.

PRACTICAL COURSE / PRACTICAL : ATHELETIC AND GAME 1 , PED101PR (DSC-1A PR)

Athletics is known as the mother of all games and students will learn about the:

Athletics

Event (shot put and long jump):

Introduction of event and brief history.
Basic skill and techniques.
IAAF rules and regulations.
Equipment required for the event.
No. of officials required and duties of official.
Techniques of the event.
Preparation and filling of score sheet.
Marking of the shot put/long jump field.

Game - 1

Badminton /Weightlifting: (Any one)

History of the game .
Measurement and preparation of the playfield.
Equipment required for the game.
Fundamental skills and lead up games.
Technics, Strategies and system of play.
Rules and regulations of the game.
National and International tournaments associated with the game.
Awards associated with the game.
Signals of officiating.

THEORY COURSE / PAPER 2 : OLYMPIC MOVEMENT AND ORGANIZATION OF TOURNAMENT PED102TH, Discipline specific course (DSC-1B)

Students will learn about the Olympic movement and basis of this they can organize sports event at state and national level.

This course will help students to know about the:

Athletics

Event (Sprints):

Introduction of event and brief history.
Basic skills and techniques.
IAAF rules and regulations.
Equipment required for the event.
No. of officials required and duties of officials
Techniques of the event.
Teaching stages of the event.
Preparation and filling of score sheet.
Marking of the track.

Game - 2

Basketball/Table Tennis: (Anyone)

History of the game.
Measurement and preparation of the playfield.
Equipment required for the game.
Fundamental skills and lead-up games.
Techniques, strategies and system of play.
Rules and regulations of the game.
National and International tournaments associated with the game.
Team/Individual records (World, Olympic, Asian and National Level) of the game.
Awards associated with the game.
Knowledge of score sheets.
Signals of officiating.

Discipline Specific Course-1C (DSC-1C) Human Anatomy and Physiology PED201TH

Students will learn about the anatomy and physiology of human structure. Which will help them to study sportsperson and their response to the training.

Discipline Specific Course-1C (Practical) {DSC-1C(PR)}:

Athletics and Game-3 PED201PR1.

Athletics: (High jump and Javelin)

Introduction of event and brief history.
Basic skills and techniques.
IAAF rules and regulations.
Equipment required for the event.
No. of officials required and duties of officials.

Techniques of the event.
Teaching stages of the event.
Preparation and filling of score sheet.
Marking of the shot high jump/javelin field.

Game – 3

Handball/Boxing (Anyone)

History of the game.
Measurement and preparation of the playfield/arena.
Equipment required for the game.
Fundamental skills and lead-up games.
Techniques, strategies and system of play.
Rules and regulations of the game.
National and International tournaments associated with the game.
Team/Individual records (World, Olympic, Asian and National Level) of the game.
Awards associated with the game.
Knowledge of score sheets.
Signals of officiating.

Discipline Specific Course-1D (DSC-1D) Sports Psychology PED202TH

This course will help in understanding the behaviour of sportsperson and its effect of sports performance. This will also increase their tenacity.

Discipline Specific Course-1D (Practical) {DSC-1D(PR)}

Athletics and Game-4 PED202PR

Athletics: (Discus throw and Triple jump)

Introduction of event and brief history.
Basic skills and techniques.
IAAF rules and regulations.
Equipment required for the event.
No. of officials required and duties of officials.
Techniques of the event.
Teaching stages of the event.
Preparation and filling of score sheet.
Marking of the discus throw/triple jump field.

Game – 4

Hockey/Judo (Anyone)

History of the game.
Measurement and preparation of the playfield/arena.
Equipment required for the game.
Fundamental skills and lead-up games.
Techniques, strategies and system of play.
Rules and regulations of the game.
National and International tournaments associated with the game.
Team/Individual records (World, Olympic, Asian and National Level) of the game.
Awards associated with the game.
Knowledge of score sheets.
Signals of officiating

Skill Enhancement Course-1 (SEC-1) Sports Medicine, Physiotherapy and Rehabilitation PED203TH

This course will help in understanding the pros and cons of the usage of the medicine and know about the adverse effect of doping. Besides this students will learn about different injuries, their cause, treatment and precautions and rehabilitation of the injury.

Skill Enhancement Course-2 (SEC-2) Sports Training PED204TH

Students will learn about the basic principles of sports training and the planning and preparation of the training schedule. They will also learn about the talent identification process and hoe to impart training to the beginners and to elite level athletes.

Skill Enhancement Course-3 (Practical) {SEC-3(PR)}

Specialization in Volleyball PED 301PR

Specialization in Football PED 302 PR

Specialization in Kabaddi PED 303 PR

History of game, measurement and preparation of the play field and equipment required for game.
Fundamental skills and lead-up games.
Techniques, strategies and method of play.
Rules and regulations of the game.
National and International tournaments associated with the game.
Team/Individual records (World, Olympic, Asian and National Level) of the game.
Awards associated with the game.
Duties of the officials.
Technical Equipment for officiating.

Knowledge of the score sheets.
Signals of officiating.
General and specific warming-up and cooling down.
Long-term and short-term preparation for the decisive volleyball competitions.
Psychological qualities and preparation of a volleyball player.
Offensive, defence system in play, service and reception pattern.
Individual, group and team tactics.
Diet and nutrition for a volleyball player.
Coordination among the manager, coach, doctor, psychologist and players.
Teaching of volleyball skills.
Preparing a lesson plan.
Specific training methods for different playing positions.

Skill Enhancement Course-4 (Practical) {SEC- 4 (PR)} Specialization in Athletics PED304PR

Introduction to athletics.
Historical developmental of athletics, Ancient Olympics and Modern Olympics games.
Historical review of track and field with special reference to India.
National and International level athletics championships: Olympic Games, Asian games, World Athletics, World Championship, Commonwealth Games, National Games, Open National, Youth National and Inter-Universities athletics championships.
Athletic track and its types.
Procedure and methods to mark the track (200m, 400m).
Marking and construction of Shot Put, Discus Throw, Javelin throw and Hammer throw arena.
Specification and construction of Long Jump, Triple Jump high jump and pole vault pit/runways etc.
Selected National and International personalities in athletics.
Need, importance and procedure of Warming-up and Cooling down.
First aid and rehabilitation of athletics injuries.

1. Track Events: Brief background, technique, training and important motor components of the following track events:

Sprints races: 100m, 200m, 400m; Hurdle Races: High Hurdle and Low Hurdle and Steeple Chase.
Middle and Long Distance Races: Combined Events: Decathlon and Hepthalon: Relay Races and Marathon.

2. Fields Events: Brief background, technique, training and important motor components of the following field events:

Shot put, Discus throw, Javelin throw and Hammer Throw.
Long Jump, Triple Jump, High Jump and pole vault.

Technical training and practice of following events:

Sprints Starting techniques, finishing techniques.
Shot put, Discus throw and Javelin throw (Basic Teaching Stages)
Long Jump, Triple Jump High Jump and Pole vault(Basic Teaching Stages)
Record files, calculations of straight, radius and staggers of standard tracks.
Relays: Holding of the baton and various types of baton exchange (visual and non-visual).

Discipline Specific Elective-1A (DSE1A) Recreation PED305TH Or Any One Kinesiology and Biomechanics PED306TH

Students will able to identify biomechanical, health, physiological, and psychological limitations and interventions for improving physical performance.
Analyze and explain the mechanisms underlying biomechanical, physiological and psychological changes that occur during after acute and chronic exercise.
Develop physical conditioning programs based on scientific principles designed to develop physical fitness and improve athletic performance.
Understand mechanical principles can be applied to the analysis of human movement to assess and improve performance and reduce risk of injury.
Know effectiveness of human movement using mechanical principles.

Discipline Specific Elective-1B (DSE-1B) Methods of Teaching in Physical Education PED307TH Or Officiating and Coaching PED308

After studying this course students will able to mark Track and Field and Officiate.
Able to understand the rules of the games and sports.
Able to give seeding and Heats in Track and Field, Combined Events.
Design and practice the new methods of technique of officiating. And teaching. They will also enhance their teaching skills and abilities.

Government Arya Degree College Nurpur Distt. Kangra(H.P)

SSR 2.6

Program: Bachelor of Arts (B.A)

Degree Program-BA with Music Instrumental

Subject: Music(I)

HINDUSTANI MUSIC

Programme Specific Outcomes

- These courses will definitely be beneficial to those students who wants to pursue Music as a profession
- These courses will enhance the capabilities of students in other fields too, with aptitude and interest in music.
- With this course students will be able to achieve their graduation degree besides improving their skills in Music.
- They can go higher studies in performing arts.
- They can become music Teachers, Instructors.
- Students can also become professional and pursue their careers as professional artists.
- Students will be in a position to appreciate the rich Indian Culture and performing arts.
- This course will also lead to self-actualization by the students which will enhance their self-esteem.

Course Outcome (Cos)

B.A 1st-YEAR PAPER- I

Code	Course Title	Course Type
MUSA101TH	Basic Principals of Indian Music & Biographic of Musicians, Composers and Musicologists	Theory

On Completion of this course the students will be able to:

- Understand the basic music terminology
- Understand about the different types of Music Instruments.
- Understand the importance of rhythm in Music.
- Know about the description of Raga.

B.A 1st-YEAR PAPER-I

Code	Course Title	Course type
MUSA102PR	Stage Performance	Practical

On Completion of this course the students will be able to:

- Identify the voice of musical instruments.
- Understand the different musical notes
- Know about the elaboration of Raga.

B.A 1st -YEAR PAPER-II

Code	Course Title	Course type
MUSA103TH	Theory of Indian Music & Biographies of Musicians, Composers & Musicologist	Theory

After completing the course students are expected to be able to:

- Know about different musical terms.

- Understand the complete description of Raga.
- Understand the types of Thaata

B.A 1st -YEAR PAPER-II

Code	Course Title	Course Type
MUSA104PR	Viva-Voce	Practical

On successful completion of the course, students will be able to:

- Learn about the Music rotation system
- Understand relationship between sounds
- Demonstrate basic Tala

B.A 2nd -YEAR PAPER-III

Code	Course Title	Course Type
MUSA201TH	Theory of Indian Music, Ancient Grantha's & Contribution of Musicologist	Theory

On successful completion of the course:

- Students will be able to understand the concept of music in different ancient Grantha's
- They will be able to write compositions in Music rotation system
- The students will be able to know about the different singing and playing styles of Indian Classic music

B.A 2nd -YEAR PAPER-III

Code	Course Title	Course Type
MUSA202PR	Stage Performance	Practical

On successful completion of the course, students will be:

- More confident to play / sing Ragas on the stage.
- Know about Ragas Malkouns, Marubihag and vrindavani sarang

B.A 2nd -YEAR PAPER-IV

Code	Course Title	Course Type
MUSA203TH	Theory of Indian music, Medieval Grantha's and contribution of Musicians & Musicologist	Theory

On Completion of this course the students will be:

- Know about the contribution of Musicians.
- Know about the different Tala.

B.A 2nd -YEAR PAPER-IV

Code	Course Title	Course Type
MUSA204PR	Viva-Voce	Practical

On successful completion of the course, students will be:

- Know how to play Tala on Tabla.
- Know how to play Harmonium.

B.A 2nd -YEAR SEC-I/II

Code	Course Title	Course Type
MUSA205PR/206PR	Presentation and Documentation-I/II	Practical

On successful completion of the course, students will be able to:

- Improve their performing skills
- Prepare the presentations

B.A 3rd -YEAR SEC – III/IV

Code	Course Title	Course Type
MUSA301PR/302PR	Presentation and Documentation-III/IV	Practical

On successful completion of the course, students will:

- Improve their performing skills.
- Be familiar with the basic techniques of Tabla and Harmonium

B.A 3rd -YEAR DSE- IA

Code	Course Title	Course Type
MUSA303TH	Theory Indian Music and study of ancient Grantha's and Ragas	Theory

On successful completion of the course, students will be able to:

- Understand the concept of music from Ancient Grantha's.
- Know about the relevance of time theory in Hindustani classical music.

B.A 3rd -YEAR DSE- IA

Code	Course Title	Course Type
MUSA304PR	Stage Performance	Practical

On successful completion of the course, students will be able to:

- To demonstration Razakhani Gat and Maseetkhani Gat.
- Know about Raga Todi Bhairvi and Darbari Kanda.

B.A 3rd -YEAR DSE- I B

Code	Course Title	Course Type
MUSA305TH	Theory of Indian music and Grantha Tradition	Theory

On successful completion of the course, students will be:

- Learn about Gharana Parampra.
- Know about ten Thaats.
- Know about relation between Hindustani Music and Filmi Music.

B.A 3rd -YEAR DSE- 1B

Code	Course Title	Course Type
MUSA306PR	Viva-Voce	Practical

On successful completion of the course, students will be:

- Learn about Madhya Laya.
- Able to recite Tilwada, Jhaptala on Tabla.

B.A 3rd -YEAR GE- I

Code	Course Title	Course Type
MUSA307TH (Generic Elective)	Theory of Indian Music and Folk Music of H.P	Theory

On successful completion of the course, students will be:

- Know about the folk music of Himachal Pradesh.
- Know about different folk instruments i.e. Ransingha, Nagara, Shehnai, Karnal.
- Know about different Talas i.e. Teen Tala, Dadra.
- Know about different Ragas i.e. Yaman, Bhairav.

B.A 3rd -YEAR GE- II

Code	Course Title	Course Type
MUSA308PR (Generic Elective)	Practical	Practical

On successful completion of the course, students will be:

- Able to Ply Raga on Sitar.
- Know about basic strokes of Sitar.
- Be able to play different Alankar's on Sitar.

Department Of Music
Bharti Bhagsain
Asst. Prof. Music(I)

BA (Geography)

Program Outcomes/Program Specific Outcomes:

Geography mainly concerns changes in spatial attributes in a temporal perspective. Geography with its multidisciplinary approach has been structured by keeping in mind the specific educational and professional goals of the students. By the end of the first year of the programme, the students will be able to understand the general concepts of physical geography and cartography. After the completion of second year students can easily differentiate between the two main branches of geography i.e. Physical Geography and Human Geography. Along with this students will be having the basic knowledge of human environment relationship, regional planning and remote sensing. At the end of the third year or after completing the course, the students will be having the essential understanding of Indian geography, disaster management, GIS and field work which amply prepared them for professional careers in geography and allied disciplines like GIS and remote sensing.

Course Outcomes

S.No.	Course Name & Course Code	Course Type	Course Outcome
		First Year	
1.	Physical Geography (GEOGP101CC)	DSC-1	Course will enable the students to understand: Definition and scope of physical geography Solar system, tidal theory and big bang theory of earth' s origin Rocks classification and their characteristics Internal structure of earth, theory of plate tectonics Weathering and its types Fluvial cycle of erosion Structure and composition of atmosphere, heat balance, pressure and wind systems Tropical cyclones, monsoon, koppen' s climatic classification Hydrological cycle, bottom relief features of Pacific Ocean, tides and currents.

2.	General Cartography (GEOGP102 CC)	DSC-2	Course will enable the students to understand: Map: its definition, classification and significance Scale: its definition, importance and types Map projections Data representation methods like line graph, bar diagrams, Isopleth, Choropleth, Dot method, Climograph and Hythergraph
		Second Year	
3.	Human Geography (GEOGP201CC)	DSC-1	Course will enable the students to understand: Contemporary relevance of human geography and its major sub-fields World distribution of population, density and growth Demographic transition theory Classification and world distribution of human races, major religions and major languages Types and patterns of rural and urban settlements Trends and patterns of world urbanization
4.	Environmental Geography (GEOGP202CC)	DSC-2	Course will enable the students to understand: Definition and scope of environmental geography Meaning and components of environment Concept, components and functionsof ecosystem Human-environment relationship Biomes of mountain and desert regions Environmental problems and biodiversity loss Environmental management initiatives like environmental protection act, 1982, environmental policy of India (2006) and chipko movement
5.	Regional Planning and Development (GEOGP203SEC)	SEC	Course will enable the students to understand: Definition and characteristics of regional planning Concept of regionalization Growth pole theory and core periphery model Regional development initiatives like integrated tribal development programme (itdp) and damodar valley corporation(dvc)

			Climate and soils of India Population size, distribution, density and growth since 1901 Literacy, sex ratio Rural and urban settlement types and patterns Power and mineral resources of India Agriculture and industries of India
8.	Economic Geography (GEOGP303- 2DSE)	DSE-1 Option -2	Course will enable the students to understand: Approaches and fundamental concepts of economic geography Agriculture locational theory of Von Thunen Industrial location theory of Weber Economic activities such as primary, secondary, tertiary and quaternary Major industrial regions of eastern north American region and western European region Major oceanic routes of Atlantic, Pacific and Indian ocean Concept of international trade
9.	Disaster Management (GEOGP304- 1DSE)	DSE-2 Option -1	Course will enable the students to understand: Hazards, risk, vulnerability and disasters Natural disasters such as landslide, earthquake, and cyclone Human induced disasters such as forest fire and road accidents Disaster management phases like mitigation, preparedness, response and recovery Community based disaster management NDMA and NIDM do' s and don' ts during disasters
6.	Remote Sensing and GPS (GEOGP204SEC)	SEC	Course will enable the students to understand: Remote sensing Aerial photography Satellite remote sensing Bases of visual interpretation of remote sensing images Global positioning system (gps)
		Third Year	
7.	Geography of India (GEOGP303- 1DSE)	DSE-1 Option -1	Course will enable the students to understand: Location and major physiographic region of India

10.	Geography of Tourism (GEOGP304- 2DSE)	DSE-2 Option -2	Course will enable the students to understand: Types of tourism Impact of tourism on environment and society Tourism I(nfrastructure
11.	Geographic Information System (Practical) (GEOGP301SEC)	SEC	Course will enable the students to understand: Geographic information system (GIS) GIS data types and data structures Concept of geo-referencing and spatial referencing system Editing and attribute data integration GIS based exercises on geo-referencing, sub-setting, extraction of land use/land cover and thematic mapping

12.	Field Techniques and Survey based Project Report (Practical) (GEOGP302SEC)	SEC	Course will enable the students to understand: Importance of field work in geographical studies Role, value and ethics of field-work Various field techniques and their merits and demerits Questionnaires (open/ closed / structured / non-structured) Interview with special focus on focused group and space survey Designing and writing the field report
13.	Disaster Risk Reduction (GEOGP305-GE1)	GE-1	Course will enable the students to understand: Hazards, risk, vulnerability and disasters Natural disasters such as landslide, earthquake, and cyclone Human induced disasters such as forest fire and road accidents Disaster management phases like mitigation, preparedness, response and recovery Community based disaster management NDMA and NIDM do' s and don' ts during disasters
14.	GE-2 Sustainability and Development	GE-2	Course will enable the students to understand: Sustainable development need and its realization in Indian context The millennium development goals National strategies and international experiences Inclusive development Role of higher education in achieving sustainability Policies and global cooperation for climate change Sustainable development policies and programmes Financing for sustainable development National environmental Policy

GOVT.ARYA DEGREE COLLEGE NURPUR

SSR-2.6

PROGRAM: Bachelor of COMMERCE

PEOGRAM OUTCOMES (POs)

The students having completed B.Com will be able to:-

PO1 - Enables learners to get theoretical and practical exposure in the commerce sector which includes Accounts, Commerce, Marketing, Management, Economics, Environment etc.

PO2 - Develops communication skills and build confidence to face the challenges of the corporate world.

PO3 - Enhances the capability of decision making at personal and professional levels.

PO4 – Makes students industry ready and develop various managerial and accounting skills for better professional opportunities.

PO5 - Develops entrepreneurial skills amongst learners.

PO6 - Strengthens their capacities in varied areas of commerce and industry aiming towards holistic development of learners.

PO7 - Thus, after completing their graduation learners develop a thorough understanding of the fI. B.Com

Program specific course

PSO1 - Learners venture into Managerial positions, Accounting areas, Banking Sectors, Auditing, Company Secretaryship, Teaching, Professor, Stock Agents, Government Employment etc.

PSO2 - Enables learners to prove themselves in different Professional examinations like CA, CS, CAT, GRE, CMA, MPSC, UPSC etc.

PSO3 -Learners further move towards research in the field of Commerce.

PSO4- Enables students to demonstrate Progressive learning of various tax issues and tax forms related to individuals and businessmen and setting up their own business start up

. PSO5 – The vast syllabi covers various fields of commerce and accountancy which helps students grasp practical and theoretical knowledge and fundamentals in Commerce and Finance.

COURSE OUTCOMES (COs)

B.COM 1th YEAR

Core course C-1 :Financial accounting, BC1.1: Credits 6.

The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting and to impart skills for recording various kinds of business transactions.

CO1) Have information about the Accounting Standards prescribed.

CO2) understand the meaning and the accounting procedure of Joint Venture Business.

CO3) knowledge about the accounting procedure adopted by co-operative societies, while preparing the final accounts. They also get exposed to legal requirements of preparing final accounts of single proprietor.

CO4) Understand technical procedure about maintaining accounts books.

CO5) learn about the branch accounting and its procedure.

Paper BC 1.2: BUSINESS ORGANISATION AND MANAGEMENT , core course C-2

Credits-6

The course aims to provide basic knowledge to the students about the organization and management of a business enterprise.

CO1) understand the concept, objective, importance of business

CO2) Understand various forms of Business organisation and their functioning.

CO3) Learn about the managerial powers, functions and strategies

CO4) Aware about various theories of management and communication

Paper- BC 1.3 : BUSINESS LAW, core course c-4, credits 6

The objective of the course is to impart basic knowledge of the important business legislation along with relevant case law.

CO1 Understand the legal provisions relating to Indian Contract Act.

CO2 Develop skills in ensuring the legality of a contract.

CO3 Know the consequences in case of the breach of a contract.

CO4 Comprehend all the significant aspects related to special contracts and the associated legal provisions.

CO5 Gain knowledge about the laws in connection with the Sale of Goods Act. CO6 Familiarize with the Indian Partnership Act and its applications in business dealings.

Paper BC 1.4. BUSINESS STATISTICS AND MATHEMATICS :core course C-5,credits6

The objective of this course is to familiarize students with the applications of statistical techniques and mathematics in business decision-making

CO1) Knowledge about mathematics & statistics to undergraduate students of commerce

CO2)Having information field of commerce & industries to solve the real life problems.

CO3) Facilitates decision making with the help of decision making techniques

B.Com.: YEAR II

Paper BC 2.1: COMPANY LAW ,core course C-7,credits-6

: The objective of the course is to impart basic knowledge of the provisions of the Companies Act 2013. Case studies involving issues in company law are required to be discussed.

CO1) Understand various formalities related to company promotion, share issue and information about prospectus.

CO2) Having information about Company act 2013 and its amendments.

CO3) Having information about different types of companies, shares, capital and the important documents of Memorandum and Articles of Association.

Paper- BC 2.2: INCOME TAX LAW AND PRACTICE, Core course C-8,CREDITS 6

To provide basic knowledge and equip students with application of principles and provisions of Income-tax Act, 1961 and the relevant Rules.

CO1) understand the basic concepts involved in Income tax act an also the basics of income tax.

CO2) Gain knowledge about the residential status of individuals and organisations as income tax assesses.

CO3) Having knowledge about the minute details of taxable, partly taxable and fully exempted incomes in India.

CO4) detailed knowledge about the provisions, rules and aspects of taxation of income from salary including taxation of various allowances, perquisites and also benefits like pension and gratuity as prescribed in respective acts.

CO5) Having knowledge provisions of taxation of house property, Income from other sources and also income from business and profession. They also learn about the procedure of calculating taxable amounts of individual as well as organisations.

CO6)Understand procedure of filing tax returns, Advance tax and tax funds.

B.C2.3 COMPUTER APPLICATIONS IN BUSINESS(SEC)-1,CREDITS 4

The objective of this paper is to provide computer skills and knowledge for commerce students and to enhance the student understands of usefulness of information technology tools for business operations.

CO1) Having Knowledge about computer environment & operating systems • Knowledge about the accounting packages like tally.

CO2) To develop skill and knowledge among students in applications of internet in education of commerce. •

CO3)Gain knowledge about the communication of Web page visitor using Message and Input boxes. •

CO4) Understand DOM to control the layout of HTML pages, add effects, and get information from users.

Paper BC 2.4: CORPORATE ACCOUNTING,CORE COURSE C-11,credits 6

: The objective of this paper is to enable the students to acquire the basic knowledge of the corporate accounting and to learn the techniques ofpreparing the financial statements.

CO1) Learn and be familiar with Corporate Accounting in conformity with the provisions of Companies Act.

CO2) Gain competency in the nuances of Corporate Accounting.

CO3) Acquire knowledge about Shares and debentures.

CO4) Comprehend the required steps in company formation.

CO5 Gain knowledge about Internal and External Reconstruction of companies.

Paper BC 2.5: COST ACCOUNTING,CORE COURSE C-12,Credits 6

The objective of this paper is to acquaint the students with basic concepts used in cost accounting, various methods involved in cost ascertainment and cost accounting book keeping systems.

CO1) To provide knowledge regarding costing techniques.

CO2) To give training as regards concepts, procedures and legal Provisions of cost audit.

Paper BC 2.6: E-COMMERCE (SEC)-2,CREDITS 4

The objective of this paper is to enable the student to become familiar with the mechanism for conducting business transactions through electronicmeans.

CO1) Knowledge about the how to plan and manage ecommerce solutions, analyze the security issues over the web,

CO2) Learners enlightened by useful knowledge and demonstrate correct application of advanced features of Excel.

CO3) Learners enlightened by various formulas used in Excel, how to debug them, audit them and how to use which formula for which occasion.

CO4) enlightened by Visual Basic 's Integrated Development Environment and also will be able to design a web page with its design and diagramming tools

CO5) Understand the solutions and future aspects of ecommerce security

B.COM III YEAR

Paper BC 3.1(c): CORPORATE GOVERNANCE AND AUDITING,(DSE)-1,CREDITS 6

The course aims to provide knowledge of Corporate Governance, Business Ethics and Corporate Social Responsibility principles, procedures and techniques in accordance with current legal requirements and professional standards and to give an overview of the principles of auditing.

CO1 Understand the accounting system, principles, concepts and basics of auditing.

CO2 Gain knowledge about the internal control, the internal check and the internal audit.

CO3 Learn vouching, valuation of assets and liabilities and their verification.

CO4 Know about the appointment, rights, duties and the liabilities of an auditor

Paper BC 3.2(a): FUNDAMENTALS OF FINANCIAL MANAGEMENT (DSE)-2 Credits 6

The course aims to familiarize the students with the principles and practices of financial management.

CO1)To develop financial analysis skills

CO2) To understand the importance and use of ratio analysis.

Paper BC 3.3: ENTREPRENEURSHIP,(SEC)-3 CREDITS 4

The course aims to orient the learner toward entrepreneurship as a career option and creative thinking and behavior.

CO1) Understanding the meaning, need and role of entrepreneur in the development of economy

C02) Providing knowledge about preparing project report for the new business.

CO3) Giving information about Govt. support and incentives to new enterprises.

Paper BC 3.5 (c): MANAGEMENT ACCOUNTING,(DSE)-3,CREDITS 6

: The course aims to impart the students, knowledge about the use of financial, cost and other data for the purpose of managerial planning, control and decision making.

C01)Learn about the concept, objectives, importance and benefits of management accounting along with the basic advantages and significance of various techniques of management accounting.

C02)) understand the importance of various comparative ratios like profitability ratios, turnover ratios, and balance sheet ratios.

C03) Knowledge various budgets like cash budget, flexible budgets and capital budgets help in drafting budget and budget control measures in organisations.

C04)Understand marginal cost statements helps in finding out the break-even point and ascertaining possible profit figures at various levels of activities.

Paper BC 3.6(a): INTERNATIONAL BUSINESS,(DSE)-4 Credits 6

: The objective of the course is to familiarize the students with the concepts, importance and dynamics of international business and India's involvement with global business.

Gain theoretical foundations of international business to the extent these are relevant to the global business operations and developments.

C01 Understand the international business environment in the current scenario.

C02 Know about the role of IMF, World Bank, ADB and WTO in initiating international business venture

C03 Learn about the concept of Balance of Payment and study about flow of goods and services between countries.

C04 Gain knowledge on the functioning of Multinational Corporations and their trade relationship with Indian Companies.

C05 Grasp knowledge on Foreign Direct Investment

C06 Get motivated to start international business.

Paper BC 3.7 : PERSONAL SELLING AND SALESMANSHIP(SEC)-4,CREDITS 4

The purpose of this course is to familiarize the students with the fundamentals of personal selling and the selling process. understand selling as a career and what it takes to be a successful salesman.

C01 Know the role of salesmanship.

C02 Equip with the skills needed for a successful salesman.

C03 Learn the characteristics of a good salesman.

C04 Analyze the common buying motives of the people.

C05 Prepare a comprehensive sales report.

Paper BC 3.8: INDIAN ECONOMY(GC)-2,CREDITS 6

: This course seeks to enable the student to grasp the major economic problems in India and their solutions. It also seeks to provide an understanding of modern tools of macro-economic analysis and policy framework.

C01)To enable students in understanding the difference between functioning of Planning commission and NITI Aayog.

C02) To identify the difference between economic growth and economic development; and understanding infrastructure.

C03) To understand the population and various types of unemployment in underdeveloping countries and identify various remedies to it,

C04)To enable students to have insights about public expenditure, public revenue and public debt and India’ s fiscal deficit and recent policies of government

Programme Outcomes (Pos) for Bachelor of Vocation in Hospitality & Tourism

Introduction

Bachelor of Vocation (B.Voc - Tourism and Hospitality Management) is a three-year Degree program with multiple exits/entries such as Diploma /Advanced Diploma relating to tourism, travel and Hospitality. The course would provide adequate knowledge and skills for employment in the industry.

Key Components of B.Voc Hospitality and Tourism

PO 1: Practical Training

Outcome: Hands-on experience is a cornerstone of vocational education, allowing students to apply theoretical knowledge in real-world scenarios.

PO2: Industry-Relevant Curriculum

Outcome: Tailored courses designed in collaboration with industries ensure that students learn the skills in demand.

PO3: Work-Based Learning

Outcome: Exposure to real work environments through internships and apprenticeships enhances the learning experience.

programme Specific Outcomes(PSOs) for Bachelor of Vocation in H&T

PSO 1: Mastery of Hospitality Operations

Outcome: Graduates will master the key operational areas of the hospitality industry, such as front office operations, housekeeping, food and beverage management, and event planning.
Measurement: Success in practical lab exercises, performance during internships, and assessments in operational management courses.

PSO 2: Expertise in Tourism Management

Outcome: Graduates will demonstrate expertise in tourism management, including destination marketing, tour operations, and sustainable tourism practices.
Measurement: Completion of tourism management projects, evaluations from internships at tourism agencies, and success in relevant coursework.

PSO 3: Advanced Customer Service Techniques

Outcome: Graduates will apply advanced customer service techniques to enhance guest satisfaction and loyalty, utilizing effective communication and problem-solving skills.
Measurement: Customer service simulation results, feedback from industry placements, and customer satisfaction surveys.

PSO 4: Sustainable and Ethical Practices Implementation

Outcome: Graduates will implement sustainable and ethical practices within hospitality and tourism operations, contributing to environmental conservation and social responsibility.
Measurement: Implementation and analysis of sustainability projects, ethical practice case studies, and performance in sustainability-focused courses.

PSO 5: Proficient Use of Industry Technology

Outcome: Graduates will proficiently use contemporary technology and software applications specific to the hospitality and tourism industry for efficient management and operations.
Measurement: Practical exams on industry software, technology integration projects, and continuous assessments of technological proficiency.

PSO 6: Financial and Revenue Management Skills

Outcome: Graduates will apply financial management and revenue optimization techniques to enhance the profitability and financial stability of hospitality and tourism enterprises.
Measurement: Financial analysis projects, budget management exercises, and revenue management simulations.

PSO 7: Leadership and Management Competence

Outcome: Graduates will demonstrate strong leadership and management skills, capable of leading diverse teams and managing complex hospitality and tourism operations.
Measurement: Leadership role evaluations, performance in management courses, and feedback from team-based projects.

PSO 8: Strategic Marketing and Sales Strategies

Outcome: Graduates will develop and implement strategic marketing and sales strategies tailored to the unique needs of the hospitality and tourism sectors.
Measurement: Marketing plan presentations, sales strategy assignments, and analysis of real-world marketing campaigns.

PSO 9: Comprehensive Legal Knowledge

Outcome: Graduates will possess comprehensive knowledge of the legal aspects relevant to the hospitality and tourism industry, including contracts, liability, and regulatory compliance.
Measurement: Legal case study analyses, written exams on hospitality law, and compliance audit projects.

PSO 10: Enhanced Analytical and Research Capabilities

Outcome: Graduates will have enhanced analytical and research capabilities, enabling them to conduct thorough research and apply data-driven decision-making in hospitality and tourism contexts.
Measurement: Research project completions, data analysis assignments, and success in courses focused on research methodology and analytics.

Implementation Strategy

To achieve these programme-specific outcomes, the curriculum will integrate a mix of theoretical knowledge and practical application through:

Classroom Instruction: Core and elective courses focusing on various aspects of hospitality and tourism.
Practical Training: Laboratory exercises, fieldwork, and simulated environments.
Internships: Hands-on industry experience in various sectors of hospitality and tourism.
Projects and Case Studies: Real-world applications of theoretical knowledge.
Industry Interaction: Guest lectures, workshops, and industry visits.
Continuous Assessment: Regular evaluations through exams, projects, and practical assessments.

By aligning the program structure and curriculum with these specific outcomes, graduates will be well-prepared to excel in the dynamic and diverse fields of hospitality and tourism.

Course outcome

Course Title: Guest Service Associate

Class: B.voc H&T Level-4 Semester -1st

Course Outcomes for Guest Service Associate

1. Proficiency in Customer Interaction

Outcome: Graduates will demonstrate excellent customer interaction skills, including effective communication, problem-solving, and conflict resolution.
Measurement: Role-playing exercises, customer service simulations, and feedback from practical training.

2. Understanding of Hospitality Operations

Outcome: Graduates will have a thorough understanding of front office operations, including check-in/check-out procedures, reservation systems, and guest relations.
Measurement: Performance in practical assessments, written exams on operational procedures, and successful completion of internships.

3. Mastery of Point-of-Sale Systems

Outcome: Graduates will be proficient in using point-of-sale (POS) systems and other technology tools commonly used in hospitality settings.
Measurement: Practical exams on POS system usage, technology skill assessments, and project work involving real-world scenarios.

4. Knowledge of Hospitality Industry Standards

Outcome: Graduates will understand and adhere to industry standards and best practices in guest service, including hygiene, safety, and security protocols.
Measurement: Compliance audits, written tests on industry standards, and practical evaluations during internships.

5. Effective Handling of Guest Complaints

Outcome: Graduates will effectively handle guest complaints and feedback, utilizing appropriate techniques to ensure guest satisfaction and loyalty.
Measurement: Case study analyses, role-playing exercises, and performance reviews from internships.

Course Title: Guest Service Executive

Class: B.voc H&T Level-5 Semester -2nd

1. Advanced Customer Service Skills

Outcome: Graduates will demonstrate advanced customer service skills, ensuring exceptional guest experiences through effective communication, active listening, and empathy.
Measurement: Customer feedback surveys, role-playing scenarios, and evaluations from practical training sessions.

2. Proficiency in Hospitality Operations

Outcome: Graduates will be proficient in managing front office operations, including guest check-in/check-out, reservations management, and handling special requests.

Measurement: Performance in practical assessments, successful completion of internships, and operational management exams.

3. Leadership and Team Management

Outcome: Graduates will display strong leadership and team management abilities, capable of supervising staff, delegating tasks, and fostering a collaborative work environment.
Measurement: Leadership role evaluations, peer reviews, and feedback from team-based projects and internships.

4. Expertise in Technology and Systems

Outcome: Graduates will be adept at using hospitality management systems, including property management systems (PMS), point-of-sale (POS) systems, and customer relationship management (CRM) software.
Measurement: Practical exams on system usage, technology integration projects, and continuous assessment of technological proficiency.

5. Conflict Resolution and Problem-Solving

Outcome: Graduates will effectively resolve conflicts and address guest complaints, employing problem-solving techniques to maintain high levels of guest satisfaction.
Measurement: Case study analyses, role-playing exercises, and performance reviews from practical training and internships.

Course Title: Duty Manager

Class: B.voc H&T Level-6 Semester -3rd & 4th

1. Leadership and Team Management

Outcome: Graduates will demonstrate strong leadership and team management skills, capable of supervising and motivating staff to achieve high performance and ensure smooth operations.
Measurement: Performance evaluations, peer reviews, and feedback from supervised projects and internships.

2. Comprehensive Operational Knowledge

Outcome: Graduates will have a thorough understanding of the various operational aspects of a hospitality business, including front office, housekeeping, food and beverage, and maintenance.
Measurement: Practical assessments, operational management exams, and successful completion of internships.

3. Customer Service Excellence

Outcome: Graduates will provide exceptional customer service, effectively handling guest inquiries, complaints, and special requests to ensure guest satisfaction and loyalty.
Measurement: Customer feedback surveys, role-playing scenarios, and practical training evaluations.

4. Crisis and Conflict Management

Outcome: Graduates will manage crises and resolve conflicts efficiently, maintaining calm and effective operations during emergencies and resolving disputes to the satisfaction of all parties involved.
Measurement: Crisis management simulations, conflict resolution case studies, and performance reviews from practical training and internships.

5. Financial Acumen

Outcome: Graduates will possess financial management skills, including budgeting, cost control, and revenue management to ensure the financial health of the hospitality establishment.
Measurement: Financial management exams, budgeting exercises, and financial project reports.

6. Regulatory Compliance and Safety Standards

Outcome: Graduates will ensure compliance with health, safety, and legal regulations, maintaining a safe and legally compliant environment for both guests and staff.
Measurement: Compliance audits, safety training assessments, and evaluations from regulatory scenario analyses.

Course Title: Front Office Manager

Class: B.voc H&T Level-7 Semester -5rd & 6th

1. Leadership and Team Management

Outcome: Graduates will demonstrate effective leadership and team management skills, capable of supervising front office staff, fostering a positive work environment, and ensuring high performance.
Measurement: Performance evaluations, peer reviews, and feedback from team-based projects and internships.

2. Comprehensive Front Office Operations Knowledge

Outcome: Graduates will possess a thorough understanding of front office operations, including reservation management, check-in/check-out procedures, guest services, and night auditing.
Measurement: Practical assessments, operational management exams, and successful completion of internships.

3. Customer Service Excellence

Outcome: Graduates will deliver exceptional customer service, effectively addressing guest inquiries, complaints, and special requests to ensure high levels of guest satisfaction and loyalty.
Measurement: Customer feedback surveys, role-playing scenarios, and practical training evaluations.

4. Effective Communication Skills

Outcome: Graduates will exhibit strong verbal and written communication skills, enabling effective interaction with guests, staff, and management to ensure clear and efficient operations.
Measurement: Communication skills assessments, role-playing exercises, and evaluation of written and oral presentations.

5. Crisis and Conflict Management

Outcome: Graduates will effectively manage crises and resolve conflicts, maintaining calm and efficient front office operations during emergencies and resolving guest disputes to satisfaction.
Measurement: Crisis management simulations, conflict resolution case studies, and performance reviews from practical training and internships.

6. Regulatory Compliance and Safety Standards

Outcome: Graduates will ensure compliance with health, safety, and legal regulations, maintaining a safe and legally compliant front office environment for both guests and staff.
Measurement: Compliance audits, safety training assessments, and evaluations from regulatory scenario analyses.

7. Professionalism and Ethical Conduct

Outcome: Graduates will uphold professionalism and ethical conduct in all interactions, maintaining integrity, respect, and a positive attitude towards guests, colleagues, and management.
Measurement: Professional behavior assessments, ethical scenario analyses, and continuous feedback from industry mentors and supervisors.

Department of Vocational Studies

(B.Voc. Retail Management)

Course outcomes:

1. Define retailing, describe the different types of retailers and outline some of the characteristics of successful retail managers, including entrepreneurs/small business owners and department store managers.

2. List and explain essential retail management concepts, such as buyers and vendors; customer service; customer loyalty, and consumer behaviour; retail planning process and electronic retailing; retail strategy, pricing strategy, assortment planning, branding strategy, global growth strategy/niche marketing and market personalization/entrepreneurship development and information system and supply chain management.

3. Evaluate current retailing trends based on consumer, legal and competitive environments.

4. Identify the key stakeholder and the roles/responsibilities of retail towards these stakeholders.

5. Evaluate the implementation of marketing strategy through the retail mix including product and merchandise mix, pricing, location and store- design, promotions, and store management to improve the total customer experience and retailer market competitiveness.

6. Describe how retailers build a sustainable competitive advantage through human resource management and identify related issues, challenges, and trends, including employee motivation, evaluation, and compensation.

7. Outline the customer' s relationship management process, describe how retailers collect customers' data and explain how that data is use to gain strategic advantage, support communication programme and develop customer loyalty.

8. Identify various retail opportunities and evaluate the strategies associated with each type of opportunity.

9. Distinguish and characterize the factors and management tools that retailers consider and use when developing their merchandise mix.

10. Interpret retail problems and be capable of critically evaluating and applying appropriate retail management models and theories to generate strategic and tactical solutions.

11. Make students capable for getting job in the retail industry or entrepreneur in the sector.

Skill Component- Retail Team Leader (NSQF level— 4) Year – 1st (Semester-1)

Subject outcomes:

1. To help maintain health and safety.

2. To allocate and check work in your team.

3. To work effectively in a retail team.

4. To work effectively in an organisation.

5. RAS/N0139: To plan visual merchandising.

6. To establish and satisfy customer needs.

7. To communicate effectively with stakeholders.

8. To organize the display of products at the store.

9. To process the sale of products.

10. To maintain the availability of goods for sale to customers.

11. To monitor and solve customer service problems.

Skill Component- Retail Departmental Manger (NSQF level— 5) Year – 1st (Semester-2)

Subject outcomes:

1. To help maintain health and safety

2. To allocate and check work in your team

3. To work effectively in a retail team

4. To work effectively in an organisation

5. To plan visual merchandising

6. To establish and satisfy customer needs

7. To monitor and manage store performance

8. To provide leadership for your team

9. To build and manage store team

10. To develop individual retail service opportunities

11.: To communicate effectively with stakeholders

12. To manage a budget

Skill Component- Business leader/ Multi-outlet retailer (NSQF level— 6) Year -2nd (Semester-3rd & 4th)

Subject outcomes:

1. Build relationship with vendors / dealers to ensure smooth business operations and increase sales.

2. Manage customer needs effectively through need identification and strong customer relationship.

3. Implement legal compliances, policies and procedures.

4. Manage inventory and sales.

5. Manage financial operations.

6. Manage business operations.

7. Update self and team on products.

Skill Component- Retail Store Manager (NSQF level— 7) Year -3rd (Semester-5th & 6th)

Subject Outcomes:

1. Optimize inventory to ensure maximum availability of stocks and minimized losses in the store.

2. Implementation of standard operating procedures, process and policy at the store while ensuring timely and accurate reporting.

3. Manage sales and service delivery to increase store profitability

4. Check and confirm adherence to visual merchandising plans.

5. Manage overall safety, security and hygiene of the store.

6. Implement promotions and special events at the store.

7. Manage human resources at the store through manpower planning, recruitment, training and performance management.

8. Conduct price benchmarking and market study of competition.