Program Specific Outcome(PSO), Program Outcome(PO) and Course Outcome(CO)- Qualitative Data of Various Departments of Bijoy Krishna Girls' College, Howrah.

Department of Botany

Program Outcome:

- Under the CBCS curriculum the 3 year Honours course in Botany is divided into six semesters where each semester emphasises on selected areas of plant science in detail to broaden the understanding of the students as well as to develop a gradual interest and attentiveness among the students.
- In addition to the core courses the curriculum also provides several skill enhancement courses and discipline specific elective courses to provide the students with an expanded comprehension of the subject.
- The course aims at developing a scientific, logical, curious and open minded attitude among the students. It also imparts skills in practical implementation of the knowledge of plant sciences and the use of different laboratory apparatus and instruments and the application of different laboratory techniques.
- Study of Botany makes the learner aware of the ongoing environmental issues. They become more concerned about the ongoing and probable hazards and threats to environment. And with a comprehensive knowledge of plant sciences and ecology they are able to tackle environmental issues and device methods to reduce pollution. This also helps them to become a responsible citizen.
- After successful completion of the course, the students become eligible for applying for higher studies like masters in botany as well as other life sciences related subjects and also for applying for different government as well as public sector jobs.

Course Outcome:

Semester 1

CORE COURSE 1 : Phycology and Microbiology

The students get a meticulous idea of the basic features of algae , bacteria and virus with respect to their structural organisation , general characters and life cycle patterns. This curriculum builds the basic foundation of understanding microbiology and also opens prospects of higher studies in the intricate fields of virology.

Course Outcome : On completing the course successfully

CO1	The students get a meticulous idea of the basic features like thallus organisation in algae, their cellular and organellar ultra-structure, their classification and general features of the major classes of algae.
CO2	The students get a meticulous idea of the basic features like thallus organisation in algae, their cellular and organellar ultra-structure, their classification and general features of the major classes of algae.
CO3	This part of the curriculum introduces the students to amazing and diverse world of algae. They learn about the life cycle patterns in algae and also the life history of some common algae belonging to different families of algae.
CO4	They are also introduced to the basic techniques of microscopy in this semester and study the structural features of both the vegetative as well as reproductive parts of common algae like *Oedogonium, Chara* and *Ectocarpus.*
CO5	In this section they learn about bacteria and virus elaborately. They are acquainted with the types and characteristics of the microorganisms.
CO6	They understand the life cycle patterns in virus, their transmission and translocation technique and the physiochemical characters as well as multiplication procedure in TMV.
CO7	They understand the cell wall structures of both Gram positive and Gram negative bacteria, bacterial genome and the genetic recombination techniques in bacteria.

CORE COURSE 2: MYCOLOGY AND PHYTOPATHOLOGY

To understand basic classification, structure and functional details of Fungi and to understand the life cycle, evolutionary relationships among the major taxa. To gain knowledge about Mycorrhiza, lichen and different plant pathogen and to comprehend their role to the environment.

Couse outcome:

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

CO1	Identify the general and specific characteristics of the different classes of fungi and the organization of the representative types.
CO2	Recognize and describe the major groups of fungi.
CO3	Understand the diversity of fungi and its outline systematics. Discuss their affinities and adaptations to different stages of their life.
CO4	Understand the unique features, taxonomy, and functional attributes of different classes of fungi, their roles for the goodness of nature and agriculture as well as forestry.
CO5	To infer the affinities, evolutionary relationships and adaptation of the association of fungi (Mycorrhiza & Lichen) and to explain their economic as well as ecological importance.
CO6	Acquired technical skills will help the students for collecting and identify the biological specimens for study.
CO7	Application of different techniques will help the students to distinguish different microscopic pathogens.
CO8	Students can acquire skill through analytical process in the detection of diseases.
CO9	Interpretation will help students to predict opinion about procedures to cure or prevention of the disease.
CO10	Understand the diversity of pathogen and its outline systematics. Discuss their affinities and adaptations to different stages of their life. To gain knowledge about the harmful effects on the crops.

CORE COURSE 3: PLANT ANATOMY

To understand the internal structure of plants, to understand the organisation and function of different internal parts of the plants. To acquire knowledge about their life span and adaptations in the harsh environment.

Couse outcome:

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

CO1	Understand different cells types, their functions and distributions.
CO2	Understand and identify the different internal plants parts and tissue association, their function, position and organisation.
CO3	Acquires knowledge about distribution of different mechanical tissue and their working techniques.
CO4	Understand and identify different normal and abnormal growths of plant tissue and their distribution and function.

CO5	Acquire knowledge about life span and adaptations of different plants in the extreme environment.
CO6	Acquire knowledge about different usage of plant parts in different aspects of society.

CORE COURSE 4: ARCHEGONIATE

To understand basic classification, structure and functional details of Bryophytes, Pteridophytes and Gymnosperms, and to understand the life cycle, evolutionary relationships among the major plant groups. To gain knowledge about their adaptation and role in nature, ecology as well as economy.

Couse outcome:

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

CO1	Identify the general and specific characteristics of the different classes of Bryophytes, Pteridophytes and Gymnosperms, and the characteristic of the representative types.
CO2	Recognize and describe the major groups of Bryophytes, Pteridophytes and Gymnosperms.
CO3	Understand the diversity of bryophytes, pteridophytes and gymnosperms, and its outline systematics. Discuss their affinities and adaptations to different phases of their life.
CO4	To understand the affinities, evolutionary relationships and adaptation of the bryophytes, pteridophytes and gymnosperms, and to explain their economic as well as ecological importance.
CO5	Acquired technical skills will help the students for collecting and identify the bryophytes or parts of pteridophytes and gymnosperms specimens for study.
CO6	To study the diversity, variation, with ecological implication of different bryophytes, pteridophytes and gymnosperms.

CORE CORSE 5 : Palaeobotany and Palynology

This section of the course builds an bridge between the early plants and the modern vegetation and strengthens the understanding of evolutionary directions.

CO1	Palaeobotany basically deals with the study of plant fossils and forming a link between the modern day plants.
CO2	This unravels many interesting features regarding the evolutionary trends.

	Here the students study the structural features of selected fossil plants.
CO3	Palynology helps to understand about spores and pollen. Here in this syllabus students are given a comprehensive idea of the pollen aperture types, NPC classification and the pollen wall and its ornamentation.
CO4	A brief concept of the different fields of applied palynology is also imparted here.

CORE COURSE 6: REPRODUCTIVE BIOLOGY OF ANGIOSPERMS

To understand basic morphology, structure and functional details of different reproductive organs. To study different types of inflorescences, flower, fruits and seed. To gain knowledge about fertilisation and changes occur before and after fertilisation, to understand different embryonic conditions.

Couse outcome:

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

CO1	Understand different types of inflorescences, flowers, fruits and seeds.
CO2	Understand basic morphology of inflorescences, flowers, fruits and seeds, their modifications, structural and functional details.
CO3	Acquire knowledge about fertilisation process, and changes that occur during, before, and after the fertilisation.
CO4	To gain knowledge about embyogenenis and different developmental process of endosperms.
CO5	Explain the basic aspects of structural and functional details of embryo & its stages. Understand different embryogenic conditions.

CORE COURSE 7: PLANT SYSTEMATICS

To comprehend basic idea of classification, nomenclature and systematics of angiosperms, and to understand basic about nomenclatural type, rules of nomenclature, numericals and relationship with different aspects with taxonomy. Idea about different group of plants.

Couse outcome:

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

CO1	Describe the distinguishing characteristics of the major groups of angiosperms.

	Explain the basic aspects of classification details of angiosperms.
CO2	Learn certain morphological attributes that are distinct and significant to each group of angiosperms.
CO3	Understand the systemic and various classification concepts of angiosperms.
CO4	Interpret the affinities, evolutionary relationships and modifications of the major groups of angiosperms and to explain their economic importance with respect medicinal properties.
CO5	To relate taxonomy with different other subjects.
CO6	Knowledge to different evolutionary aspects. Compare and contrast the various theories on formation of new species and identify the factors that play a role in the process of evolution and understand the process of evolutionary changes.
CO7	Acquired technical skills will help the students for collecting and processing biological specimens for analysis. Knowledge of identification of different groups of plants and techniques of preserve plant specimens for long period of time.

CORE COURSE 8 : Plant Geography, Ecology and Evolution

The study of plant geography acquaints the students with the different phytogeographical regions of India and the most dominant flora around the country. The understandings of ecological principles help them to become more aware of the surroundings and environment. They are also made to understand the different theories of evolution in order to understand the ancestry of different plants and their interrelations.

CO1	The curriculum aims at imparting a constructive and worthwhile understanding of the broad ecological concepts.
CO2	This part of the curriculum leads way to understanding the environmental issues as well. They learn about the different levels of biodiversity and the conservation techniques.
CO3	Students get a more coherent idea of the theories of evolution , different terms and concepts of evolution and the phylogenetic tree.
CO4	They are also taken to visit a different phytogeographical region of India to study the flora and are also taught to study the community structure by quadrat method.

CORE COURSE 9: ECONOMIC BOTANY

To study of the relationship between people and plants. Economic botany meets many fields including established disciplines such as agronomy, chemistry, economics, forestry, genetic resources, geography, geology, horticulture, medicine, microbiology, nutrition, pharmacognosy, and pharmacology. The study explores the ways humans use plants for food, medicines, and commerce.

Course outcome:

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

CO1	Understand the evolution of cultivated plants include the processes of domestication and the relationship between natural and human selection of specific plant traits. Knowledge of botany is essential to understanding how domestication may have changed a plant species over time. Concern it with basic botanical, phytochemical and ethnological studies of plants known to be useful or those which may have potential uses so far underdeveloped. Economic botany is, then, a composite of those sciences working specifically with plants of importance to mankind.
CO2	Build concept about different types of cereals, grains, oil, fats, legumes and their origin, processing, importance to man and environment. Recognize different types of cereals, grains, and legumes. Knowledge about cultivation procedure of cereals, and crop yielding method, time of yielding, time of sowing. Gain knowledge about different extraction procedure of sugar, starch, oil, fat, essential oils, health implications and their uses.
CO3	Learn about different beverages and their processing Knowledge about propagation of plants, their different products as well as by-products, and uses.
CO4	Get to know about different Importants spices and their uses Different drug yielding plants, parts used and uses for mankind as well as health hazards occurs through the plants.
CO5	Knowledge about timber and fibre yielding plants, their morphology, processing, extraction procedure, ad uses. In this paper we get to know about different economically important plants, their uses.

CORE COURSE 10 : Genetics

This part of the curriculum acquaints the students with the concepts of genetics and heredity. The students are introduced to the remarkable world of genes.

CO1	The students are imparted the knowledge of the classical principles of Mendelian genetics and its extension.
CO2	They are taught the interesting concepts of Crossing over, Gene mapping, molecular mapping, Epistasis and the structural organisation of genes to name a few.
CO3	They are also up skilled about mutation and concepts of homoerotic genes and transposons.
CO4	Practical knowledge of chromosome structure, techniques of chromosome preparation, determination of mitotic index and identification of normal and abnormal stages of mitosis and meiosis is imparted.
CO5	This in a way prepares them to pursue higher studies in advanced fields of biology like biotechnology.

CORE COURSE 11 : Cell and Molecular Biology

In this segment of the syllabus we teach the students about the origin and evolution of cells with special reference to the structural composition and functions of nucleus and chromosomes.

CO1	The curriculum provides a comprehensive understanding of the structural features of the nucleus and chromosomes and also the entire process of cell cycle and its regulation.
CO2	In the molecular biology section a detailed and lucid understanding of the three important phenomenons of DNA replication, transcription and translation is conveyed.
CO3	The students are familiarised with the concept of gene, its various properties and gene regulation.
CO4	The emerging field of recombinant DNA technology is also introduced to them and special emphasis is given on the understanding of Cancer biology.
CO5	Both theoretical and practical understanding of the subject is focused at in this chapter in order to convey a more systematized and lucid conceptualised understanding.

CORE COURSE 12 : Biochemistry

Biochemistry unites biology with chemistry and makes the understanding of different physiological processes of a plant more comprehensive as the chemical backgrounds are explained in detail.

CO1	Here students are taught about the basic biochemical foundations and also about the different bio-molecules.
CO2	The different bioenergetics principles are discussed here in thorough detail emphasising on chemical reactions and mechanisms.
CO3	Practical application of biochemistry including the detection and estimation of different biochemical compounds is also a major aspect of the course

CORE COURSE 13 : Plant Physiology

This portion of the curriculum helps the students to understand the fundamentals of the different physiological processes of plants.

CO1	The detailed procedure of uptake translocation of mineral nutrients and water in pants is studied here .
CO2	The chemical composition and role of the different plant growth regulators.
CO3	The physiological concept of biological clock and photomorphogeesis is also taught here.

CORE COURSE 14 : Plant Metabolism

This section enlightens the student on the fundamental metabolic processes of plants.

CO1	This gives a comprehensive and extensive knowledge on photosynthesis, respiration, nitrogen metabolism and lipid metabolism.
CO2	The understanding of the metabolic processes helps in understanding the intricate details of plant physiology.
CO3	Practical application based knowledge is also imparted by the demonstration of different physiological phenomenon and also utilising different techniques to estimate and measure different physiological attributes of plants.

SKILL ENHANCEMENT COURSE

1. SEC A

i. **Applied phycology, mycology and microbiology**
   - This section informs the student upon the in general and industrial applications of algae, fungi and other microbes in our day to day life. This also helps them to prepare themselves for a prospective career in industrial microbiology.

ii. **Biofertilizers**
   - Students learn the use of microbes in preparing fertilizers in detail. They are also introduced to the concept of organic farming. This learning can help them building an independent career by application of these techniques.

2. SEC B

i. **Plant Breeding**
   - Students learn about the different plant breeding techniques and the methods of crop improvement.It broadens their understanding of the subject and its practical implementation to help them in developing nutritionally enriched and disease resistant plants.

ii. **Mushroom Culture Technology**

This section introduces them to the nutritional and medicinal values of edible mushrooms. They are also taught the procedures of mushroom cultivation, their storage and nutritional benefits.

DISCIPLINE SPECIFIC ELECTIVE COURSE

DSE-A: BIOSTATISTICS (5-1)

To develop knowledge of statistical fundamentals, analysis and broad uses of different aspects of plant sciences.

Couse outcome:

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

CO1	Fundamental statistical concepts and some of their basic applications in plant science and society Develop a fundamental understanding of basic concepts of statistic and bioinformatics.
CO2	Develop a thorough grounding in fundamental analytical approaches for

	quantitative study of living systems and life processes. Shall know how to organize, manage, and present data. Describe the contents and properties of the most important biometry databases, perform text- and sequence-based searches
CO3	Application of statistic to the study of living systems and life processes Carrying out exercises or small projects that incorporate data presentation.
CO4	Obtain and analyse information and data relating to specific yielding using a number of specific databases, statistic principles and tools
CO5	To educate the interdisciplinary nature of advances in statistic, and computational biology

DSE-A: (5-2): INDUSTRIAL AND ENVIRONMENTAL MICROBIOLOGY

To study of micro-organisms and the physical and chemical conditions that has an influence upon the industry as well as environment. Environments are components of ecosystems. An ecosystem is a community of micro-organisms and their physical and chemical environment that functions as an ecological unit. Micro-organism, those are used in Industrial purpose are directly connected to the production and commercial purposes.

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

CO1	Understand the roots of environmental microbiology are most closely linked to the microbial ecology, which comprises the study of the contact of micro-organisms with the environment, i.e. air, water or soil. It is the relationship of micro-organisms with one another and with their environment. It has concerns upon the three major spheres of life,
CO2	Understand Industrial microbiology may be defined as the study of the large-scale and profit motivated production of microorganisms or their products for direct use, or as inputs in the manufacture of other goods.
CO3	Recognize and identify certain micro-organism that may be for direct consumption as food for humans or as animal feed, or for use in bread-making; their product, ethanol, may also be consumed in the form of alcoholic beverages, or used in the manufacture of perfumes, pharmaceuticals, etc. Industrial microbiology is clearly a branch of biotechnology and includes the traditional and nucleic acid aspects.
CO4	Understand the methods of microbiology are often used in industrial microbiology for production of large scale of products and by-products. Knowledge about microbial treatment for contaminated water, soil and bioremediation, helpful effects an environment.
CO5	Knowledge of environmental microbiology can be traced to the studies of municipal waste treatment and disposal.

	Recognized that this field had expanded to the study of earth, water, and air systems, including the contact of indigenous microbes with organic and inorganic pollutants, behaviour of pathogens that has been introduced into these systems, and the discovery and application of new microbes and their products to benefit human health and promote welfare.

DSE-A: (6-3): MEDICINAL AND ETHNOBOTANY

The study of a region's plants and their practical uses through the traditional knowledge of a local culture and people. Thus attempts to document the local customs involving the practical uses of local flora for many aspects of life, such as plants as medicines, foods, intoxicants and clothing.

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

CO1	Considered a branch of ethnobiology, the study of past and present interrelationships between human cultures and the plants, animals, and other organisms in their environment. Like its parent field, the study makes apparent the connection between human cultural practices and the sub-disciplines of biology.
CO2	Understand the systematic study of the relationships between plants and people. The study is not only of the human "use" of plants; rather, it locates plants within their cultural context in particular societies, and situates peoples within their ecological contexts.
CO3	Recognize the culturally specific ways that humans perceive and classify different kinds of plants The things humans do to plant species, such as destroying "weeds" or "domesticating" and planting specific kinds of food and medicinal plants The ways in which various members of the plant world influence human cultures.
CO4	Understand the biochemical diversity of plants, which contributes to their innumerable medicinal and dietary uses, might also be traced in part to their immobility. Modern societies depend on chemical agents in plants for 25 percent of prescription drugs and nearly all recreational chemicals.
CO5	Focus of ethnomedical studies is often the indigenous perception and use of traditional medicines, another stimulus for this type of research is drug discovery and development. Ethnomedical investigations in this century have led to the development of important drugs for hypertension, anti-cancer drug, and treatment of certain cancers also.

DSE-A: (6-4) : Stress Biology

This section emphasizes vastly on the different types of stress factors that influence plant growth and metabolism.

CO1	It focuses on mechanisms of stress detection in plant and ways in which plant response to the stress factors.
CO2	The different physiological processes that help the plants to protect themselves from environmental stress and the different adjustment and adaptations are analysed here.
CO3	Practical implications are also demonstrated in order to familiarise students more with effects of the different stress factors on plants.

DSE-B: (5-5): PLANT BIOTECHNOLOGY

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

CO1	To impart comprehensive understanding of the principles and practices of biotechnology.
CO2	Understanding the principles and practices of biotechnology give insights into the Technology of Tissue Culture, Technique of genetic engineering, and DNA Finger printing.
CO3	Application of genetic engineering in advancement of crop and discuss the different applications of biotechnology.
CO4	Understanding the application of genetic engineering, DNA Finger printing, DNA profiling in plant tissue culture in Life Sciences Research trains the students to think logically.
CO5	Interpretation will empower students to think and solve problems in the field of biotechnology.

DSE-B: (5-6): HORTICULTURAL PRACTICES AND POST- HARVEST TECHNOLOGY

The horticulture has gained importance in recent years as a significant component of agriculture in India. The new impetus is given for the development of the horticulture, particularly for growing fruits and vegetables, which constitute important segment of India Dietaiy System (IDS).

CO1	Understand the interaction between people and plants will have a direct influence on the development of environmentally and humanly healthful urban landscapes;

	Knowledge of the role of greenspace in interior as well as exterior settings; the involvement people in gardening; and the use of cut flowers, pot plants, and food crops to improve human life quality. Recognize what people expect from plants and the garden can directly influence horticultural products and techniques.
CO2	Identify the crops, their production, origin, distribution and quality control of crop and different marketing strategies.
CO3	Understand different techniques of farming, uses of manures, bio fertiliser, bio-pesticides, weed control methods, rotation of different crops and commercial purposes.
CO4	Understand the post-harvest technology, evaluation of quality and products, preservation and processing and handling of crops.
CO5	Identify the symptoms of the diseases of plants, their cure and prevention methods. Conservation strategies are also very important for crops. Different germplasm collections, tissue culture and production of cultivars and varieties are also very important for horticultural practice.

DSE-B: (6-7): RESEARCH METHODOLOGY

- Collection and preparation of samples for analysis.
- Operate and calibrate the laboratory instruments, recognize and correct basic instrument malfunctions
- Understand the technical and procedural aspects of laboratory testing for different biochemical and perform various staining techniques for bacterial pathogens.
- Operate different instruments for DNA analysis and DNA inger printing.

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

CO1	Operate and calibrate the laboratory instruments, recognize and correct basic instrument malfunctions. Learn about techniques, fundamentals, concept, qualitative as well as quantitative research methods.
CO2	Understand different micro-technical and procedural aspects of laboratory; testing for different biochemical and perform various staining techniques for bacterial pathogens.
CO3	Understand the methods of plant collection, field data collection, data analysis, preservation and identification of plant sample.
CO4	Learn to perform different analyses such as biochemical tests, crude drug extraction, aseptic tissue cultural method, pathogen isolation, genetical analysis, DNA isolation, DNA finger printing from the plant sample.

CO5	Learn to write and present the data collected from different research procedure. Learn to reseach ethics and copy right and plagiarism rules.

DSE-B: (6-8): NATURAL RESOURCE MANAGEMENT

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

CO1	Identify different natural resources and understand sustainable uses of nature and natural resources.
CO2	Learn utilisation of different lands and measures of soil degradation and their managements.
CO3	Recognises different water resources, types and quality, threats and management of water resouces.
CO4	Identify different levels of biodiversity, threats, significant. Learn about different types of forest, their structures, compositions, forest products, uses and management.
CO5	Understand different renewable and non-renewable sources of energy. Different biotic and abiotic interactions of environment. Knowledge of GIS mapping as well as the names of various conservation sites and the rules of conservation as well as the names of animals or plants these sites preserve.

Department of Commerce

Program Outcomes (POs)

At the end of the B.Com (Hons) programme, graduates will have:

P01: Core Subject Knowledge

Understanding of fundamental accounting, taxation, costing and management principles.

P02: Quantitative Skills

Skills used from accounting, taxation, costing, management and project work will be used in higher studies and research work.

P03: Analytical Skills

Use of accounting, taxation, costing, management as well as economics and statistical data analysis in the world of business and accounting.

PO4: Self-awareness Learning

Self and team assignments help develop self-awareness, critical thinking and deepen learning.

PO5: Professional Development

Prepare for a range of career choices in government, industry and academia viz., entrepreneur, banker, financial planners and advisors, financial and corporate accountant, cost accountant, management professionals, company secretary, office secretary, internal as well as external auditor, chartered accountant, tax consultant, financial analyst and consultant, investment consultant, civil service officer, researchers and teachers

Programme Specific Outcomes (PSOs):

After graduation the student will be able to learn-

PSO 1: The behavioural patterns of different accounting, costing, taxation agents, advance theoretical issues and their applications.

PSO 2: Understand determinants of accounting, costing and taxation indicators.

PSO 3: Learn about basic as well as advanced accounting, costing, and taxation methods.

PSO 4: Acquaint with some basic as well as advanced accounting, office and statistical software to be applied in accounting, costing and taxation.

PSO 5: Acquaint with some basic mathematical methods to be applied in commerce.

PSO 6: Acquaint with theoretical concept of different areas of macro as well as micro economics, Indian financial system, management, company law, business communication, audit, accounting convention and methods.

PSO 7: Acquaint with computerized accounting method.

PSO 8: Delineate and analyse the financial statement.

PSO 9: Facilitate the historical developments in the accounting and management thoughts propounded by different standards and schools respectively.

PSO 10: Learn the basic concept of monetary analysis and financial marketing in Indian financial markets.

PSO 11: Learn the development issues of accounting standard and GAAP

PSO 12: Acquaint with some basic concept of e-commerce.

PSO 13: Learn the real method of e-filing of tax return by using software

PSO 14: Learn the method of data collection through primary and secondary sources and acquaint the method of writing a project on various topics as specified in the course.

Course Outcome (COs)

- **Core Course (CC)**

CO-1

Course Code: Business Law (CC 1.1 Chg)

Company Law (CC2.1 Chg)

The course is designed in a way where students will be able to understand the various Acts relating to our day to day business purpose. Students will be able to know The Indian Contract Act, The Sale of Goods Act, The Partnership Act. They also learn different types of Negotiable Instruments.

The enactment of the Companies Act, 2013 was one of the most significant legal reforms in India. The knowledge of law related to business is indispensable for the students of Commerce. Students will be able to know a broad coverage of the Companies Act, 2013.

CO-2

Course Code: Principles of Management (CC 1.2 Chg)

Marketing Management and Human Resource Management (CC 2.2 Chg)

The structure of this (CC 1.2 Chg) subject is designed in this way provide basic concept of different management thoughts and schools. It gives details understanding about the importance and features of management functions and role of manager. This subject also separately discusses advantages and disadvantages of management function as well as its scope and nature. It also gives detail understanding about different individual function of management by focusing its importance, advantages and limitations.

CC 2.2 Chg describes the use of the elements of effective decision making research, assessment and consequence. Develop the abilities to plan for effective communication learns how to reflect, present and evaluate communication. Describe trends in the labor force composition and how they impact human resource management practice. Discuss how to strategically plan for the human resources needed to meet organisational goals and objectives. Compare and contrast methods used for selection and placement of human resources. Explain the influence of problem solving techniques, team processes, and environmental conditions on creativity in organizations. Describe the innovation process, including the innovation value chain, the role of champions, and commercializing an innovation. Analyze organizational practices that facilitate creativity and innovation.

CO-3

Course Code: Financial Accounting – I (CC 1.1 Ch)

Financial Accounting II (CC3.1 Ch)

The structure of syllabus of CC1.1Ch is designed in such a way to provide a complete understanding about basic concept and application of accounting. It will be helpful for the students to find out revenue, valuation of inventories, determining depreciation, reserve and provision. It provides knowledge to differentiate between capital and revenue transaction. It also serves current information about accounting standard to bring uniformity in accounting system among different companies as well as different countries. This subject also offers a complete knowledge to the students to prepare financial statement of profit- seeking organization as well as non- profit organization.

The structure of the syllabus of CC3.1Ch is formed in a way that the students will be able to learn advance methods of accounting. They will understand the method of partnership accounting, branch and departmental accounting system as well as hire purchase accounting method. They will gather knowledge how to pass journal and ledger related to investment. Business acquisition and conversion of partnership into Joint Stock Company is one of the practical areas that will be benefited for the students.

CO-4

Course Code: Cost and Management Accounting – I (CC 2.1Ch)

Cost and Management Accounting –II (CC 4.2 Ch)

The course of CC2.2Ch is designed in a way where students will be able to understand the basic fundamentals of Cost and Management.

Students will be able to identify and explain the various units related to the course as well as solve problems related to it. The course deals with Introduction to Costing, Cost Accounting and Management Accounting, Material Costs, Employee Cost and Incentive Systems, Overhead and Cost Statement Overhead, Cost Book-keeping, Costing Methods- Job Costing, Contract Costing, Service Costing and Output Costing, Process Costing. The students will understand determinants of accounting and costing.

The course of CC4.2Ch is designed in a way where students will be able to understand the basic as well as advanced concepts of Cost and Management.

The students will be acquainted with some basic mathematical methods to be applied in commerce. The course deals with Joint Product & By Product, Activity Based Costing, Budget and Budgetary Control, Standard Costing, CVP Analysis, Marginal Costing, Short-term Decision Making. The students will learn to apply the knowledge in the fields of business and accounting.

CO-5

Course Code: Indian Financial System (CC3.2 Ch)

This course empowered us to generate a rigorous idea regarding basic financial structure of an economy. This basic structure of this course is to understand the key component of Indian financial system and its relation to each other. The inter-relation between different financial components needs to be understood properly. This course is meant for simplifying the understanding of complex Indian financial system.

CO-6

Course Code: Entrepreneurship Development and Business Ethics (CC 4.1 Chg)

This paper is a new introduction in CBCS syllabus with an aim to ignite the applied entrepreneurial mindset of students in one hand and to teach them the fundamental principles of business ethics and good governance of corporation on the other hand. As the Government is encouraging for startups or atmanrirbhar abhiyan the course of Entrepreneurship requires a special mention. Moreover, doing business in an ethical way by serving the best interests of all is the need of the hour which is aptly addressed in the second part of the course.

CO-7

Course Code: Taxation I (CC 4.1 Ch)

Taxation II (CC 5.2 Ch)

By understanding paper CC4.1Ch, students will able to know that tax is an important instrument in the hands of the government to achieve economic and social objectives. They also gather knowledge about the different types of Tax like Direct and Indirect Tax and different heads of income. By studying this paper students can solve different types of problems under the head of income from salary, income from house property, profit and gain from business or profession, income from capital gain, income from other sources. Students can gather the knowledge about deduction from gross total income. The right of an assessee to set off and carry forward of loses.

From paper CC5.2Ch students will be able to know how to compute total income and taxable income of an assessee. They also solve the problem of calculating tax liabilities of an assessee and Tax management like filling of return, self assessment, advance tax , internet and fee for belated tax filling or not filling of return at all etc. They can gather Knowledge of different source of Indirect Tax like central sales tax, GST, Customs etc. Students can also understand how to calculate the GST and the submission process of GST from this study.

CO-7

Course Code: Auditing & Assurance (CC 5.1Ch)

Students will learn about the Company Auditing. The subject of 'Auditing' has undergone severe changes during the last two decades. Particularly the newly framed Companies Act, 2013 has affected the Company Audit. Students will be able to know Audit Procedure, Verification and Valuation of different type of assets and as well as liabilities. They also know how to prepare the Audit Report and Audit Certificate.

CO-8

Course Code: Project Work (CC 6.1 Ch)

One of the objectives of any applied social science paper like Commerce is to create inquisitiveness in the mind of budding researchers in the larger field of commerce in general and accounting and finance in particular. With this view this project paper is incorporated in the UG level which is in line with the New Education Policy, 2020 which actually encourages that the students should undergo Ph. D after completing the undergraduate program.

· Generic Elective (GE)

CO-1

Course Code: Microeconomics I (GE 1.1Chg)

Microeconomics II & Indian Economy (GE 4.1 Chg)

The basic requirement of GE1.1Chg is to understand that the fundamental concept of economics is necessary for every person in a society. Keeping this thing in mind, this course designed in way to comprehend the three most important concepts consumer behaviour, Firm's production and cost and market structure.

This course enables us how to use the scarce resources to make optimal choice out of it and how to run an efficient market by maintaining some of the laws. Students may find it particularly interesting because of its practical usability in the society.

GE4.1Chg course basically gives emphasis on understanding the key use of market structure and its deviant from the efficiency. This course also allows us to take into account the determination of the factors payment. The discussion of India economy has a detailed understanding on some crucial issues of Indian Economy and its features.

This course is meant to increase the knowledge regarding the economy in more detail level and how does it perform in practical level.

CO-2

Course Code: Statistics (GE 1.1Chg)

Business Mathematics & Statistics (GE 3.1 Chg)

This course is designed to provide the students with an understanding of the data and its relevance in business and develop an understanding of the quantitative techniques from statistics. A particular emphasis is placed on developing the ability to interpret the numerical information that forms the basis of decision-making in business. Most of the examples are drawn from a variety of business applications. This course introduces business statistics and fundamental aspects of decision-making. It examines aspects of business and marketing with regards to basic statistical analysis and some mathematical computation. Students will be provided with the theoretical concepts, tools and methods of statistics as well as the opportunity to work through example problems.

On completion of units of GE1.1Chg, students will be able to:

1. perform percentage adjustments to common commercial situations including depreciation calculations and those requiring algebraic manipulation of formulae;

2. plot and interpret straight line graphs, apply them to business decision-making and discuss the significant features of non-linear graphs;

3. identify the role of statistics in business and the analytical tools available for making business decisions;

4. demonstrate correct usage of measures of central tendency and measures of dispersion to describe data and perform analysis of data based on the results of these measures;

5. use measures of association to evaluate statistical relationships between different factors and determine the validity of these results.

6. Students will deal with various numerical & quantitative issues in business and management.

7. They will enable to use Statistical, graphical &algebraic techniques wherever relevant.

On completion of units of GE3.1Chg, students will be able to:

1. This course will also help them to have a proper understanding of Statistical application in economics, management & various perspectives of accounting & business.

2. Understand and critically discuss the issues surrounding sampling and significance.

3. Discuss critically the uses and limitations of statistical analysis

4. Solve a range of problems using the techniques covered.

5. Conduct basic statistical analysis of data.

6. Apply probability calculations and normal distribution techniques to calculate probabilities for business scenarios.

7. 6. Students will acquire the ability to distinguish between random and non-random experiments, 7. They will have the knowledge to conceptualise the probabilities of events including frequentist and axiomatic approach. Simultaneously, they will learn the notion of conditional probability including the concept of Bayes' Theorem,

8. 8. They will have the knowledge related to concept of discrete random variable and its probability distribution including expectation and moments, important discrete distributions such as Binomial, Poisson, Geometric, Negative Binomial and their interrelations.

9. 9. Acumen to apply standard discrete probability distribution to different situations.

10. Demonstrate mastery of mathematical concepts that are foundational in business mathematics, including functions and their mappings, linear systems and their solutions, and descriptive statistics and their applications.

11. Demonstrate an understanding of basic marketing mathematics by solving relevant problems, including trade discounts, cash discounting, and markup and markdown calculations.

12. Apply the principles of simple interest to solve relevant problems in financial applications such as simple-interest-based loans.

13. Use the principles of compound interest to solve relevant problems in financial applications, for example, those involving annuities, loans and mortgages, bonds and sinking funds, and investment decisions.

CO-3

Course Code: E-Commerce & Business Communication (GE 2.1 Chg)

On completion of this subject, students will be:

1. Able to understand the recent advancement in the E-commerce Technology and Business Communication.

2. Acquire knowledge of E-commerce transaction.

3. To understand the importance of E- Commerce and its Technology for business.

4. To gain a practical orientation to E- Commerce development and Maintenance.

5. Students will be able to understand the recent advancement in the e- commerce technology and make use of that advancement in their chosen field of industry.

6. Identify the main business and marketplace models for electronics communication and trading.

7. Evaluation the effectiveness of business and revenue models for online business.

8. Complete an online marketplace analysis to assess competitor and customer and intermediary and competitor use the internet as part of strategy development

Skill Enhancement Elective Course (SEC)

CO-1

Course Code: Information Technology & Its Application in Business (SEC 3.1 Chg) (Th + Practical)

On completion of this subject, students will be able to learn:

1. Concepts of data, information and computer based information system,

2. Acquire knowledge Concepts of data, information and computer based information system.

3. Concept of database management system (DBMS).

4. Need and concepts, dimension, definition and scope of e-security, security threats.

5. Practical Knowledge about Word Processing, Preparing Presentations, Spreadsheet and its Business Applications, Database Management System.

CO-2

Course Code: Computerised Accounting and e-Filing of Tax Returns (SEC 6.1Chg) (Practical)

This course is introduced for the first time in Commerce stream in CBCS of CU to provide the in depth understanding to students on how to develope an accounting program for basic financial transactions including pay roll development etc. Moreover database administration process is also included in this course. Finally one of the most practical outcomes of this course is inclusion of e-filing of income tax module where students will have practical hands on learning on titbits of e-filing of income tax returns which they can use in their professional life to earn income.

- **DisciplineSpecific Elective (DSE)**

CO-1

Course Code: Economics II (DSE 5.1 A)

This course basically takes into account the detail discussion of an economy as a whole. Understanding how an economy performs in an aggregate level is very helpful to make or change a policy for a whole nation. To have a vivid picture relating to inflation, unemployment, national income etc., this course has an extreme importance.

CO-2

Course Code: Advanced Business Mathematics (DSE 5.1 A)

The aim of this paper is to define basic terms in the areas of business calculus and financial mathematics.

2. Explain basic methods of business calculus, types and methods of interest account and their basic applications in practice.

3. Solve problems in the areas of business calculus, simple and compound interest account, use of compound interest account, loan and consumer credit.

4. Discern effects of various types and methods of interest account.

5. Connect acquired knowledge and skills with practical problems in economic practice.

CO-3

Course Code: Corporate Accounting (DSE 5.2 A)

On completion of this paper students will be able to gather knowledge about different adjustments related to issues and buyback of shares and debentures. They will also learn to prepare company final account under Schedule III, redemption of debenture, valuation of goodwill and shares. One of the most important units by which they will understand the current trend of post globalised business world is company merger and reconstruction.

CO-4

Course Code: Financial Reporting and Financial Statement Analysis (DSE 6.1 A)

The students will learn the basic fundamentals of Financial Reporting and Financial Statement Analysis. They will acquire knowledge of the basic concepts of monetary analysis and financial marketing in India. The course includes the following units- Holding Company, Accounting Standards, Fund Flow Statement, Cash Flow Statement, and Introduction to Financial Statements Analysis, and Accounting Ratios for FSA. The students after learning the application can successfully delineate and analyse the financial statement.

CO-5

Course Code: Financial Management (DSE 6.2 A)

By studying this paper students will be able to know the function of financial management. Students will learn about the time value of money, the present and future value of money by the method of annuity and compound interest. Students will also learn about the different sources of capital, leverage, capital budgeting, cost of capital, dividend policy, capital structure theories, working capital management and sources of finance.

Department of Economics

Program Outcome- At the end of the B.Sc Economics (Hons) programme, graduates will have:

P01: Core Subject Knowledge- Understanding of fundamental economic principles.

P02: Quantitative Skills- Skills used from mathematical models used in higher level economics and research work.

P03: Analytical Skills-Use of economics and statistical data analysis in the world of business economics.

PO4: Self-awareness Learning-Self and team assignments help develop self-awareness , critical thinking and deepen learning.

PO5: Professional Development- Prepare for a range of career choices in government, industry and academia viz., economists, economic planners, policy makers, financial advisors, researchers and teachers.

Program Specific Outcome: After graduation the student will be able to learn-

PSO 1: The behavioural patterns of different economic agents, advance theoretical issues and their applications.

PSO 2: Understand determinants of macroeconomics indicators.

PSO 3: Learn about basic as well as advanced econometrics tools and acquaint with Statistical software

PSO 4: Acquaint with some basic as well as advanced statistical methods to be applied in economics.

PSO 5: Acquaint with some basic mathematical methods to be applied in economics.

PSO 6: Acquaint with some basic theoretical concept of public finance.

PSO 7: Acquaint with the measurement of development with the help of theories along with the conceptual issues of poverty and inequalities with Indian perspectives.

PSO 8: Delineate the fiscal policies designed for developed and developing economics. **PSO 9:** Facilitate the historical developments in the economic thoughts propounded by different schools.

PSO 10: Learn the basic concept of monetary analysis and financial marketing in Indian financial markets.

PSO 11: Learn the development issues of Indian economy

PSO 12: Acquaint with some basic concept of rural development and Managerial Economics.

PSO 13: Learn the real and monetary sides of International economics.

Course Outcome:

CO-1

Course Code: Introductory Microeconomics (ECO-A-CC-1-1-TH-TU)-CC1 Intermediate Microeconomics (ECO-A-CC-3-5-TH-TU)-CC5 Intermediate Microeconomics (ECO-A-CC-4-8-TH-TU)-CC8

The course is designed in a way where students will be able to understand the basic fundamentals of Economics.Students will be able to identify and explain economic concepts and theories related to the behavior of economic agents, markets, industry and firm structures, legal institutions, social norms, and government policies. Students will be able to integrate theoretical knowledge with quantitative and qualitative evidence in order to explain past economic events and to formulate predictions on future ones. Students will be able to evaluate the consequences of economic activities and institutions for individual and social welfare. Students will be able to identify the basic features of alternative representations of human behavior in economics.

CO-2

Course Code: Mathematical Methods for Economics (ECO-A-CC-1-2-TH-TU)-CC2 Mathematical Methods for Economics (ECO-A-CC-2-4-TH-TU)-CC4

Set and set operation and continuity with economic application .Understand function of real variables which has the economic application in building up the concept of elasticity .They will learn single variable optimization which has its economic application in the area of profit maximization and cost minimization. Matrix algebra and its application in input output analyses are introduced.Game theory is also introduced at the basic level. These topics will help the students get equipped with the necessary knowledge to express economic ideas with the formal mathematical concept. This will help them in future to pursue the research work and career in economics.

CO-3

Course Code: Introductory Macroeconomics (ECO-A-CC-2-3-TH-TU)-CC3 Intermediate Macroeconomics(ECO-A-CC-3-6-TH-TU)-CC6

Intermediate Macroeconomics(ECO-A-CC-4-9-TH-TU)-CC9

Students will learn about the determinants of macroeconomic conditions (national output, employment, inflation), causes of business cycles, and interactions of monetary and financial markets with the real economy, familiarizing themselves in the process with major economic theories of relevance.Students will be able to identify the determinants of various macroeconomic aggregates such as output, unemployment, inflation, productivity and the major challenges associated with the measurement of these aggregates. Students will be able to discuss the linkages between financial markets and the real economy, and how these linkages influence the impact of economic policies over different time horizons. Students will be able to describe the main macroeconomic theories of short term fluctuations and long term growth in the economy. Students will be able to critically evaluate the consequences of basic macroeconomic policy options under differing economic conditions within a business cycle.

CO4

Course Code: Statistics for Economics (Eco-A-CC-3-7-TH-TU)-CC7

Having successfully completed this module student will be able to:

Use graphical and numerical methods to calculate and illustrate descriptive statistics. Use the basic concepts of probability and Bayes Theorem. Identify the statistical concepts in questions about economic models. Use Excel to make basic statistical calculations and critically evaluate the basis for these calculations. Manipulate the probability models that are most widely used in economics, and apply them correctly and carry out the appropriate statistical analysis. Identify the appropriate regression model to apply to an economicsdataset. Identify common problems which may affect regression analyses.

CO5

Course Code: Introductory Econometrics (ECO-A-CC-4-10-TH-TU)-CC10

Students who successfully completed should be comfortable with basic statistics and probability. They should be able to use a statistical/econometric computer package to estimate an econometric model and be able to report the results of their work in a non- technical and literate manner. In particular a student who successfully completes will be able to estimate and interpret linear regression models and be able to distinguish between economic and statistical importance. They should be able to critique reported regression results in applied academic papers and interpret the results for someone who is not trained as an economist.

CO6

Course Code: International Economics (ECO-A-CC-5-11-TH-TU)-CC11

Students will Recognize the cause of trade, sources of the gains from trade and the domestic and international distribution of those gains . Examine instruments and consequences of trade policy measures—including tariffs and quantitative restrictions. Understand international financial markets and the macroeconomics of open economies; balance of payments and the trade balance; exchange rates and the foreign exchange market; interest rates and capital flows; central banking and monetary policy in open economies; and exchange rate regimes.

CO7

Course Code: Indian Economy (ECO-A-CC-5-12-TH-TU)-CC12

After successfully completed the course the students will learn about Growth and development under different policy regimes and Objectives, achievements and failure of the planning. They will understand Demographic trends and issues. Development-concepts and measurement-GDP and PCI, PQLI, HDI, HPI etc. they will learn about tax reform and banking sector reforms.

CO 8

Course Code: Public Finance (ECO-A-CC-6-13-TH-TU)-CC13

Students will learn about Structure, pattern and policies of taxation in developing economies with special reference to India, Trend and pattern of public expenditure, nature and magnitude of public debt in India, Budget system, techniques of budgeting, budget deficits, latest Union budget with changing perspective and Objectives, role and limitation of fiscal policies in developing and developed countries, fiscal reforms in India.

Skill Enhancement Course: CO1

Course Code: Skill Enhancement Course I: ECO-A-SEC-3-A(1)-TH-Data Analysis Skill Enhancement Course II: ECO-A-SEC-4-B(2)-TH-Research Methodology

Data analysis is broadly the subject matter of statistics and Econometrics. Having completed the module the student will able to frame sampling techniques, able to conduct primary survey. They will learn how to collect data and how to interpret data by using descriptive statistics and also will be able to run the regression analysis and interpret the result. As this syllabus is included in Skill Enhancement Course, it is indeed increase the skill of the students as this course offers hands on training on data analytical software like STATA/SPSS. This course is very important for the economics students as this course will give the students the opportunity to go for data analyst job in market.

CO2

Course Code: Skill Enhancement Course I: ECO-A-SEC-3-A(1)-TH-Rural Development [RD]

This course is included in Skill Enhancement Course. By studying this course students will able to learn about basic concept rural development and agriculture development and the role of NGOs in rural development. From the second unit students will learn about decentralized planning and participatory development, the role of panchayats in decentralized rural development. The student will able to integrate the knowledge about the role NABARD for promoting rural development, the Concept of micro finance, the need for SHG for formation and SHGs in India. This course also comprises the critical evaluation of selected government scheme like MGNREGA.

CO3

Course Code: Skill Enhancement Course II: ECO-A-SEC-4-B(2)-TH-Managerial Economics

After the completion of the course, students will be able to – 1) Understand the roles of managers in firms 2) Understand the internal and external decisions to be made by managers 3) Analyze the demand and supply conditions and assess the position of a company 4) Design competition strategies, including costing, pricing, product differentiation, and market environment according to the natures of products and the structures of the markets. 5) Analyze real-world business problems with a systematic theoretical framework. 6) Make optimal business decisions by integrating the concepts of economics, mathematics and statistics.

Discipline Specific Elective(DSE): Course Outcome CO1

Course Code: ECO-A-DSE-5-A(1)-TH-P Applied-Econometrics [AE]

Students will learn about the uses of econometric models in empirical research. They will learn about cross sectional analysis, time series analysis and panel data analysis and application with Stata or R.

CO2

Course Code: ECO-A-DSE-5-A(1)-TH-TU-Economic History of India (1857-1947) [EHI]

In this course students will understand the impact of British rule on India and deindustrialization, commercialization of agriculture and economic drain. They will also learn about aspects of economic policies in British rule and land policy, policy of discriminating protection and currency and monetary policy.

CO3

Course Code: ECO-A-DSE-5-B(1)-TH-TU-Comparative Economic Development (1850-1950) [CED]

A successful student will learn the strategies and policies for economic development and related topic of industrialization in Soviet Union and regions of comparative development of Japan, South Asia, China and crisis and failures of Latin America and Africa.

CO4

Course Code: ECO-A-DSE-5-B(1)-TH-TU-Financial Economics [FE]

Students will understand Investment theory and Portfolio analysis like basic theory of interest, discounting, present value, bonds price and yields. They will learn about options and derivatives and patterns of corporate financing.

Department of English

Program Outcomes (PO)

At the end of the B.A. English (Hons) programme, graduates will have:

PO1. Core subject knowledge.

A detailed comprehension of British, American, European and Indian writing in English as well as Indian Writings translated into English.

An in-depth grasp of literary history, literary criticism and theory.

PO2. Interpretation and Critical thinking

Students will be able to identify critical problems in the fields of British, American, European and Indian-English literature and conduct research that utilizes the most relevant critical methods.

PO3. Composition and Presentation.

Students will have mastery in academic and formal writing skills.

PO4. Professional Development

Prepare for a range of careers, viz.- teachers, researchers, creative writers, editors, etc.

Program Specific Outcomes (PSO)

PSO 1. Exposurethrough the study of literature to cultures and social situations of different countries and literary periods leading to inculcation of humanand social values necessary for making a contribution to society.

PSO 2. Study of literature enables discovery of the self and therefore leads to personality enrichment necessary to face the vicissitudes of life.

PSO 3. Augmentation of communication skills in spoken and written forms.

PSO 4. Enhancement of expertise in expressing in English leading to improvement in prospects of employability.

4. **Course Outcomes (CO)**

CO 1. Identify the salient features of a literary text from a vast range of British, American, European, Indian texts.

CO 2. State and support interpretive claims about a variety of texts.

CO 3. Employ knowledge of literary traditions to produce imaginative writing.

CO 4. Use research to assist in problem-solving

Department of Geography

PROGRAMME OUTCOME

B.A./ B.Sc in Geography (Hons.)

The course enables students in following ways:

Career opportunity:

Firstly, after completing this course students may join various master's programmes for further studies. Secondly, they become eligible for most of the competitive examination all over the country, where the subject may a method-subject. Thirdly, they may opt out for some professional courses like, remote sensing and GIS, environmental studies, disaster management, musicology etc.

Knowledge acquisition:

The subject encompasses physical and human geography, which enrich their knowledge regarding earth as the living space of humanity. Numerous branches of the subject systematically enhance their knowledge from soil to atmosphere, from society to region.

Field experience:

Field work is a compulsory part of undergraduate study, where everyone interacts a new place and new people to acquire social as well as physical database and prepare a field report. It's a real-life experience which provides them to do something new.

COURSE OUTCOME

B.A./ B.Sc in Geography (Hons.)

1st Semester:

Geotectonics& Geomorphology:

On completion of the course, the student should be able to: explain how different types of endogenetic and exogenetic processes affect Earth's landform features; understand geological history of Earth and associated events; understand earth's interior; describe different types of landforms and land forming processes in different climate zones and tectonic regimes; explain different types of theories and models for landscape evolution, can relate these models/theories in practical terms with present landscapes; identify and describe geomorphological structures and associated processes with these structures; carry out geomorphological field investigation; analyze how human activities have influenced the leveling of the earth's surface, and giving

examples of the activities; identify landform changes through time, landform characteristics, associated process through different types of map; understand the mechanism and preparation of topographical sheet; identify different types of rocks and minerals.

Cartographic Techniques:

On completion of the course, the student should be able to: understand about different types of scales, their uses and how to draw them; understand the concept of map making and develop knowledge of latitude and longitude; explain the concept of map projection and their importance; able to draw maps with help of latitude, longitude and suitable scale; understand different types of cartographic techniques and their application; able to prepare thematic maps and represent information with help of these maps.

2nd Semester:

Human Geography:

From this scheduled course, the students learn: the basic concept of human geography – as a branch of geography; major themes and contemporary relevance of human geography; the difference between race and ethnicity and able to classify human beings according to both of these; about the Space, Society and Cultural regions on the basis of language and religion, the evolution of human societies from hunting to industrial society; how human beings survive adapting unfavourable physical environment; population composition and the pattern of population growth and distribution worldwide and in India and Demographic Transition Theory; population resource relationship; The conflict between development and environment; types and patterns of rural settlements and the types of rural house in India; morphology and hierarchy of urban settlements; the use of cartographic technique i.e. how to represent spatial variation of demographic data; the process of measuring arithmetic growth rate of population; types, graphical representation, and analysis of age-sex pyramids.; and the process of analyzing Nearest Neighbour Index.

Thematic Mapping and Surveying:

From this scheduled course students learn: the concept of diagrammatic representation of data; how to prepare and interpret different types of map – weather maps, land use-land cover maps, socio-economic maps; about some principal national agencies producing thematic maps in India; the mechanism and preparation of geological maps with different structure; the basic concepts of surveying and the uses of different survey equipment; and to draw the landform using survey instruments on the ground.

3rd Semester:

Climatology:

The theoretical aspects of climatology and basic concepts are discussed here. This section helps the students to understand more difficult concepts of climatology in higher levels. In the

laboratory module, measurement of weather elements using analogue instruments, weather map interpretation etc. helps the students to understand the practical concepts of climatology.

Hydrology and Oceanography:

The concepts of hydrological cycle, marine geomorphological concepts are learnt along with some dynamic concepts like sea level change. Thus, global warming etc. which are also linked sea level change, are learnt by the students. In the laboratory module, the quantitative aspects are taught, and in that the emphasis is mainly on hydrology.

Statistical Methods in Geography:

The basic statistical concepts are dealt with so that students can be made capable to interpret data quantitatively while doing empirical studies in future.Data interpretation techniques are discussed here by using sample and data matrix. This laboratory section is an extension of the theoretical course of statistical methods, e.g. regression and residual mapping.

Tourism Management:

In this Skill Enhancement Course (SEC), different types of tourism, factors, sustainable tourism, and the popular tourism destinations are studied. Case studies are also included in the curriculum for better comprehension of the empirical analyses of tourism industry.

4th Semester:

Economic Geography:

This paper consists with economic activities and phenomena of the world, different production systems, trade, transport and commerce, resource base, by which students become aware and get knowledge regarding the economic scenario of the world. It also helps them to prepare for 'current affairs' section of competitive examinations.

Regional Planning and Development:

This paper highlights exclusiveness of region, its character and uniqueness, regional disparities and imbalance, different measures of human development etc. It opens new arenas of thinking of the students. A discussion on contemporary issues in this paper makes students more informative, focused and wise.

Soil and Biogeography:

Soil, plants and animals -- the biosphere -- is the content of this branch. Soil character, formation, types, erosion, etc. helps students to know the differentiation of soil resources and productivity upon which ecosystem and biomes are developed by which environmental balance are maintained.

Rural Development:

This Skill Enhancement Course covers a wide range as it deals not only with the basic conceptual issues and models but also ground level target group and target area approaches to rural development with specific reference to several government sponsored programmes.

BA/ BSc in Geography (General)

PROGRAMME OUTCOME

A Geography General degree program provides with the knowledge and field-based and technical skills that help them in pursuing promising career options like:

- The most preferred option for Geography Graduates is MA/MSc Programmes in various subjects such as Geography. Such programmes are perfect for students who want to continue their further studies through M.Phil and Doctorate Programmes, and become researcher in their respective fields. MA/MSc degrees are also ideal for candidates who are looking forward to take up teaching as their profession.
- Geography General passed out candidates, who are willing to enter into the education sector, can opt for B.Ed (Bachelor of Education) programme. This programme trains students for teaching purpose.
- Another option for Geography Graduates is to opt for a Diploma Programmes in professional training in various fields like Acting, Animation, Film-Making, , Painting and so on, that make them more employable.
- An MBA after Graduation has also emerged as one of the important options.
- Geography General Graduates can apply for competitive examinations conducted by the central and state government and other agencies.

COURSE OUTCOME

Students will be acquainted with the distinctiveness of Geography as a field of learning in social science as well as natural science. Besides they will be familiar with the interrelationship between Geography and other branches of Earth Sciences.

Physical Geography:

This course makes students to know the fundamentals of Physical Geography; to acquire knowledge about various landforms and processes; acquire knowledge of hydrological cycle, run off; to understand importance of ocean, ocean salinity and temperature and the types of tides. In the laboratory module, the students learn to identify different types of rocks and minerals; understand method of representation of relief; drawing of Profile of slope maps; make demarcation of drainage basin and identify of different types of channel features and the Drawing of drainage density map.

Environmental Geography:

In this course, the students understand heat budget and insolation; acquire knowledge of horizontal and vertical distribution of atmospheric temperature and pressure; understand the Monsoon; understand different atmospheric disturbances like Cyclones, Thunderstorms etc; obtain knowledge about Greenhouse effect and ozone layer; study Koppen's climatic classification; acquire knowledge of formation and properties of soil and soli profile development; study of USDA classification of soils; acquire knowledge of ecosystems and biomes; study different types of plants; and understand the Indian Biodiversity. In the laboratory module, the students learn to understand the interpretation of weather map; draw and interpret hythergraph, climograph and wind rose, ternary diagram and prepare biodiversity register.

Human Geography:

This course enables students to study the Human Economic Activities; grasp a few industrial location theories; understand the human society and the characteristics of social organisations; acquire knowledge on Race, Language and Religion; understand the concept of social issues; study the cultural landscape; understand the nature and scope of Settlement Geography; learn the characteristics of Rural and Urban Settlements; and acquire knowledge on Cultural regions and Cultural realms. In the laboratory part, the students understand the representation of proportional divided circles; compute time series analysis; calculate nearest neighbour index; and calculate and plot arithmetic growth rate.

Cartography:

This course helps students to know the different types of maps; understand the concept of bearing; get knowledge about map projection; understand the mechanism function of old and new series of topographical maps; acquire knowledge on thematic maps; understand the basics of remote sensing; prepare standard of FCCs and raster images; understand the basic components of prismatic compass and dumpy level. In the laboratory module, the students learn drawing of Scale Diagram for representing geographical data; drawing of projection; to understand to choose the projection type according to the purpose of making maps; the calculation and construction of thematic maps and how to prepare annotated thematic overlays from satellite images.

Rural Development:

In this course, the students study the concept, basic elements, and the measurement of the level of rural development; the theories of cumulative causation model, core-periphery model, Gandhian approach to rural development; different area based approach to rural development; the rural governance and rural development policies and programmes in India.

Department of Journalism

Programme Outcome:

Programme Outcome (PO) is a measure devised by the UGC for nonstop quality enhancement and revision of different programmes offered by the HE institutions. Mentioned below are some of the POs of Journalism & Mass Communication.

- **PO1 -** The students can get the understanding of the meaning & concept of news as a whole & they can know how to write different types of news articles for a newspaper. Through this, the students can get the thorough understanding of the complete path of the Indian Journalism till date.
- **PO2 -** The students can understand the responsibilities of the working journalists at their specified positions which give them an overall cognizance of the professional world and the various divisions of the print media organizations in an elaborate way.
- **PO3 -** The students can understand the process of the creation and publication of a newspaper which will be their strength when they start working as a professional. By learning the ethics of journalism, they can act ethically in the professional field.
- **PO4 -** The understanding of different theories & models in a subject is hugely important for a learner so as to know its utility in the daily life & in the society and it also helps the learners to put those models or theories into use in their daily occurrences.
- **PO5 -** The students can get the overall awareness of the corporatization structure of the media & also the various kinds of developments of the third world countries and gets the knowledge of various cultures distributed in the society.
- **PO6 -** If the students opt for career in radio, then this course will be highly beneficial for them as it provides the basic knowledge of the radio and also the practical knowledge further helps them to build up a strong ground in their career. It also makes the students completely capable in working for radio, since after studying this, the students can learn the different radio writing techniques & also gains the knowledge about the sounds & the functions of a radio news room.
- **PO7 -** This course helps the students to learn the ethics of photo journalism & all the necessary mechanisms of photography. The assignment on an outdoor photo shoot further readies the students for their photo journalistic profession.
- **PO8 -** Through this, the students can understand how to format television programs, the techniques of TV News and the knowledge of talk shows with television documentaries. The students can get the knowledge mainly from editing basics like video editing and television documentaries.
- **PO9 -** The students can understand the history of films and the production of films with the film documentation.
- **PO10 -** The hands on training basically on documentary research, life stories, writing concepts and the structure and scripting the documentary, the knowledge can help us in future documentation of films.
- **PO11 -** The hands on training helps the student to evaluate raw footage and the post production fixes for faults and understand the developing ideas from personal experiences.

- **PO12 -** The students can understand the overview of online journalism, network journalism, hyper local journalism and the ethics of online journalism.
- **PO13 -** The hands on training gives us the knowledge on tools online journalism, the design of visual and contents and history of blogging.
- **PO14 -** It helps the students to understand the development.
- **PO15 -** Students can understand through this come the global information flow, the rise of global media, press system of neighbor countries of India.
- **PO16 -** It helps to understand the students different types of rights, feminist movement and media studies and the issues and violations in international scenario and media operations.
- **PO17 -** The hands on training gives us the proper knowledge on any topic of social research project and a preparation of a suitable presentation.
- **PO18 -** The course is all about political views. It also gives the knowledge of priming and agenda setting, fundamental of digital political.
- **PO19 -** The students can get the understanding of advertising world. In this manner they will having a proper guideline to becomes a industry ready people.
- **PO20 -** This course gives the student a thorough knowledge of practical field as it becomes a important tool to establish a good image of the organization to their potential public. Public Relations becomes important in every sector of the society till date.
- **PO22 -** With the technological up gradation media change its nature and power as well. This course will make the students up to date according to the need of the media industry.
- **PO23 -** This course is all about research. A student will be very much able to conduct his dissertation from this course study.
- **PO24 -** This course will help the students to know the root of the culture of our Indian society and make them aware about our cultural diversity.
- **PO25 -** With the passage of time health issues becomes more and more important now a days. The students can get understanding of health communication and its importance as it is ignorant part in the mainstream media system in India.

Course Outcome:

- **CO1-CC1** gives a thorough meaning & concept of the news, neutrality & bias in the news, and the principles of news. It also provides the practical knowledge of how to write news reports, anchor story and distinguishes between the categories of news.
- **CO2-CC2** provides the students with complete knowledge of the contributors to the advent & evolution of Indian Journalism, and also about the history of all the newspapers.
- **CO3-CC3** gives an opportunity to understand about the positions, qualities and duties of different journalists working in various departments of the print media organizations. It also provides a vast knowledge about different types of journalism in an elaborate way.
- **CO4-CC4** provides the students the complete knowledge of different types of communication, role of media in a democracy and ethics in journalism. It also gives the practical knowledge, where the students creates & publishes a tabloid journal themselves.
- **CO5-CC5** deals with the vast knowledge of all the theories & models of communication & also about the famous Mac Bride Commission.
- **CO6-CC6** focuses on the concept of culture as a whole, and the globalization of the media.

- **CO7-CC7** provides the basic knowledge about one of the electronic medium, that is, radio. It also gives the practical knowledge of the creative use of sound editing.
- **CO8-SEC-A-3-1** is the skill enhancement course which deals with the complete knowledge of radio writing techniques & all the other technicalities of Radio news room.
- **CO9-SEC-A-3-2** is yet another skill enhancement course that specifies the primary details of photo journalism, all the mechanisms of photography & also provides an assignment on an outdoor photo shoot.
- **CO10- CC8** The course gives a concept of public service broadcasting, Doordarshan, Satellite TV and also provides us television program format, TV News techniques and the knowledge of presenting real lives in television and its documentations. The hands on training specifically video editing and the writing of TV script and also the documentations on television.
- **CO11-CC9** The course provides the students how to make a film like the motion pictures of Indian history, French new wave cinemas, Iranian new wave cinemas, Latin America's imperfect cinemas and the most popular new Indian wave with the exploring narratives of Bombay cinemas and the perfect knowledge of film production with the language of cinemas. It also gives documentation knowledge like the history of documentary films with the documentary movements in India.
- **CO12-CC10** Media ownership, Dual economy, the apex regulatory and publicity bodies are provided by this course. The freedom of press with the press council of India and Media house are also providing this course with code of ethics.
- **CO13-SEC-B-4-1** Students have learnt by the course understanding the documentary film and the production of documentary with writing proposals and budgeting.
- **CO14-SEC-B-4-2** This course provides the basics of production concepts, screenwriting, camera compositions, plot development and also the effective and efficient methods of shooting screen for editing the footage for maximum impact.
- **CO15-CC11**The come gives a concept of defining new media, technological determinism, the internet and it's beginning, online communities and the security and ethical challenges of online journalism.
- **CO16-CC12** The course provides Concept of development, development communications, role of media in development and the critical appraisal of programs and govt. Schemes.
- **CO17-DSE-A-5-1** These concepts like imbalance in global information flow, introduction to global media, cross culture communications and the knowledge of media and present Indian market are provided by this course.
- **CO18-DSE-A-5-2** Students have learnt from the course balance between rights and duties, state human rights Commission, media exposure and gender construction and the institutions of human rights.
- **CO19-DSE-A-6-3** This course helps the students to do a micro research project on any topic of social with proper reference and bibliography. It also helps to prepare a suitable presentation.
- **CO20-DSE-A-6-4** In this course the students will learn about the political communications. Political participation and mass persuasion and propaganda. The responsibilities of media in public opinion are also learnt from this course. And also the course helps the students the fundamentals of digital political advertising.

- **CO21-CC13** This course provides the students a basic knowledge regarding the historical over view of advertising along with communication model and advertising strategies followed by the advertising agency and advertisers.
- **CO22-CC14** This course gives the students a vast knowledge regarding management function of PR, historical background of the area and recent scenario of Corporate Social Responsibility which is very much important to establish strategic communication.
- **CC23-DSE-B-5-1** This discipline Specific Elective course will focus on multi platform communication along with audio visual script writing and content related information.
- **CC24-DSE-B-5-2** In this course a student will learn about research procedure and types also. Besides that this course will offer them a vast knowledge regarding Qualitative and Quantitative research method.
- **CC25-DSE-B-6-3** This DSE course will offer the students to know the culture tradition of India and different folk form of India which belongs to different region of the country.
- **CC26-DSE-B-6-4** This course provides the students a basic knowledge regarding health communication, health literacy, media and science journalism.

Program Specific Outcomes:

PSO 1: To create a learning environment to transform the students with strong fundamentals in mathematics, analytics, computer programming and problem solving.

PSO 2: To provide exposure to students to latest tools & methods in area of mathematics.

PSO 3: There are brilliant job outlooks for Mathematics graduates in the recent scenario.

PSO 4: Mathematics graduates are competent in academic, Research(TIFR, IISC), Industry, Government(DRDO), Private and Business organizations with the acquired programming skills.

PSO 5: The software and IT companies are the major employers of Mathematics graduates as well.

5. Course Outcomes:

Sl No.	Semester	Course Name	Course Detail	Course outcomes
1.	SEM-1	CC-1	Calculus, Geometry & Vector Analysis	1. Students should be able to do solving the problems on calculus, 2. Illustrates the various problems on geometry 3. Apply the knowledge and skills to solve problems on vector calculus.
2.		CC-2	Algebra	1. Discuss about the various types of mappings and handling mechanisms of classical and linear algebra
3.	SEM-2	CC-3	Real Analysis	1. To develop concept of Real numbers system. 2. Explain the Concepts of different properties of real numbers.
4.		CC-4	Group Theory-I	1. Explain the concept of Abstract algebra. 2. Acquiring knowledge on groups
5.	SEM-3	CC-5	Theory of Real Functions	1. To understand the concepts of Real functions which include limit, continuity and differentiability.
6.		CC-6	Ring Theory & Linear Algebra-I	1. Explain the concept of Ring theory.

				2. Acquiring knowledge on linear algebra.
7.		CC-7	Ordinary Differential Equation & Multivariate Calculus-I	1. The solution of linear and nonlinear equations, and the solution of differential equations(ODE) and functions of several variables
8.		SEC-A	i)C Programming Language ii) Object Oriented Programming in C++	1. To develop knowledge on C programming language 2. Describe the object-oriented programming approach in connection with C++
9.	SEM-4	CC-8	Riemann Integration & Series of Function	1. To develop knowledge on Riemann Integration 2. To do problem solving approaches in Series of Functions
10.		CC-9	Partial differential equation & Multivariate Calculus-II	1. The solution of linear and nonlinear equations, and the solution of differential equations(PDE) 2. Illustrate the process of solving problems in vectors through Multivariate Calculus
11.		CC-10	Mechanics	1. To do solving the real problems in Statics and particle dynamics
12.		SEC-B	i) Mathematical Logic ii) Scientific computing with SageMath/ R	1. To learn the basic knowledge of Mathematical logic, 2. Illustrate the scientific computing with the help of the programming languages sagemath and R
13.	SEM-5	CC-11	Probability & Statistics	1. To acquiring knowledge on Probability 2. To develop the concept of computational mathematics, data analysis in the platform of Statistics
14.		CC-12	Group Theory-II & Linear Algebra-II	1. Explain the concept of Abstract algebra. 2. Acquiring knowledge on groups 3. . Acquiring knowledge on linear algebra.

15.		DSE-A(1)	i) Advanced Algebra ii) Bio Mathematics iii) Industrial Mathematics	Apply the knowledge and skills acquired during the course to build and test a complete in 1. Advanced Algebra, 2. Bio Mathematics, 3. Industrial Mathematics
16.		DSE-B(1)	i) Discrete Mathematics ii) Linear Programming & Game Theory iii) Boolean Algebra & Automata Theory	Apply the knowledge and skills acquired during the course to build and test a complete 1. Discrete Mathematics, 2. Linear Programming & Game Theory, 3. Boolean Algebra & Automata Theory
17.	SEM-6	CC-13	Metric Space & Complex Analysis	1. To develop the knowledge on Metric Space & Complex Analysis
18.		CC-14	Numerical Methods	1. Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, 2. The solution of linear and nonlinear equations, and the solution of differential equations. 3. Analyze and evaluate the accuracy of common numerical methods.
19.		CC-14 Practical	Numerical Methods Lab	1. To develop the skill of Practical problems on numerical analysis with the help of computer programming
20.		DSE-A(2)	i) Differential Geometry ii) Mathematical Modelling iii) Fluid Statics & Elementary Fluid Dynamics	Apply the knowledge and skills acquired during the course to build and test a complete i) Differential Geometry, ii) Mathematical Modelling,

				iii) Fluid Statics & Elementary Fluid Dynamics
21.		DSE-B(2)	i) Point Set Topology ii) Astronomy & Space Science iii) Advanced Mechanics	Apply the knowledge and skills acquired during the course to build and test a complete i) Point Set Topology, ii) Astronomy & Space Science, iii) Advanced Mechanics

Department of Microbiology

Programe Outcomes:

After completion of this course a student can do the followings:

- Either one can get admission in masters or Integrated Ms-PhD by competing various National or International level exams to pursue higher studies.
- Or can join industries/offices in various departments of microbial practices.
-

Course Outcome:

Semester – 1

CC-1: INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY

Unit 1 History of Development of Microbiology

- Knowledge about discovery of microbes and history of microbiology.

Unit 2 Diversity of Microbial World

- Knowledge on taxonomy of microbes and classification of algae, fungi and protozoa.

Unit 3 An overview of Scope of Microbiology

- Knowledge about use and economic importance of microbes is daily life.

CC-1: INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY

(PRACTICALS)

- Know how to use instruments in laboratory with proper safety.
- Knowledge on identification and estimation of prokaryotes and preparation of media for microbial growth
-

CC-2: BACTERIOLOGY

Unit 1 Cell organization

- Knowledge of cellular structure and cell organelles found in microbes.

Unit 2 Bacteriological techniques

- To Know how to enumerate and produce pure cultures of microbes and preservation for future use.

Unit 3 Microscopy

- How to use microscope to view microscopic objects.

Unit 4 Growth and nutrition

- To know how to grow microbes invitro in laboratory with help of proper media with specific nutrients.

Unit 5 Reproduction in Bacteria

- To aware about the reproductive processes of microbes.

Unit 6 Bacterial Systematics

- To know about systematics and diversity of bacteria.

Unit 7 Important archaeal and eubacterial groups

- To gain knowledge on comparative studies of archaea and eubacteria.

CC2: BACTERIOLOGY (PRACTICAL)

- To gain knowledge how to use microscope.
- Knowledge of production of pure colonies.
- Identification of microbes by various staining methods

SEMESTER 2

CC3: BIOCHEMISTRY

Unit 1 Bioenergetics

- To know details of biochemical reaction in the cell.

Unit 2 Carbohydrates

- To have a knowledge about structure function and organization of biomolecule: carbohydrate.

Unit 3 Lipids

- To have a knowledge about structure function and organization of biomolecule: Lipid.

Unit 4 Proteins

- To have a knowledge about structure and organization of biomolecule: Proteins.

Unit 5 Enzymes

- To know working principle enzyme in a reaction and to form product(s).

Unit6 Vitamins

- Knowledge of role of vitamins in cell.

CC-3: BIOCHEMISTRY (PRACTICALS)

- Qualitative and quantitative studies of biochemical reaction with various biomolecules and gain knowledge of reaction kinetics.

CC-4: CELL BIOLOGY

Unit 1 Structure and organization of Cell

- To gain understanding of cell and cellular organelles.

Unit 2 Nucleus

- To understand organization of nucleus in cell.

Unit 3 Protein Sorting and Transport

- To understand transport of proteins from one organelle to others or cell membrane via specific procedure.

Unit 4 Cell Signaling

- To understand the cellular functions via various signals.

Unit 5 Cell Cycle, Cell Death and Cell Renewal

- To understand working of cell cycle in growth regeneration or death of cell or cellular activity,
-

CC-4: CELL BIOLOGY (Practical)

- To gain knowledge of a cell or internal structure of it from Pictorial or microscopic representations.
-

SEMESTER 3

CC5: VIROLOGY

Unit 1 Nature and Properties of Viruses

- To know characteristics of viruses and knowledge of its existence.

Unit 2 Bacteriophage

- Knowledge of types and characteristics of Bacteriophages.

Unit 3 Viral Transmission, Salient features of viral nucleic acids and Replication

- To know how viral infects cell and take control of it.

Unit 4 Viruses and Cancer

- To know how virus can cause cancer.

Unit 5 Prevention & control of viral diseases

- To know how we can combat viral diseases with various agents.

Unit 6 Applications of Virology

- Knowledge how to use viruses in human economy.

C-5: VIROLOGY (PRACTICAL)

- To gain knowledge by microscopic view of viruses in pictorial mode.
- Learn to assay infectivity of bacteriophages in host.

CC6: MICROBIAL PHYSIOLOGY AND METABOLISM

Unit 1 Microbial Growth and Effect of Environment on Microbial Growth

- To know how various factors, help in growth of microbes.

Unit 2 Nutrient uptake and Transport

- To gain knowledge about uptake of nutrient by various mode of transport.

Unit 3 Chemoheterotrophic Metabolism - Aerobic Respiration

- To gain knowledge of metabolism of aerobic bacteria.

Unit 4 Chemoheterotrophic Metabolism- Anaerobic respiration and fermentation

- To get acquainted with metabolism and fermentation of anaerobic bacteria.

Unit 5 Chemolithotrophic and Phototrophic Metabolism

- To get acquainted with the metabolic diversity and control of metabolism.

Unit 6 Nitrogen Metabolism - an overview

- To understand metabolism of Nitrogen utilizing bacteria.

CC6: MICROBIAL PHYSIOLOGY AND METABOLISM

(PRACTICAL)

- To get familiar with the microbial growth and their associated factors, helps in growth.
-

CC-7: MOLECULAR BIOLOGY

Unit 1 Structures of DNA and RNA / Genetic Material

- To know details about DNA structure and history of its discovery.

Unit 2 Replication of DNA (Prokaryotes and Eukaryotes)

- To Know about DNA replication in species.

Unit 3 Transcription in Prokaryotes and Eukaryotes

- To learn RNA formation from DNA along with gene regulation and expression.

Unit 4 Post-Transcriptional Processing

- To know how cell protect their RNA and make further expressions.

Unit 5 Translation (Prokaryotes and Eukaryotes)

- To know about protein formation in cell.

Unit 6 Regulation of gene Expression in Prokaryotes and Eukaryotes

- To provide knowledge on the genes and chromosome.

C-7: MOLECULAR BIOLOGY (PRACTICAL)

- Isolation and qualitative and quantitative expression of genetic materials.

SEMESTER –4

CC8: MICROBIAL GENETICS

Unit-1 Genomic Organization and Mutation:-

- To know the types of Mutations, molecular basis of mutation and the process by which one can get an idea that whether an agent is carcinogenic or not.

Unit-2 Plasmids:-

- The aim of the subject is to acquaint students with the characteristics of plasmids, extrachromosomal elements of DNA, Copy number control, incompatibility etc can be understood.

Unit-3 Mechanism of genetic exchange:-

- Students will be taught genetic materials, their structure and types, mechanism of genetic exchange.

Unit-4 Phage genetics:-

- Learn about genetics and microbial biodiversity using bacteriophages (viruses that infect bacterial hosts) as a model.

Unit-5:- Transposible elements

- In this course you will study both prokaryotic and eukaryotic transposable element, their mode of action and genetic variability.

CC-8: MICROBIAL GENETICS (PRACTICAL)

- Study the effect of different physical and chemical mutagen.
- Plasmid isolation, different conformation of plasmid.
- Determination of transformation, transduction and conjugation.

CC9: ENVIRONMENTAL MICROBIOLOGY

Unit-1 Microorganisms and their habitat:-

- To learn how the abundance and composition of microbial communities correlate with climatic perturbations, interact to effect ecosystem processes, and influence human health..

Unit-2 Microbial interaction:-

- To understand different microbial interaction in different environment.

Unit-3 Biogeochemical cycling:-

- Learn about biogeochemical cycles by which energy from the sun is assimilated by living organisms in environment.

Unit-4 Waste management:-

- By studying this part you will get an idea that how solid and liquid waste can be managed by various techniques.

Unit-5 Microbial Bioremediation:-

- The application of different microbes and the way by which naturally remediation can be done can be learnt by this portion.

Unit-6 Water potability:-

- Learn about the different techniques we can detect whether the water is potable or not.

CC-9: ENVIRONMENTAL MICROBIOLOGY (PRACTICAL)

- Soil analysis by pH, moisture, capillary action etc.
- Microbes' isolation from root adhering soil.
- Assessment of microbial quality of water sample.

- Different enzymatic detection of microbial origin.

CC-10: RECOMBINANT DNA TECHNOLOGY

Unit-1 Introduction to Genetic Engineering:-

- What is genetic engineering and how this can be done to improve human welfare can be studied by this unit. How recombinant DNA is prepared will give you the importance of biotechnology.

Unit-2 Molecular cloning: tools and strategies:-

- Learn different methods of Cloning strategy, introduction of recombinant DNA into host organism.

Unit-3 Methods in molecular cloning:-

- Different methods of molecular cloning, their manipulation can be studied by this unit.

Unit-4 DNA amplification and DNA sequencing:-

- Application of different PCR techniques and DNA sequencing methods can be learnt in different aspects in this unit.

Unit-5 Construction and screening of genomic and cDNA libraries:-

- Preparation and application of genomic and cDNA library can be studied

Unit-6 Application of RDT:-

- Knowledge about the different application of Recombinant DNA technology in agricultural, medicinal and in daily life.
-

CC-10: RECOMBINANT DNA TECHNOLOGY (PRACTICAL)

- Competence development and transformation test.
- Restriction digestion of DNA and electrophoresis to study band pattern.
- DNA cloning.
- PCR amplification of DNA.
- Demonstration od southern blot.

SEMESTER –5

CC-11: FOOD AND DAIRY MICROBIOLOGY

Unit-1: Food as a substrate for Microorganism

- Knowledge about microorganisms that can use food as the substrate for their growth and colonization.

Unit-2 Microbial spoilage of food:-

- To know details about the spoilage processes in food by microorganisms**.**

Unit-3 Principles and method of food preservation:-

- Food preservation by various methods so that we can increase the shelf life.

Unit-4 Fermented food:-

- Knowing about many fermented foods also having live microorganisms that may improve gastrointestinal health and provide other health benefits.

Unit-5 Food borne diseases:-

- Knowledge about different types of food borne diseases.

Unit-6 Food sanitation and control:-

- To know about providing adequate **food safety**, rules such as HACCP.

Unit-7 Cultural and rapid detection methods of food borne pathogen..:-

- Rapid detection of food borne pathogen by ELISA. PCR methods.

C-11: FOOD AND DAIRY MICROBIOLOGY (PRACTICAL)

- Microbial quality of milk.
- Isolation of food spoilage bacteria from spoiled food.
- Preparation of dahi.

CC-12: INDUSTRIAL MICROBIOLOGY

Unit-1 Introduction of industrial Microbiology:-

- Understanding industrial microbiology, the utilization of microorganisms in the production of a wide range of products.

Unit-2 Isolation of industrially important microbial strains and fermentation media:-

- Different processes for isolation of industrially important microbes and fermentation media.

Unit-3 Types of fermentation process:-

- Knowledge about the types of fermentation process.

Unit-4 Downstream processing:-

- Knowing Downstream processing, recovery and the purification of biosynthetic products from **fermentation** broth.

Unit-5 Microbial production of industrial products:-

- Different industrially important microbial products production process.

Unit-6 Enzyme immobilization:-

- Gaining knowledge about the processes of enzyme immobilizations techniques.

CC-12: INDUSTRIAL MICROBIOLOGY (PRACTICAL)

- Microbial fermentation of enzymes, amino acids, organic acids.
- Industrial visit.

SEMESTER –6

CC-13: IMMUNOLOGY

Unit-1 Introduction:-

- Knowledge about Immunology, the state of protection from infectious disease.

Unit-2 Immune cell and organs:-

- Knowing different organs and cell that are associated with immune system.

Unit-3 Antigens:-

- Role of antigen, types, and difference between different antigens can be understood.

Unit-4 Antibodies:-

- Types of antibody and their role in protecting the immune system can be understood.

Unit-5 MHC:-

- The choice between self and nonself antigen and the role of MHC can be understood.

Unit-6 Complement system:-

- Knowing the complement system, that enhances (complements) the ability of antibodies and phagocytic cells to clear microbes and damaged cells from an organism

Unit-7 Generation of immune response:-

- Types of generation of immune response can be studied.

Unit-8 Immunological disorder and tumor immunity:-

- Gaining knowledge about types of autoimmunity, immunological disorder.

Unit-9 Immunological techniques:-

- Different methods are predicated on the exquisite specificity of antibodies for their target proteins.

CC-13: IMMUNOLOGY (PRACTICAL)

- Total leukocyte, immunodiffusion, DOT ELISA determination.
- Immunoelectrophoresis technique.
- Serum separation from blood.

CC-14: MEDICAL MICROBIOLOGY

Unit-1 Normal micro flora in healthy human body:-

- Benefits of normal microflora in human body can be studied.

Unit-2 Sample collection, transport and diagnosis:-

- How sample is collect and transported to a far laboratory without any contamination and changes can be studied.

Unit-3 Bacterial diseases:-

- Knowledge about different types of bacterial diseases.

Unit-4 Viral diseases:-

- Knowledge about different types of viral diseases.

Unit-5 Protozoan diseases:-

- Knowledge about different types of protozoan diseases.

Unit-6 Fungal diseases:-

- Knowledge about different types of fungal diseases.

Unit-7 Antimicrobial agents..:-

- Knowledge about the antimicrobial agents such as antibiotics, bacteriocins etc.

CC-14: MEDICAL MICROBIOLOGY (PRACTICAL)

- Identification of bacteria by different biochemical techniques.
- Bacterial flora identification from skin.
- Antibacterial sensitivity test determination.
- MIC determination.
- Study different stages of malarial parasites.

SEC A: BIOFERTILIZERS AND BIOPESTICIDES

SEM-3

Unit 1: Biofertilizers:- This chapter gives students idea about biofertilizers, its types, application and role of biofertilizers in agriculture. Also students get acquainted with the advantages and disadvantages of biofertilizers application over chemical fertilizers.

Unit2: Non-symbiotic nitrogen fixers :- This chapter deals with the symbiotic and non-symbiotic N2 fixing microbes, methods of their isolation and characterization as well as field application.

Unit 3:- Phosphate solubilisers: It illustrates the type of microbes present in soil, their microbial activity, their application in agricultural field, & method of isolation.

Unit 4:- Mycorrhizal biofertilizers: To get knowledge about beneficial microbes in soil, how to increase soil fertility, ability to increase plant growth and health.

Unit 5:- Bioinsecticides: This branch gives idea of field application of bioinsecticides, their importance in plant health and growth, definition of bioinsecticides, and advantages over synthetic pesticides.

SEC B: MICROBIOLOGICAL ANALYSIS OF AIR AND WATER

SEM-4

Unit 1 : Aero microbiology: This deals with microbes present in air, their impact on environment, food and pharma industries.

Unit 2: Air sample collection and analysis: This topic is about how the air borne organism's isolation and characterization is done, what is air sampling; what is the necessity of air sampling and analysis.

Unit 3 : Control measures: It helps to get idea about the methods applicable for air purification, which reduces microbial load in air.

Unit 4: Water Microbiology: It illustrates about water borne diseases, and microbes present in water.

Unit 5: Microbiological analysis of water : Students get acquainted with the techniques of water purification, water quality analysis, and safety of potable water.

Unit 6: Control Measures: It is helpful to understand the physical methods which are applied to kill or inhibit water borne organisms, and to produce potable water for human consumption.

DSE A: Microbial Biotechnology

SEM 5

Unit 1: Microbial biotechnology and its applications: The knowledge can give the base for understanding the microbial biotechnology, its application in human therapeutics, environment and food technology. What is genetically engineered microbes and its importance in industry, and in agricultural field.

Unit 2: Therapeutic and industrial biotechnology: It illustrates the basics of recombinant microbial production process in pharmaceutical industries, microbial production of bioplastics and biopesticides.

Unit 3: Applications of microbes in biotransformation: This topic deals with the knowledge of biotransformation, its applications and significance, mechanism of microbial based transformation of steroids.

Unit 4: Microbial products and their recovery: This is very important to understand the modern biology; process of microbial product purification, immobilization, and the principles of different techniques like filtration, chromatography techniques etc. and their application in microbial product recovery.

Unit 5: Microbes for bio-energy and environment: This course is designed to build the concept about the applications of microbes in biogas, bio-diesel and bioethanol production, what is the significance of bioremediation, process of methane and hydrogen production using microbial culture.

Unit 6: RNAi: It illustrates about RNAi, its application, therapeutics, drug resistance mechanism, and gene silencing.

Unit 7: Intellectual Property Rights: This course is very important to make the students understand about the legal concept, about trademarks, patents, copyrights and their importance in biological field as well as in industry.

Practicals:

1.Study yeast cell immobilization in calcium alginate gels- Know the techniques of immobilization of cell using calcium alginate beads and also its importance and handling.

2. Study enzyme immobilization by sodium alginate method- Get knowledge of how to isolate enzymes from cell and how to immbobilize it.

3. Pigment production from fungi (Trichoderma / Aspergillus / Penicillium) – Know how to isolate fungi from natural sources and their selection using media.

4. Isolation of xylanase or lipase producing bacteria:- Understand the technique of isolation of specific organisms using selective media and their preservation.

5. Study of algal Single Cell Proteins- Get idea about single cell protein.

DSE B: MICROBES IN SUSTAINABLE AGRICULTURE AND DEVELOPMENT

SEM 5

Unit 1: Soil Microbiology: This topic deals with the knowledge of soil profile, properties, microbes in soil and microbial activity in soil, as well as the formation of soil.

Unit 2: Mineralization of Organic & Inorganic Matter in Soil: It gives the idea of how the plant materials decomposed and mineralized, role of microbes in that and impact on soil.

Unit 3: Microbial Activity in Soil and Green House Gases: It illustrates how the microbial activity impacts on soil, how the greenhouse gas production occur and impacts on environment.

Unit 4: Microbial Control of Soil Borne Plant Pathogens: It deals with definition of biocontrol agents, its use against microbial pathogens and mechanism of biocontrol agents.

Unit 5: Biofertilization, Phytostimulation, Bioinsecticides: The knowledge can give the base for understanding role of microbes in plant growth promoting, field application of biofertilizers and bioinsecticides, impact on agriculture .

Unit 6: Secondary agriculture Biotechnology: Students get acquainted with the processing parameters of biofuels, biogas ,its application, and advantages.

Unit 7: GM crops: It gives knowledge of production of transgenic plants and crops, its social, economical and environmental aspects, advantages over normally produced crops

Practicals:

1. Study soil profile – Get thorough knowledge of soil type, habitants, steps of soil formation, and microbial activity in soil.

2. Study microflora of different types of soils:- Get idea about soil microflora and their activity.

3. Rhizobium as soil inoculants characteristics and field application : Get hands- on- training of Rhizobium isolation from legumes.

4. Azotobacters soil inoculants characteristics and field application :- Get acquainted with the technique of Azotobacters isolation, their inoculation into different soil and their impact on soil.

5. Design and functioning of a biogas plant : Know about the industry and designing the biogas plant.

6. Isolation of cellulose degrading organisms- Students get acquainted with the technique of isolation of cellulose degrading organisms from natural sources and their preservation.

DSE A: PLANT PATHOLOGY

SEM-6

UNIT 1: Introduction and history of plant pathology: To get knowledge about the types of plant pathogens, types of diseases that inhibit the growth of plant, symptoms of diseases, and economic and social impact of plant diseases.

UNIT 2: Stages in development of a disease: Gives idea about the stages in development of diseases and role of pathogens.

UNIT 3: Plant disease epidemiology: Students will be acquainted with the concept that how pathogens play role in causing disease.

UNIT 4: Host pathogen interaction: Students get concept of microbial virulence factors, spreading of diseases, gene responsible for causing disease, and constitutive defense mechanisms in plants from this chapter.

UNIT 5: Control of plant diseases: It illustrates how to deal with plant pathogens, principles and practices involved in management of plant diseases, use of insecticides, how to produce disease resistant plants through genetic engineering

UNIT 6: Specific plant diseases: Gives knowledge about specific diseases caused by fungi, viruses, bacteria and their control.

Practicals:

1. Demonstration of Koch's postulates in fungal, bacterial and viral plant pathogens:- Get the knowledge about disease causing microbes .

2. Study of important diseases of crop plants by cutting sections of infected plant material - Albugo,Puccinia,Ustilago, Fusarium, Colletotrichum. :- Understand the type of plant infection and causative agent by sectioning of plant parts.

DSE B: INSTRUMENTATION AND BIOTECHNOLOGY

SEM- 6

Unit 1: Microscopy: It gives knowledge about principles and operation of microscopes, types of microscopes and their application.

Unit 2 : Chromatography: It illustrates the techniques of macromolecules separation, types & significance, its application, principles in biological field.

Unit 3: Electrophoresis: This chapter deals with the important techniques in biological field. Students get knowledge about the instrument used in this and also the significance of the technique and its advantage, disadvantages.

Unit 4: Spectrophotometry: Gives conception of handling instrument, knowledge of principles and use of the techniques for biomolecule analysis.

Unit 5: Centrifugation: Students get knowledge about the principles, types, importance and applicability of the technique in biological field.

Practicals:

1. Study of fluorescent micrographs to visualize bacterial cells:- Understand the importance of this technique to visualize the bacterial cell and its parts.

2. Ray diagrams of phase contrast microscopy and Electron microscopy:- Get idea of the techniques and its application.

3. Separation of mixtures by paper / thin layer chromatography:- Get thorough knowledge of chromatography techniques, instrument handling, and how the macromolecules get separated by this technique.

4. Demonstration of column packing in any form of column chromatography:- Know the technique, how the column to be packed, and how mixtures of molecules get separated.

5. Separation of protein mixtures by any form of chromatography:- Know the techniques and its application.

6. Separation of protein mixtures by Polyacrylamide Gel Electrophoresis (PAGE):-Get idea of electrophoresis techniques and separation of macromolecules.

7. Determination of λmax for an unknown sample and calculation of extinction coefficient: It demonstrates the Lambert-Beer law, calculation of λmax.

8. Separation of components of a given mixture using a laboratory scale centrifuge:- Know the instrument handling, i.e, centrifuge, separation of mixtures on that.

9. Understanding density gradient centrifugation with the help of pictures:- Get idea of density gradient centrifugation.

Department of Philosophy

Programme Outcome

B.A. Programme enables students

- To appear for competitive examination
- To choose the post graduate programme of their choice
- To acquire the knowledge with human values
- To Understand reality from different perspectives
- To learn research methodology

Programme Specific Outcome

- Philosophy aims at critical evaluation of our belief, knowledge and attitude. We foster personal and professional success through the development of critical thinking, effective communication, and creativity. Our mission is to enable students to grow, thrive and prosper. We are dedicated to provide opportunities and support for them from diverse backgrounds.
- Philosophy examines the relationship between individual and society. It enhances our ability to solve problems and persuasive powers. As Philosophy touches many subjects, it can be applied in any endeavor. Those who study Philosophy have skill necessary for academic and nonacademic jobs. We assist students to become well-informed global citizens with the capacity to negotiate in a rapidly changing and complex world. We support the career and personal development of our students with an effective, supportive, safe and affordable learning environment using modern technology.

Course Outcome

CC1

•The course outcome of this half of the course is functionally relevant. The systems of Indian Philosophy that are discussed herein shape the thought of the reader regarding the division of the systems basing on their belief in the Vedas.

•At the end, the course arouses the urge to study the different systems and how they differ and agree on the basic belief that Vedas is to be accepted as the core principle or not, belief in reincarnation, permanent soul, knowledge and the instruments of knowledge and so on.

CC2

•The course is a systematic narration of the History of Western Philosophy and is therefore very relevant for the students of philosophy. Dealing with a bouquet of philosophers starting from ancient Greek philosophy, Socrates, Plato, Aristotle and St. Thomas Aquinas along with the father of modern philosophy Rationalist Descartes continuing with Spinoza and Leibnitz, the course is an integrated study of Greek philosophers and the rationalist ones.

•It helps the students to know and understand the chronology starting as early as from pre-Socratic period and covering the Rationalist philosophers in the modern era.

CC3

•This half of the course relates to the systems of Indian Philosophy of which the constituents are—the systems of Samkhya, Yoga, Mimamsa finally giving way to Vedanta i.e. end of the Vedas where again there is a distinction between Monism and Dualism.

•The students get a comprehensive view of the varied views of the different systems of Indian Philosophy and thereby get a comprehensive view of Indian Philosophy with its different systems.

CC4

•The course relates to the Empirical philosophers starting with Locke, Berkeley, Hume and finally rounding up with Kant. It is a continuation and yet variation is there, as the source of knowledge here is sense-experience which lies in sharp contrast to rationality as cited in CC2. However, at the end it is Kant's theory which tries to make a synthesis between the two.

•The course will enable the student to have an overview of the two opposing views, regarding the source of knowledge and also following Kant how to make the two contradicting theories coordinate and thereby give a new one.

CC5

•This course handles Psychology as an integral part of Philosophy. It discusses the physical and the mental faculties and how the latter influences the former. The course very skillfully handles the distinction between mind and body and at the same time tries to unravel the intricacies of the mental maze.

•The course is a variation from the regular Philosophy course and it enables the students to understand the subject as well as the relation between the mental and the physical i.e. how and why the traits of a person change, why do people dream, how learning occurs, how intelligence can be measured and what are the methods of reaching out to mind and many more.

CC6 Social and Political Philosophy

•The course discusses one of the central questions of philosophy: How should we, as human beings, live together? This general question reveals the normative character of the philosophical approach to social issues. Philosophy does not just describe and analyze social structures and ways of thinking.

•It aims to address relations among persons in social life, and to ask what persons can demand or expect from their involvement in society. The course addresses ethical issues by examining the tension between personal moral principles and the obligations of social life.

CC7 Philosophy of Religion

•Philosophy of religion as a field may be popular because of the overlapping interests found in both religious and philosophical traditions. It raises fascinating questions and possibilities about the nature of reality, the limits of reason, the meaning of life, reasons for believing in God? Nature of good and evil and so on.

•To engage in philosophy of religion is therefore to engage in a subject that affects actual people, rather than only tangentially touching on matters of present social concern.

CC8 & 9 Western Logic

•Logical thinking encourages learners to think for themselves, to question hypotheses, to develop alternative hypotheses, and to test those hypotheses against known facts.

High value is given when strong logical thinking or reasoning skills is displayed. •Logical reasoning aptitude tests are designed to measure ability to draw logical conclusions based on statements or arguments, and to identify the strengths and weaknesses of those arguments.

CC-10-Epistemology and Metaphysics

•Epistemology deals with the subject of what it means to know, and what it means to know that you know. Knowledge as justified true belief also deals with the subjects of what it means to be justified, what is the nature of truth, and finally, what the nature of a belief is.

•Epistemology looks at how we know what the truth is and whether there are limits to this knowledge, while metaphysics seeks to understand the nature of reality and existence.

•There is difference between what is true and what is real. In philosophy, the terms mean different things, even though we use them interchangeably in everyday life. What is true has to do with what beliefs we can justify, while what is real is about all of existence.

CC11 & 13 – Nyaya Logic and Epistemoligy

•Nyaya, (Sanskrit: “Rule” or “Method”) one of the six systems (darshans) of Indian philosophy, important for its analysis of logic and epistemology.

•The major contribution of the Nyaya system is its working out in profound detail the means of knowledge known as inference (see anumana).

CC12 – Indian Ethics

• Every religious and every philosophical system of India has a prominent ethical component. Ethics is the core of all these systems.

•In every religious tradition, good moral conduct is considered essential for a happy and contented life.

CC14 – Western Ethics

•Ethics is the business of moral philosophy by which humans try to determine what behaviors are right and wrong; good and bad; noble and ignoble. Each person strives for rectitude as they understand it, while working within the accepted values of a larger group dynamic.

•Ethics as normative science deals with moral ideal or the good in order to enquire the nature of our conduct. … Ethics is concerned with the highest good or absolute good. It investigates the nature of its fundamental notions i.e. right, duty and good.

DSE (Discipline Specific Elective Paper)

-DSE-A(1) &A (2) (Any one from the following options)

Logic, Ethics, Philosophy of Language (Indian)

•Logic helps us to construct effective arguments and to spot weak ones. It is a skill that is useful in the field of reasoning, critical thinking and aptitude enhancement.

•Ethics grants us some expectation of consistency and predictability in behavior/action. The origins of moral standards and the role they play in society helps to understand the lines separating right and wrong types of behaviour.

•The whole object and purpose of language is to be meaningful, because the needs of human communication are various. It consists of vocabulary and how concepts are expressed through words.

DSE-B (1) Classical Texts (Any one from the following options)

Epistemology takes the central position in Philosophy because it influences researchers to frame their research in their attempts to discover knowledge.

An Enquiry Concerning Human Understanding -D. Hume

Empiricism is a fundamental part of the scientific method that all hypotheses and theories must be tested against observations of the natural world rather than depending on a priori reasoning, intuition, or revelation.. Hume is concerned about what and how we know. For instance, he does not deal with the question of whether there actually are necessary connections between events, he simply asserts that we cannot perceive them and argues that as we cannot perceive necessary connections between events, the question of whether or not they actually exist is irrelevant and meaningless. Hume is a keen opponent of rationalist metaphysics, which seeks to answer questions such as whether or not God exists, what the nature or matter and soul is, or whether the soul is immortal. The mind, according to Hume, is not a truth-tracking tool. He deals with how the mind works and why it reaches the conclusions, but it cannot take us beyond reason.

The Problems of Philosophy—Bertrand Russell

Bertrand Russell forms a brief and accessible guide to the problems of philosophy. He focuses on problems which will provoke positive and constructive discussion, Russell concentrates on knowledge rather than metaphysics. If it is uncertain that external objects exist, we can have knowledge of them by probability. There is no reason to doubt the existence of external objects simply because of sense data. Russell distinguishes between knowledge by acquaintance and knowledge by description. Hence theory of knowledge occupies a larger space than metaphysics in this book.

DSE-B(2)

The contemporary Indian philosophers offer a meaning and purpose to life and make it an aspect of the process of enriching every sphere of life.

Contemporary Indian Philosophy (Any one from the following course)- a) Swami Vivekananda b) Rabindranath Tagore (6 Credits per week) c) Sri Aurobindo d) d) M.K.Gandhi

•Swami Vivekananda was a great lover of Vedantic philosophy. He believed in monism. He had firm faith on one God. His motto was to establish a link among different religions. He did not see any difference between a Veda or Koran or Bible. Temple. Through his universal religion, Vivekananda preached the unity of God. He attached great importance to the unity of all religions and their union into one universal religion. Swami Vivekananda says, "Each soul is potentially divine. The goal is to manifest this divinity within, by controlling nature, external and internal.

•According to Rabindranath Tagore, the essence of religion is humanity. It is this human aspect which forms the basis of religion. Humanity and divinity do not belong to two different orders. The aim of religion is to awaken the element of divinity that lie hidden in man. To Tagore, religion should be always a uniting force but not a dividing force. True religion is that which accepts the unity of all people instead of their differences in religious faiths. True religion is inner development of the individual that makes a man to rise above his society, country and sect.

•Aurobindo'ssupermind is an intermediary power between the unmanifested Brahman and the manifested world. He claims that the supermind is not completely unknown to us and can be realized within ourselves as it is always present within. It can be found in the Vedas and that the Vedic Gods represent powers of the supermind] In The Integral Yoga he declares that "By the supermind is meant the full Truth-Consciousness of the Divine Nature in which there can be no place for the principle of division and ignorance; it is always a full light and knowledge superior to all mental substance or mental movement." Supermind is a bridge between Sachchidananda and the lower manifestation.

•The two pillars of Gandhism are truth and nonviolence to transform the individual and society. We learn truth, right method for living, peacefulness, regard for seniors, opportunity and making progress toward it. The social goal was described by Gandhi as Sarvodaya. The welfare of human beings, not of systems or institutions, is the ultimate consideration.

SEC-A (any one of the following) :

1.Logical Reasoning &Application:Indian& Western

•This reasoning tricks for competitive exam app plays a major role in all the competitive exams, bank exams and other entrance test of various institutions because logical reasoning reveals a person's analyzing ability and to make the decision based on the given conditions.

2.Man & Environment

•It deals with the study of flow of energy and materials in the environment.It deals with the study of nature and its function.

•It deals with the exchange of various materials between the biotic and abiotic components of environment. E.g., Biogeochemical cycles.

SEC-B (any one of the following)

1. Bussiness Ethics

•Business ethics (also corporate ethics) is a form of applied ethics or professional ethics that examines ethical principles and moral or ethical problems that arise in a business environment.

• It applies to all aspects of business conduct and is relevant to the conduct of individuals and entire organizations."

2. Feminist Philosophy

•The scope of the Feminist theory is not limited to women's rights and gender equality. It includes guiding principles that can be utilized in a variety of situations. … •Feminist theories celebrate and accept diversity in ethnicity, culture, age, sexuality, geography, politics, religion, ability, education, etc

3.Peace Studies

•Here are some actual jobs of graduates in Peace Studies from other programs:

Human Rights Officer, United Nations Office of the High Commissioner for Human Rights.

•National Coordination Officer for Peacebuilding, United Nations Mission

Director, Complaints and Legal Services, Ugandan Human Rights Commission.

3. Philosophy of Human Rights

•The philosophy of human rights addresses questions about the existence, content, nature, universality, justification, and legal status of human rights. The strong claims often made on behalf of human rights (for example, that they are universal, inalienable, or exist independently of legal enactment as justified moral norms) have frequently provoked skeptical doubts and countering philosophical defenses .

Department of Political Science

Programme Outcome

Programme Outcome (PO) is a measure devised by the UGC for nonstop quality enhancement and revision of different programmes offered by the HE institutions. Mentioned below are some of the POs of Political Science (Honours & General).

- **PO1**- Being a branch of broader social studies it helps in providing a supportive and holistic development for any student towards good citizenship. It enables the students with mechanisms suitable for job market, particularly administrative placements in public and private sector. Moreover, higher studies and socially relevant research are always there as an option.
- **PO2**-It helps in enhancing and offering quality of life for any student in the context of her/his community, society, state and world by arousing the level of consciousness.
- **PO3**-Human being is basically social and political animal. Every modern individual is destined to live a political life. The subject deals extensively with the analysis of political systems and its different aspects. It equips the students with the theoretical and practical applications to politics and the examination of political behavior of others and to decide on their own one.
- **PO4**- Till date state is considered as the highest form of social organization and the identity and entitlements of every individual is integrated with state. Political Science deals every aspect of state, government and governance with utmost care. It thereby enables the students to protect and maintain the rights of their own and of others.
- **PO5**- Concept of entitlement is integrally associates with the concept of duties and the programme of Political science undoubtedly cultivates the sense of basic duties, social, political, economic and cultural among the students.
- **PO6**- Life in a modern context is highly interrelated phenomenon. The subject of Political science enables the students with the techniques of integrating their own community and society based needs and aspirations with broader national and international dimensions as well as from comparative perspectives.
- **PO7**- Good living for any individual presupposes some kind of ideological foundation always. Political Science introduces the students with different kinds of ideologies from theoretical and comparative perspectives and thereby helps them in choosing the best course of action for them.
- **PO8**- The subject includes understanding of political institutions, policies, processes, and behavior, as well as groups, classes, government, diplomacy, law, strategy and war. All these understanding are absolutely essential for running the economic, social, political, cultural and scientific life of the society.

- **PO-9** Protest is also an integral part of human existence. The subject teaches us to make a difference between different kinds of protests; lawful and unlawful, just and unjust or individual and collective ones.
- **PO-10** Power is the key ingredient of life and the social, political, economic, scientific and cultural life of the world. It is the centre on which the national and international existence revolves around. Political Science as a programme at the honours and general courses apportions studies on different facets of power.

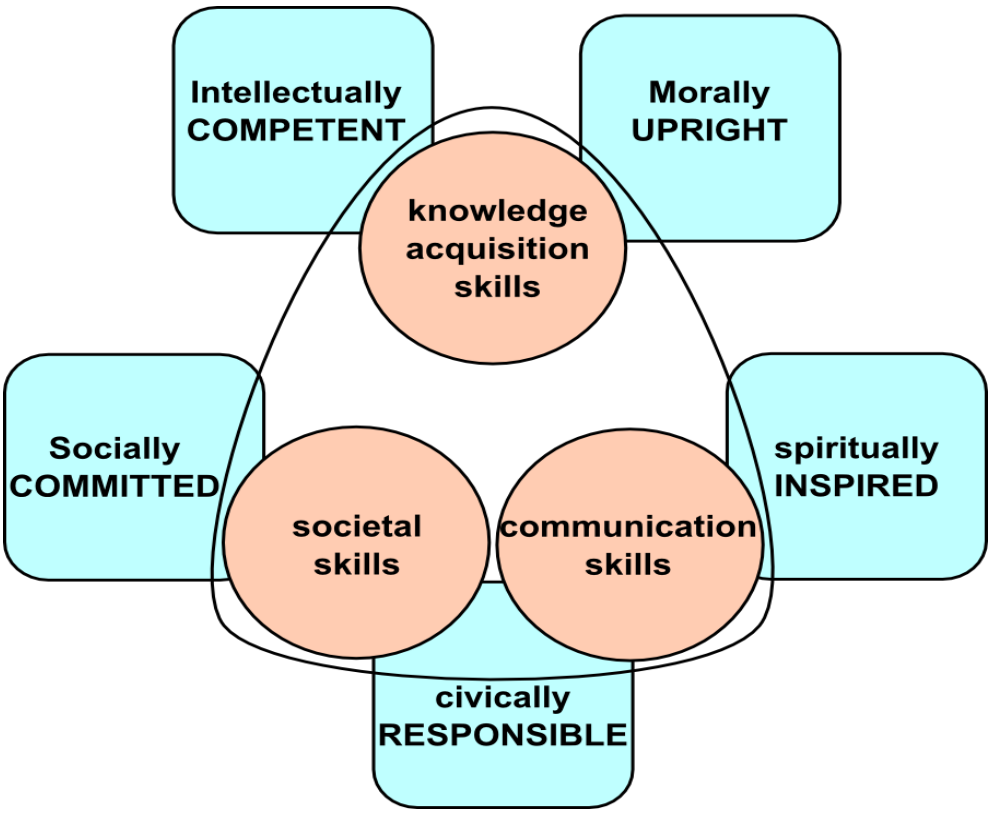
Course Outcome

The broader issue of Progrmme Outcome is actually measured through some specific evaluation of Course Outcome. In the following paragraphs the issue of Course Outcome for Political Science is dealt in detail with reference to the newly introduced CBCS curriculum of the University of Calcutta.

- **CO1-CC1** deals with the different concepts of political theory
- **CO2- CC2** highlights the different debates and approaches towards understanding political theory
- **CO3-CC3** covers the different aspects of Constitutional Government system in India.
- **CO4-CC4** spots on the structures and processes of Indian politics
- **CO5-CC5** relevant Indian political thoughts from ancient to medieval are featured here.
- **CO6-CC6** focuses on the comparative government & politics.
- **CO7-CC7** multiple perspectives on International relations are included here.
- **CO8-CC8** modern Indian political thought draws up the attention here.
- **CO9-CC9** again is on practical international relations since 1945.
- **CO10-CC10** emphasis here is on ancient and medieval western political thought.
- **CO11-CC11** is another part of western political theory.
- **CO12-CC12** states aspects of Political Sociology
- **CO13-CC13** underscores the relevant concepts and perspectives of public administration
- **CO14-CC14** specifies analysis of public policy in India
- **CO15** In the discipline specific course awareness is generated towards issues of gender & politics, South Asian politics, Indian foreign policy, different developmental processes and social movements of India, issues of citizenship and human rights.
- **CO16** Specific skill enhancement is also a part of course outcome and here aspects involving legal literacy, legislative practices and procedures, basic understanding of legal system and elementary research techniques are outlined.

Department of Psychology

Programme Outcome (P.O.): Program outcomes refer to broad objectives of a degree program, particularly as they pertain to the quality and/or productivity of the program. The **Program Outcomes** of our institution consist in moulding graduates having the following attributes.



PO1: Intellectually Competent:

The Graduates will be able to

- obtain the core knowledge base in their academic field
- acquire the knowledge with facts and figures related to various subjects in humanities, pure sciences, bio-sciences, and social-behavioural sciences
- develop ability to generate innovative, relevant knowledge through inquiry, critical reflection and synthesis
- understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life
- acquire the skills in handling scientific instruments, planning and performing in laboratory experiments. They can be able to grasp the skills of observations and drawing logical inferences from the scientific experiments
- analyze the given qualitative and quantitative data critically and systematically and develop the ability to draw the objective conclusions

- think creatively (divergently and convergent) to propose novel ideas in explaining facts and figures or providing new solution to the problems
- realize how developments in any science subject helps in the development of other science subjects and vice-versa and how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable developments
- develop optimistic and scientific outlook not only with respect to science subjects but also in all aspects related to life
- realize that knowledge of subjects in other faculties such as humanities, performing arts, etc. can have greatly and effectively influence which inspires in evolving new scientific theories and inventions

PO2: Morally Upright

Our Graduates will

- manifest a personal conviction that justice and peace are the foundations of societal living
- be led by the voice of their conscience and always do what is right

PO3: Socially Committed

Our Graduates will

- be socially conscious, sensitive and active persons, who are committed and accountable agents of social good
- manifest genuine concern for human values and ecological conditions
- be committed to social justice and the dignity of all sections of society, especially the underprivileged

PO4: Spiritually Inspired

Our graduates will

- take personal responsibility for their choices and actions
- be led by personal and professional standards of ethics with a commitment to integrity and honesty

PO5: Civically Responsible

Our graduates will

- be responsible members of social and professional communities
- promote democratic values and peaceful living in a multi-faceted society, with courage of conviction

Programme Specific Outcome (P.S.O): These are statements that describe what graduates of a specific program should be able to do?

Psychology is a fascinating and challenging subject. The most obvious reason to study psychology is the subject-specific knowledge one can gain and the insight that he or she will develop into the mind, brain and human behaviour. On B.Sc/B.A (Honours) Psychology course one can able to know a diverse range of subjects including cognitive psychology, forensic and investigative psychology, and educational psychology, the psychology of sport and exercise, and critical social psychology

In brief, it can be said that psychology actually enhances the self growth and development of the individuals. Our **Program Specific Outcomes** are evidences for the above attributes in our graduates in the form of the following skills

PSO1: Knowledge Acquisition Skills

Ability to learn individually and collaboratively the following processes like

- measurement of attitude, aptitude, interest, adjustment skills
- counseling process and techniques
- analysis and interpretation of the causes behind the major psychological issues seen with people in the society today

PSO2: Societal Skills

Commitment and accountability for social transformation in civil society and be able to:

- Be concerned for environmental sustainability
- Enunciate and abide by standards of ethics
- Enhance the coping skill with different problems in life

Course Outcome (C.O): Course Learning Outcomes are statements clearly describing the meaningful, observable and measurable knowledge, skills and/or dispositions students will learn in this course.

Semester-I

- **CO1-CC-1: Introduction to Psychology:** To introduce students to the basic concepts of the field of psychology with an emphasis on applications of psychology in everyday life and also make them acquainted with cognitive process, states of consciousness and learning, memory
- **CO2-CC-2: Statistical Methods for Psychological Research:** To familiarize students with the use of statistical methods in psychological research and the techniques of statistics for quantitative research.

Semester-II

- **CO3-CC-3: Biopsychology:** To explore the biological basis of experience and behaviour and to develop an appreciation of the neurobiological basis of psychological function and dysfunction
- **CO4-CC-4:Psychology of Individual Differences:** To develop an understanding of the concept of individual differences with the goal to promote self-reflection and understanding of self and others

Semester-III

- **CO5-CC-5: Development of Psychological Thought:** This course provides a basic introduction to the development of the discipline both from the Indian as well as western perspective
- **CO6-CC-6: Psychological Research:** To educate students with the process and the methods of quantitative and qualitative psychological research traditions
- **CO7-CC-7: Social Psychology:** Develop an understanding of the individual in relation to the social world. Introduce students to the realm of social influence, as to how individuals think, feel and behave in social situations

Semester-IV

- **CO8-CC-8: Understanding Psychological Disorders:** The paper aims at providing an overview of the concept of abnormality and the symptoms and etiology of various psychological disorders. This will sensitize them to information on psychopathology and dispel myths regarding it
- **CO9-CC-9: Statistical Methods for Psychological Research-II:** To educate students with the techniques of inferential statistics and hypothesis testing
- **CO10-CC-10: Applied Social Psychology:** To help student understand social problems and gain knowledge about intervention strategies

Semester-V

- **CO11-CC-11: Understanding and Dealing with Psychological Disorders:** To introduce the etiological understanding and therapeutic interventions for the various psychological disorders and also to help students develop and understanding of how to deal with moderate to severe psychopathology
- **CO12-CC-12: Developmental Psychology:** To equip the learner with an understanding of the concept and process of human development across the life span To impart an understanding of the various domains of human development To inculcate sensitivity to socio-cultural context of human development.

Semester-VI

- **CO13-CC-13: Organizational Behaviour:** To develop an awareness of the concepts related to organizational behavior and to help the students develop connectivity between concepts and practices of organizations

- **CO14-CC-14: Counselling Psychology:** To develop an understanding of basic concepts, processes, and techniques of Counseling and to acquaint the learner with the challenges of Counseling

Discipline Specific DSE (2 in Semester-V and 2 in Semester-VI)

- **DSE-A -01: Positive Psychology:** To introduce the basic concepts of the growing approach of positive psychology and understand its applications in various domains
- **DSE-A -02: Human Resource Management:** To help students understand the various processes and issues inherent in organizations related to human resources
- **DSE-B -03: Health Psychology:** To understand the relationship between psychological factors and physical health and learn how to enhance well-being
- **DSE-B -04: Community Psychology:** To learn the link between individuals and communities and deal with social issues more effectively with people's participation
- **DSE-A- 05: Cultural and Indigenous Psychology:** To understand the role of culture in understanding behaviour and exploring psychological insights in the Indian thought traditions
- **DSE-B -06: Psychological Perspectives in Education:** To understand of the interface between education and psychology and to appreciate the various issues and challenges that emerge with reference to the application of psychological ideas and theories in the discipline of education. This paper will enable learners to deal with various problems and issues related to student diversity in a classroom

Skill Enhancement Elective (SEC) (1 in Semester- III and 1 in Semester- IV)

- **SEC-A-01: Behaviour Modification:** To understand the concept of behaviour modification and its applications
- **SEC-A-01: Communication:** To understand communication and its different facets in different context
- **SEC-B-02: Emotional Intelligence:** To understand the concept of emotional intelligence and learn ways of developing it
- **SEC-B -02: Stress Management:** In everyday life we experience stress related to various situations. Students will learn how they can make adjustments and manage to cope with stress more effectively

Department of Sanskrit

Programme Outcome:

After completion of UG curriculum specially taking Honours in Sanskrit Literature a student can plan

for her/his future as follows-----

- ✓ Can move for further higher studies like Masters in Sanskrit, Pali&Prakrit, and Buddhist Studies etc.
- ✓ Can join diploma courses in Manuscriptology.
- ✓ Can study or prepare for WBCS, IPS and IAS, PSC examinations or any other Govt. or non Govt. job.
- ✓ After completion of Masters can move for NET/SET examination
- ✓ Go for research work like M. Phil, Ph.D
- ✓ After passing NET/SET can go for college teaching
- ✓ After completion of Masters/Graduations can join for B. Ed & M. Ed course and move for school or college teaching.

Course Outcome (UG)

Semester -1

CC 1

Sec A –Raghuvaṃśam – Written by Kalidasa, this epic narrates the tale of Dilipa, a righteous Ikshvaku king who undertakes a pilgrimage to the sage Vashistha's ashram in order to beget a son. This text provides extensive information about the duties and responsibilities of an ideal king and life in ashramas.

Sec B- Kumārasambhavam- This epic by Kalidasa recounts the penance performed by Parvati in her quest for Shiva. The importance of penance and perseverance in achieving one's goal, and the triumph of substance over superficial beauty are highlighted here in.

Sec C- Kirātārjunīyam- One of the earliest texts dealing with espionage and intelligence gathering. This epic by Bharavi describes a spy's account of Duryodhana's rule over Hastinapur to Yudhisthira.It deals extensively with the principles and best practices of ruling over a kingdom.

Sec D- Nītiśatakam- This text by Bhartrihari is a compilation of a hundred verses dealing with ethical behavior, rules and social norms**.**

Sec E- Origin and development of Mahakavya and Gitikavya- We learn the works and literary style of Asvaghosa, kalidasa, Bharavi, Magha, Bhatti, Sriharsa, Jayadeva, Bhartrhari and Amaru.

CC2

SecA- Vedic Literature- A study of vedicliterature provides invaluable insights into our culture and the Hindu way of life. Moreover research has demonstrated that the phonetics of vedic mantra has roots in various energy points of the body and reciting these mantras stimulates these points and raises energy level.

Sec B- Rāmāyaṇam- One of the largest epic in world literature, the Ramayanam helps us comprehend significance of relationships and provides a vivid portrayal of the ideal relationship. It also renders ethical and philosophical teachings fundamental to the Hindu cultural consciousness.

Sec C- Mahābhārata- The Mahabharata is the longest epic in the world. Among other things it contains devotional and philosophical material central to the ancient culture. It also makes us aware of the four goals of life and the importance of work.

Sec D- Purāṇas- Particularly dealing with legends and other traditional lore, the Puranas are known for their intricate layers of symbolism. They provide us with vital information about myriad subjects such as grammar, medicine, cosmology etc.

Sec E – General introduction to Vyākaraṇa, Darśana, Sāhitya-śāstra-Vyakarana is the backbone of any literature. Sanskrit vyakarana is most powerful and effective among all languages. Most of the world literature have taken something from Sanskrit vyakarana. It has highest number of vocabularies. A sound understanding of grammer serves to strengthen our grasp over various linguistic structures. In this section we also learn different school of Indian philosophy and six major school of Indian poetics.

Semester-2

CC 3

Sec Aśukanāsopadeśa- In this part of Kadambari social and political thoughts of Banabhatta has been depicted.

Sec B- Rājavāhanacaritam- Poetic excellence of Dandin is at its peak in this prose.

Sec C-Origin and development of Prose- The Panchatantra illustrates the central Hindu principles of Niti . It highlights the importance of practical pedagogy and the pivotal role played by a teacher.

CC 4

Sec A-Gītā: Cognition and emotive apparatus- The Gita expounds upon the nature of the Mind and the role of Atman. It also discusses the three Gunas vis-à-vis their impact on the mind.

Sec B- Gītā: Controlling the mind Confusion and conflict- The Gita describes the various causal factors of conflict and the means of controlling the mind. The importance of discipline balanced life and diet control as well as thinking clearly are impressed upon us.

Sec C-Gītā: Self-management through devotion- The Gita instruct us to acquire moral qualities and abandon frivolous debates with highlights the significance of surrendering one's ego towards achieving self-management.

Semester-3

CC-5, Sec-A

Svapnavāsavadattam-The plot of the drama is drawn from the romantic narratives about the Vatsa king Udayana and Vasavadatta, the daughter of Pradyota, the ruler of Avanti, which were current in the poet's time and which seem to have captivated popular imagination. The main theme of the drama is the sorrow of Udayana for his queen Vasavadatta, believed by him to have perished in a fire, which was actually a rumour spread by Yaugandharayana, a minister of Udayana to compel his king to marry Padmavati, the daughter of the king of Magadha.

will help students to-

i) enhance ability to read and understand Sanskrit,

ii) understand and explain the contemporary relevance and utility of Indian society depicted in this drama and also know the sacrifice of Indian woman for her husband and nation,

iii) critically assess existing research through careful reading analysis and discussion.

Sec- B+C

Abhijnanashakuntala, (Sanskrit: "The Recognition ofShakuntala") drama by Kalidasa composed about the 5th century CE that is generally considered to be the greatest Indian literary work of any period. Taken from legend, the work tells of the seduction of the nymph Shakuntala by King Dushyanta, his rejection of the girl and his child, and their subsequent reunion in heaven.

i) Students will have advanced command on Sanskrit language, through advanced text reading and basic knowledge in Prakit, Sanskrit,

ii) Students can acquire capacity to appreciate the need to have alternative perspectives in Sanskrit,

iii) Students can take the knowledge about inter-cast marriage, female education, duties of good housewife, police system, penalty of thief, revenue system, law of inheritance of ancient Indian society and it can be useful for multi-disciplinary research on history and socio-economic life,

iv) This drama will remind the student the importance of nature in human life.

Sec-D →Critical Survey of Sanskrit drama

i) This section aims to get students acquainted with the journey of classical Sanskrit drama from pre-Kalidasa to post-Kalidasa period,

ii) It aims to provide information to the students about the life of dramatists and their works, like, Bhasa, Kalidasa, sudraka, Visakhadatta, Sriharsa, Bhavabhuti, Bhattanarayana, and students can understand the spread and influence of Sanskrit drama and culture through the ages in various parts of India.

CC-6 →Poetics and literary criticism

Sec-A →Introduction to Sanskrit poetics

i) Students can acquire knowledge about the origin and development of Sanskrit poetics,

ii) This section displays a working knowledge of the various names of Sanskrit poetics,

iii) Students can understand concept of definition, objective and causes of poetry,

iv) Effectively communicate ideas related to the poetic works during class and group activities.

Sec-B →Forms of Kavya-literature

i) This section aims the students to learn the classification of poetics,

ii) Analyze literary works for their structure and meaning,

iii) Identify and describe distinct literary characteristics of poetic forms.

Sec-C →Sabdashakti and Rasa Sutra

i) Students can learn about the function of word and meaning, denotative meaning, indicative meaning and suggestive meaning,

ii) Students can evaluate major theory of Rasa-Sutra of Bharata and its prominent expositions and the transcendental nature of Rasa (as discussed in Kavyaprakasa).

Sec-D →Figures of Speech and Meter

Students can learn about the general introduction of Indian Petrology and the definitions, nature and classification of various arthalaṇkāra and śabdalaṇkāra (according to Sāhityadarpaṇa X and Chandamañjarī).

CC-7 → Indian social Institutions and Polity

Sec-A→Indian Social Institutions: Nature and Concepts

Students will know about:

i) The sociological definitions of social institutions, from Vedic to classical literature and also from Buddhist and Jain literature and inscriptions of foreign writers,

ii) The different kinds of dharma in the sense of social ethics.

Sec-B →Structure of Society and Values of Life

Students will apprehend the knowledge about:

i) The four-fold division of Varṇa-System, division of Varṇa according to Guṇa and Karma, origin of Caste System from Inter-caste Marriages,

ii) The position of women in different stages of society,

iii) The social relevance of Indian lifestyle with special reference to sixteen Saṁskāras.

Sec-C →Indian Polity: Origin and Development

Students will be able to understand the concepts of:

i) Sabhā, Samiti, Vidatha, Rājakartārah, Ratnin, Coronation ceremony of Samrāṭ, Republic States in the Buddhist Period from Śatapathabrāhmaṇa, Digghanikāya, Mahāparinirbbaṇa Sutra, Aṅguttaranikāya, Ṛgveda, Atharvaveda,

ii) The concept of welfare state, essential qualities of a king, constituent elements of Jain Polity, relevance of Gandhian thought in Modern Period with special reference to Satyāgraha Philosophy.

Sec-D →Cardinal Theories and Thinkers of Indian Polity

Students will be able to assess the knowledge about:

i) Saptāṅga Theory of State, Maṇḍala Theory of Inter-State Relations, Śāḍgunya Policy of war and peace, CaturvidhaUpāya for Balancing the power of State and three types of State powers,

ii) The life and works of Manu, Kauṭilya, Kāmandaka, Śukrācārya, Somadeva Suri, Mahatma Gandhi.

Sec-A-1

Competence in presenting academic writing and oral presentation skills.

1. Students would be able to translate and retranslate simple/compound sentences in Sanskrit as well as in English.
2. Students would comprehend any unknown text and able to write small answers from them.
3. They can express their thoughts and ideas in simple Sanskrit.
4. Write and speak in grammatically correct way.

5.They can write formal and informal letter in Sanskrit- which may help them to acquire job in Sanskrit libraries and also somewhere old letters preserved as documents.

Semester-4

<u>CC-8</u>→Indian Epigraphy, Palaeography and Chronology

Sec-A→Epigraphy

Students will be able to understand:

i) The termology of epigraphy and types of inscriptions,

ii) The contemporary relevance and utility of studies of inscriptions in the reconstruction of Ancient Indian history and culture,

iii) How the Kharosṭi and Brāhmī script was deciphered and contribution of scholars in the field of epigraphy.

Sec-B →Palaeography

Students will be able to apprehend:

i) The origin of early Indian script, development of the script,

ii) The palaeographical methods and analysis and classification of distinct styles of writing.

iii) Information about writing materials, inscribers and library.

Sec-C →Study of selected Inscriptions

Students will accumulate knowledge from selected inscriptions like Giranāra Rock edict, Giranāra inscription, Eran pillar inscription, Khalimpur copperplate, etc.

Sec-D →Chronology

Students will be able to get attached with Archaeology and Museumology by knowing about:

i) System of dating of inscriptions,

ii) Main eras used in insciptions.

<u>CC-9</u>→Modern Sanskrit Literature

Sec-A →Mahākāvya and Charitakāvya

Students will gain knowledge about the modern Sanskrit kavyas by Sanskrit writers and the simplicity of the Sanskrit language in modern writings.

Sec-B →Gadya and Rūpakas

Students will know about Gadyas and Rūpakas.

<u>CC-10</u> →Sanskrit World Literature

Sec-A

Students will learn about the contributions of western scholars (like Max Müllar, William Jones) in the field of Sanskrit studies.

Sec-B

Students will learn about the contributions of Indian pioneers (like Swami Vivekananda, Sri Aurobindo, DayānandaSarasvatī to modern Scholars like Roma Choudhuri, Ramaranjan Mukherjee).

Sec-C →Sanskrit Fables in World Literature

Students will know about the influence of Sanskrit fables (Pañcatantra, Vetālapañcaviṁśatikā etc.) in world literature.

Sec-D

Students will gain knowledge about:

i) the influence of Rāmāyaṇa and Mahābhārata in South-eastern Asia,

ii) Mahābhārata stories as depicted in folk cultures of South-eastern Asia.

Sec-E →Kālidāsa in the West

Students will acquire the capacity to appreciate the need to learn about the English and German translations of Kālidāsa‘s works in aspect of western literature and theatre

Sec-F →Sanskrit Studies across the World

Students will acquire the capacity to validate the popularity of Sanskrit studies across the world.

Sec-B-2

Competence in presenting academic writing and oral presentation skills.

1. Students would be able to translate and retranslate simple/compound sentences in Sanskrit as well as in English.
2. Students would comprehend any unknown text and able to write small answers from them.
3. They can express their thoughts and ideas in simple Sanskrit.
4. Write and speak in grammatically correct way.
5. They can write formal and informal letter in Sanskrit- which may help them to acquire job in Sanskrit libraries and also somewhere old letters preserved as documents.

Semester-5

CC-11

Sec-A

Vedic Literature- Students are pursuing the course of Vedic Texts endowed her to develop a critical perspective to assess existing research through careful reading ,analysis and discussion. The students can take the knowledge about the classification of veda, socio economic life of the Aryans , women education ,teacher and taught relation and philosophical importance.

Sec-B

Vedic Grammar- The students would know Vedic Grammar and also know the differences between classical and Vedic Grammar.

Sec-C

Brāhmaṇa and Upaniāsad- The students would know about the Brahamana texts and its importance.

The course acquiring the knowledge about holistic spirits, self- confidence and secular attitude and logical mind.

DSE -1

Darśana

Students would be able to know that how we know the worldly things ,& what is the importance of Indian philosophy and contribution of Shankaracharya in the field of Indian philosophy.

CC-12

SEC-A

General Grammar

•Student can produce the sanskrit verb- phrases themselves, and they will know the importance of traditional grammar.

•Students would be able to translate simple Bengali- sentences into Sanskrit languages, and would be able to use the traditional lexicon.

•Students would be able to understand the system of traditional grammar.

SEC-B

General Introduction of Philology

•This course of linguistics will be increase the knowledge about descriptive , morphological and hypo logical classification of languages.

•The student would know about the nature of spoken Vernacular sanskrit, different phonetic and morphological changes of the words.

Section -c

KārakaprakaraṇamvaiyākaraṇSiddhāntaKaumudī

• This course will be increase the sense of grammar and develop their systematic knowledge, because the knowledge of grammer is a pillar of languages.

• Help gaining proficiency in Sanskrit language.

• It give holistic and comprehensive understanding of the subject.

• Understanding the syntax and rules of Sanskrit language.

Section -D

Samāsaprakaraṇam

VaiyākaraṇaSiddhāntaKaumudī

•This course help to develop the concept of the specific method of grammar according to the Perspective of BhattojiDiksita'sSiddhantaKaumudi.

• To familiarize students about compound constructions of Sanskrit words.

• Be able to realize the internal and external factors of influence for greeting poetry.

DSE 2(Kāvya)

SEC-A

Sāhityadarpaṇa chapter- 1,2 ,3

•Students would know about the definition and importance of Kavya from different perspective.

• Thery learn many notable works of Criticism combine discussion of text with broad arguments about the nature of literature and principles of assessing it.

Semester-6

CC- 13

(Indian ontology and epistemology)

SEC-A

Essentials of Indian Philosophy

•The students would know about the history of Indian philosophy.

• Evaluate the major theory of 'Astika' and 'Nastika' philosophy. The students could relate the philosophical theory in practical life.

•This course aims to get the students acquainted with the Indian principles of debate and its application not just in philosophical dialogue, but in every walk of knowledge.

SEC-B

Ontology (Based Tarkasaṃgrahaḥ)

•A conceptual perspectives that human behaviors and actions are largely determined by stimuli which are not off their own making.

•The relevance of the emergence of debate for philosophical activity in India.

SEC-C

Epistemology(Based on Tarkasaṃgrahaḥ)

•The significance of epistemology in Indian Philosophy and the sense in which religion is involved in it.

•An attempt to extract some intercultural aspects of the history of Indian Philosophy.

DSE-3

Vyākaraṇa

SEC-A

Sidhāntakoumudī -strīpratyaya

• Learning the sanskrit Grammar they clearly communicate in sanskrit.

• Learning the proper grammar they express their thoughts and ideas.

• They can write and speak correctly.

•They gain the knowledge of stripratyaya.

SEC-B

SidhāntakoumudīTinantaprakarana(√bhu)

•This course enables the students to learn and acquire the Advance knowledge of Derivational process of the sanskrit Verbal Morphology based on the sidhantakoumudi.

SEC-C

Siddhāntakaumudī Ajanta Puṃliṅga

•They can write and speak correctly.

•They gain the knowledge of Ajanta Pumlinga.

•Analyzing the Paninian Grammar.

CC- 14

Sanskrit Compilation and communication

SEC-A

Vibhaktyartha, Voice and Kṛt.

•This paper enables the students to know about the sanskrit grammatical traditions. It also deals with the derivational process of the words ending with primary Suffiixes (Krit)

Base and Sidhantakoumudi.

SEC-B

Translation and Communication

•Students would be able to translate simple Bengali sentences in to Sanskrit Languages,

And would be able to use the traditional Lexicon.

•Realizes the value of language diversity.

•Motivated to learn new Languages.

SEC-C

Essay

•The students could learn to write essay in sanskrit language and also learn how to summarize a passage.

•The course is to expose students to the rich and profound tradition of creative writing in sanskrit. Also enriched by new genres of writing.

DSE- 4(Veda)

SEC-A

Eastern and western interaction of the Veda / śunaḥśepopākhyāna of AitareyaBrāhmaṇa.

•This course acquiring the knowledge about holistic Sprils, self confidence and Secular attitude and logical mind.

•The student would know about the Brahamana text and it's importance.

SEC-B

TaittiriyopaniṣadŚikśavally/Muṇḍakopaniṣad

•Philosophical text 'Mundakopanisad' will be developing the philosophical sense of the students.
•Develops self-control, moral values and Social Ethics.

•Becomes a self motivator and initiates hermony .

Course Outcome(PG)

Semester -1

Course Code: SANS MA CC 1

Course Title: Veda: From this portion students can learn different types of Vedic Hymns and also able to learn the theological aspects of Veda.

Course Code: SANS MA CC 2

Course Title: Grammar: This part helps the students to know the higher grammar of Paniniyam which helps them to build up their grammatical knowledge and sense of writing in Sanskrit.

Course Code: SANS MA CC 3

Course Title: Darsana: In this portion orthodox Indian philosophy is taught from where they can grasp philosophical knowledge.

Course Code: SANS MA CC 4

Course Title: Sahitya: This section taught the utility of poetry by which students can learn aesthetic concept.

Course Code: SANS MA CC 5

Course Title: Cultural heritage of India & Vedic Studies: From this portion students are taught eastern and western views and cultural heritage of India along with Upanisads and Vedic grammars by which they can build up a clear concept in Vedic studies.

Semester -2

Course Code: SANS MA CC 6

Course Title:Pāṇinīyavyākaraṇa: Siddhāntakaumudī (Sandhi, Prakrṛtibhāva and Relating to the formation of ajantapuṇglinga, srilinga, napuṃsakaliṇga)

Course outcome- This section will help students to acquire the following skills-

i. Advanced knowledge and understanding of Paniniyan School of grammar, related to euphonic combination, morphologywithPaniniyan aphorism.
ii. Advanced command of Sanskrit Language through advanced text reading and text editing.
iii. Ability to critically assess any text written in Sanskrit language or existing research through careful reading. Also, by unfolding the inner meaning of an unknown word of a text using grammatical strataandunveiling the author's intension, which can be useful for any future research work.

Course Code: SANS MA CC 7

Course Title:Darsan: Bhāsāpariccheda with general acquaintance with Muktāvalī (anumānakhaṇda) and Arthasamagraha (Purvamīmāṃsā text).

Course outcome- This section will help students to-

i. know about the history of Indian Philosophy

ii. Evaluate the major theory of Nyaya and mīmāṃsā. Also, relate the philosophical theory in practical life.

Course Code: SANS MA CC 8

Course Title:Sahitya: Dhanyāloka- A work articulating the philosophy of aesthetic suggestion (dhvanivyāñjana) written by Ānandavardhana.

Course outcome-

i. Dhvani theory- According to P. V. Kane this book (Dhanyāloka) is an epoch-making work in history of Alaṃkāra Literature. Hence students will apprehend the modern approach of ancient poetics and can do a comprehensive study or research work on the soul or essence of poetry.
ii. Will help to enhance students' basic analytical & critical thinking and communicative competencies.
iii. Through Sāhityadarpaṇa students can know- variety of Rupaka, definition of Nātaka, character of Nāyaka and Nāyikā in various Rupaka, what is to be shown in a drama or not, vast knowledge about performing a Rupaka in ancient stage etc.

Course Code: SANS MA CC 9

Course Title:Veda

Course outcome-

i. Śatapathabhahmaṇa, taittirīyabrahmana: Vedas, the oldest sacred writing of India- The brahmanas are later exegetical (explanation of religious text) text where students can know the proper performance of rituals in Vedic period.
ii. Through Pañcamahāyajña a student can know the ancient people- their respects to the elders, hospitality given to guests, feeding the poor animals, which are parts of mahāyajña, largely missing in common people today.
iii. Through vidyāpraśamsā students can learn the proper way to gain real knowledge.
iv. Nirukta: Students will know most of the rare and obscure Vedic words by the various possible etymologies.
v. Also understand the real significanceof a particular word that has been used in specific mantras.
vi. They will acquire the knowledge of systematic creation of glossary.
vii. Students will also know the classification of the deities according to the three regions, earth, sky and heaven, as described in the Nirukta, which is essential for the advanced Vedic studies.

Course Code: SANS MA CC 10

Course Title: Grammar & Philology: In this portion students are taught higher Sanskrit grammar and descriptive and historical linguistics, development of linguistics and philological development of IE sounds.

Semester -3

Course Code: SANS MA CC 11

Course Title:Darsana: In this portion different types of Indian philosophical topics are explained by which a student can be able to learn advanced knowledge in Indian orthodox philosophy.

Course Code: SANS MA DSE SH 1

Course Title:Sahitya DSE 1: Here comparative aesthetics with its relationship to the development of Rasa theory has been discussed along with two such poetics.

Course Code: SANS MA DSE SH 2

Course Title:Sahitya DSE 2: Here Natyasastra&Ramayanachampu are taught. From Natyasastra students can learn verity of stages and other important topics regarding drama or stage performances and from Ramayanachampu they know peculiarities of Champu literature as well as the story.

Course Code: SANS MA DSE SH 3

Course Title:Sahitya DSE 3: Here two major epic has been taught by which they can know the style of the both composers of these epics as well as the story of the epic and its poetic excellence.

Semester 4:

Course Code: SANS MA CC 12:

Course Title:Sahitya: 1) Ratnavali- Attributed to the Indian Emperor Harsha,Ratnavali is a Natika in four Acts.It provides valuable insights into the exigencies of court life and contains one of the first textual references to the celebration of Holi. It is one of the most important Sanskrit Natikas, and finds extensive mention in the Dasarupaka.

2) Dhvanyaloka- Anandavardhana'sDhvanyaloka is a pivotal work in the history of Indian poetics which revolutionized Sanskrit literary theory by declaring Rasa as the primary goal of poetry. It highlights the fact that the evocation of Rasa can be expounded by recognizing a semantic influence beyond metaphor and denotation viz. the influence of suggestion.

Course Code: SANS MA DSE SH 4

Course Title:Sahitya DSE 4: 1) Uttararamacarita-Bhavabhuti's magnum opus Uttarramacarita is a Nataka in seven Acts. It is arguably the finest example of the use of Karuna Rasa and provides readers with a plethora of historical and social knowledge of the time, especially in relation to marital relations.

2) PrabodhaCandrodaya – Written by Krishna Mishra in the eleventh century, PrabodhaCandrodaya is an allegorical drama which emphasizes the advaita philosophy. It intends to teach the advaita doctrine primarily to those interested in Kavya.

Course Code: SANS MA DSE SH 5

Course Title:Sahitya DSE 5: 1) Harshacharita- Harshacharita marks the beginning of historical poetic works in Sanskrit. Written by Banabhatta in an ornate style, it provides graphic descriptions of rural India's natural environment and the structure of the society at that time.

2) Meghaduta – One of Kalidasa's most famous works, Meghaduta is the pre-eminent specimen of the Mandakrantametre. It gave rise to the genre of SandesaKavya, and is celebrated for its richness of content and power to evoke sentiment. It makes the readers aware of the importance of duty.

Course Code: SANS MA DSE SH 6

Course Title:Sahitya DSE 6: 1)Mricchakatika- Attributed to Sudraka, Mricchakatika is one of the most significant Prakaranas in Sanskrit Literature. Rife with comedy, romance, intrigue and politics, Mricchakatika provides invaluable insights into the socio-political conditions of the time.

2) Mudrarakshasa– Written by Vishakhadatta, Mudrarakshasa is a Nataka which emphasizes on Chanakya's political strategies and methods. It contains a vivid portrayal of practices germane to espionage which were employed by Chanakya to serve his purposes.

Department of Sociology

Programme Specific Outcome (PSO)

Sociology is the study of human social relationships and institutions. The subject matter of sociology is diverse ranging from crime, religion, family, state, social class and racial divisions to the shared beliefs of a common culture and from social stability to radical change in societies.It seeks to understand all aspects of human social behavior, including the behavior of individuals. Sociology analyzes and explains important matters in our personal lives, our communities and the world. At the personal level, sociology investigates the social causes and consequences of such things as racial and gender identity, family conflict, deviant behaviour, aging etc. At the societal level, sociology examines and explains matters like crime and law, poverty and wealth and so forth. At the global level, sociology studies such phenomena as population growth and migration and economic development.

Students graduating with a bachelor's degree in sociology will demonstrate the following:

- **Critical thinking:** Demonstrate the ability to analyze and evaluate multiple and competing social, political and/or cultural arguments.

- **Sociological imagination:** The ability to articulate and evaluate how individual biographies are shaped by social structures, social institutions, cultural routines and multiple segments of social difference and/ or inequality.

- **Communication:** The ability to formulate effective and convincing written and verbal arguments.

- **Diversity:** An awareness of how people of different cultural, religious and political belief systems interpret the world around them through those beliefs.

- **Sociological Theory:** The ability to use and evaluate both classical and contemporary perspectives in sociological theory.

- **Methodology:** The ability to interpret and evaluate several of the major social science research methodologies as well as the relationship between research questions and appropriate methods.

- **Substantive Areas:** The ability to demonstrate knowledge of multiple key substantive areas within the field of sociology and evaluate competing perspectives.

- **Better understanding of real life situation:** The ability to apply sociological concepts and theories to the real world and ultimately their everyday lives.

- **Analytical thinking:** Field survey and preparation of dissertation paper is an inseparable part of Sociology undergraduate programme. Students have to collect primary data for

census as well as his/her research topic and analyse the data to draw conclusions. So, qualitative and quantitative analytical skills are enhanced.

- **Observation power:** A sensible observation power is necessary to identify the research problems in field study. So a perception about human society slowly grows up.

- **Communication skills and Social interaction power:** Students of Sociology stream have to work beyond the class room boundary at the time of field study activities. As a result good communication skill develops while interacting with local people.

- **Ethical and Social Responsibility:** Students have to learn about institutions, folkways, mores, culture, social control,social inequality, population composition, population policy, society and culture of India. All these help to instill among the students of Sociology a sense of ethical and social responsibility.

- **Professional and Career Opportunities:** Students will have the opportunity to join professional careers in Sociology and allied fields. Sociology provides an intellectual background for students considering careers in social services, public policy, government service, NGOs and academia.

Course Outcome:

CC-1: Introductory Sociology-I

Unit 1: Sociology: Discipline and Perspective

Sociology is a discipline that makes it possible to see how individual experiences which mean how we act, think, feel and remember are connected to the wider society and the sociological perspective invites people to look at their familiar surroundings in a completely new manner. This part centralizes its focus on Sociological Thinking, Emergence of Sociology, Understanding Sociology as a Science and its relation with Common Sense and also on some basic concepts like Association, Aggregates, Community and a few others. Along with this analysis on Individual and Society, Concept and Agencies of Socialization and the meaning, characteristics and types of culture and so forth are also taken into account in this section.

Unit 2: Sociology and Other Social Sciences

The social sciences are subjects concerned with how humans interact with the world and sociology is interested in the study of society. Within the social sciences are such disciplines as economics, psychology, anthropology etc. Each is concerned with a piece of global human concerns. The subject matter emphasizes on the relation of some specific social sciences involving Social Anthropology, Psychology and History with Sociology.

Unit 3: Human Society

Human Society is a group of people involved with each other through persistent relations or a large social grouping sharing the same geographical or social territory, typically subject to the same political authority and dominant cultural expectations. In this respect, this topic gives attention to Social Institutions and Social Processes, meaning, agencies and mechanisms of Social, Conformity and Deviance, definition and factors of Social Change and also stresses on Social Mobility.

CC-2: Sociology of India-I

Unit 1: India: An Object of Knowledge

India is the second most populous country and the most populous democracy in the world. The knowledge tradition of India is ancient and interrupted like the flow of the river Ganga. This segment investigates on the Colonial and Nationalist Discourses and also on the Subaltern Critique as an object of knowledge of India.

Unit 2: Indian Society: Concepts and Institutions

Indian society is a pluralistic society with a complex social order characterised by a multitude of ethnic, linguistic, religious and caste divisions. This topic introduces to some significant concepts and Institutions of Indian Society focusing on the Concept and Critique of Caste, Agrarian Classes, Profile and Location of Tribes, Structure and Change of Village, Principle and Pattern of Kinship and finally on the aspect of Religion and Society.

CC-3: Introductory Sociology-II

Unit 1: On the Plurality of Sociological Perspective

The pioneering European sociologists offered a broad conceptualization of the fundamentals of society and its workings. Their views form the basis for today's theoretical perspectives which provide sociologists with an orienting framework or a philosophical position for asking certain kinds of questions about society and its people. This introduces students to an overall understanding of different Sociological Perspectives.

Unit 2: Functionalism

The functionalist perspective sees society as a complex system whose parts work together to promote solidarity and stability. This approach looks at society through a macro-level orientation and broadly focuses on the social structures that shape society as a whole. Here discussions are centered on the General arguments of Functionalism and Contributions of Parsons and Merton towards Functionalism. Finally, it moves further on the critical overviews drawn by the leading Functionalist thinkers.

Unit 3: Interpretative Sociology

Interpretative Sociology is the study of society that concentrates on the meanings people associate to their social world. It strives to show that reality is constructed by people themselves in their daily lives. This issue highlights on the General arguments of Interpretative Sociology and the Contributions of Weber in the field of Interpretative Sociology.

Unit 4: Conflict Perspective

The conflict perspective derives from the ideas of Karl Marx who believed that society is a dynamic entity constantly undergoing change driven by class conflict. Here, the focus of attention is on the General arguments of Conflict theory and highlighting on the contributions of Dahrendorf and Coser in the domain of Conflict theory. Critical overview of Conflict theories are also discussed here.

Unit 5: Structuralism

Structuralism is a methodology that implies elements of human culture must be understood by way of their relationship to a broader, overarching system or structure. It works to uncover the structures that underlie all the things that humans do, think, perceive and feel.In this respect this subject matter provides the students with the General arguments of Structuralism and Levi Strauss's Contributions towards framing Structuralism.

Unit 6: Feminist Perspective

Feminist sociology is a theoretical perspective which observes gender in its relation to power, both at the level of face-to-face interaction and reflexivity within a social structure at large. The issue of Feminist perspective draws on the General arguments, Stages of development of feminism and Varieties of feminist sociology.

CC-4: Sociology of India-II

Unit 1: Ideas of India: India is a pluralistic society having a complex social order that comprises of a multitude of ethnic, religious, linguistic divisions etc. Hindus constitute the majority of the country's population. This section focuses on the sociological ideas drawn by Mahatma Gandhi on Harijan and B.R.Ambedkar on Dalit and Hindu Society and also highlights on the Indological and ethnographical approaches of different social thinkers.

Unit 2: Resistance, Mobilization and Change: Resistance denotes a variety of active efforts and actions to oppose, fight and refuse to submit to abusive behaviour. This resistance generates mobilization which actually makes capable of movement involving people's active participation and in turn creates change. Focusing on this issue this portion revolves on Dalit politics, Mobility and Change, Womens Movement, Peasant Movements etc.

Unit 3: Challenges to Civilization, State and Society: The Indian Civilization, State and Society have faced a number of challenges since the past. This unit emphasizes on Factors

and Control Measures of Communalism, Significance, issues and Challenges of Secularism and the Concept and Growth Factors of Nationalism.

CC-5: Political Sociology

Unit 1: Contextualising the study of Politics: Politics designates on a set of activities that comprises of making decisions in groups or the power relationship between individuals such as resource distribution or status. The purpose of this unit is to give a brief introductory understanding of different notions, characteristics of politics drawn by political thinkers and philosophers that creates the structural framework of what constitutes Political Sociology.

Unit 2: Basic Concepts: Some important basic concepts that cover this portion are the meaning and types of influence of power and authority and also the characteristicsand distribution of power. It also gives a clear understanding on State-Society Relations, Concept of Citizenship and the Rights, Obligations and Civil Society. Finally it also highlights on the Nature and types of Elites and the Ruling Classes.

Unit 3: Political Systems: Political systems aim towards understanding on determining who holds power within the relationship of the government and its people and seeks to find out answer on the ways by which power of the government is used. So, this part analyses on the Meaning and Characteristics of Segmentary Political Systems and also Totalitarian and Democratic Political Systems.

Unit 4: Everyday State and Local Structures of Power in India: This enumerates the interconnections of Caste, Class and Patriarchy observed in the social context of India.

CC-6: Sociology of Religion

Unit 1: Religion as a Sociological Concept: Sociology of religion deals with the study of beliefs, practices and organizational forms of religion applying the tools and methods used in sociology. This unit introduces the students to the aspects of formulation of religion and the key approaches put forward by sociologists on the sociological meanings of religion ranging from the Sacred and Profane notions of Durkheim, the ideological weapon of religion of Marx to discussions on Weber on the relation between the Religious ethics and Economy and ultimately on Religion and Everyday Life within this domain of the sociology of Religion.

Unit 2: Elements of Religion: The main elements of religion are Beliefs, Myths or Stories, Sacred Texts, Ethics and Morality, Rituals, Symbols, Social Structures and Religious Experience. But this part basically deals with some of the elements of religion like Sacred, Myth, Ritual, etc.

Unit 3: Religion and Society: Contemporary Direction: The relationship between religion and society is in a continuous process of change. In different forms and ways religion affects different societies that lead to a change in societies. It can be a driving force in a reactionary rather than in a radical way. This part gives an emphasis on Religious Fundamentalism, Meaning, Characteristics and Factors of Secularism and Communalism, Religious Pluralism

and lastly on Class, Gender and Sexuality as different strands of Diversity in Religion and Identity.

CC-7: Sociology of Gender and Sexuality

Unit 1: Gendering Sociology: Gender is defined as the roles, behaviours, activities, attributes and opportunities that any society considers appropriate for men and women. This topic introduces students to have an overview of sociology of gender as a prominent subfield of sociology.

Unit 2: Gender as a social construct: The social construction of gender is a theory in feminism and sociology about the manifestations of cultural origins, mechanisms and corollaries of gender perception and expression in the context of interpersonal and group social interaction. This subject deals with several ways of understanding social construction of gender from a sociological viewpoint pointing specifically on Gender, Sex and Sexuality, Gender stereotyping and socialization, Gender role and identity, Gender stratification and inequality, Gender discrimination and patriarchy and Production of Masculinity and Feminity.

Unit 3: Gender: Differences and Inequalities: Gender differences are defined as biological differences between sexes which means how perceived differences may be culturally reinforced gendered behaviour that occur within supervision as opposed to actual biological differences among sexes while Gender inequality is the idea that men and women are not equal and that gender affects an individual's living experience. The central focus of this issue is to learn about gender differences and inequalities based on class, caste, family, work, third gender and sexual violence.

Unit 4: Gender, Power and Resistance: The set of roles and behaviours that societies define as appropriate for men and women can be the cause and consequence of power relations from the sphere of the household to the highest levels of political decision making and Resistance from a gender outlook can be used to promote change. The subject matter highlights on Power and Subordination and also reflects on Resistance and movements with a specific emphasis on Chipko movement and Gulabi Gang.

CC-8: Economic Sociology

Unit 1: Perspectives in Economic Sociology: Economic Sociology is the study of the social cause and effect of various economic phenomena. This field can be classified into classical period and a contemporary one, known as "New economic sociology". This section deals with some significant perspectives of Economic Sociology analysing on Formalism and Substantivism and New Economic Sociology.

Unit 2: Forms of Exchange: Exchange is a marketplace where securities, commodities, derivatives and other financial instruments are traded. The core function of exchange is to ensure fair and orderly trading and the efficient dissemination of price information for any

securities trading on that exchange. This segment examines on Reciprocity and Gift and also on Exchange and Gift as two key forms of exchange in economic sociology.

Unit 3: Systems of Production and Consumption: Production is the process of combining various material inputs and immaterial inputs in order to make something for output while Consumption is the final purchase of goods and services by individuals. The subject matter investigates on the systems of Production and Consumption that includes Hunting and Gathering, Domestic Mode of Production, the Indian scenario of Peasant, Land revenue systems and some others.

Unit 4: Some Contemporary Issues in Economic Sociology: It is found in the sociology of economic life that contemporary economic sociology closely examines critical and contemporary issues. In this respect this subject looks upon some contemporary issues in Economic Sociology reflecting on Development and Globalisation.

CC-9: Population Studies

Unit 1: Introducing Population Studies: Population studies are broadly defined as the scientific study of human populations. The major areas that are studied include broad population dynamics, fertility and family dynamics and several other areas. Here, students are acquainted with a specific overall understanding of definition, nature and scope of population, the relation between Demography and Sociology and also to gather an idea on the concepts and approaches given by Malthus and Marx on population and on the key aspect of Demographic Transition Theory.

Unit 2: Population, Social Structure and Processes: Population structure refers to the composition of a population. Observing at the population structure of a place shows how the population is divided up between males and females of different age groups. Population processes are typically characterised by processes of birth and immigration and of death, emigration and catastrophe which correspond to the basic demographic processes and broad environmental effects to which a population is subject. This subject matter is concerned about Population size and Growth, Fertility, Culture and fertility, Mortality, Determinants etc.

Unit 3: Population, Gender and Migration: In population, gender studies can be applied to realise population development goals while Migration is the movement of people from one place to another with the intentions of settling, permanently or temporarily, at a new geographical region. In this respect, this chapter aims to emphasize on Women, Family, Status and fertility, Society and New Reproductive Technologies and finally on Types and consequences of Migration.

Unit 4: Population Dynamics and development: Population dynamics is the branch of life sciences that studies the size and age compositions of population as dynamical systems and the biological and environmental processes driving them. Examples are ageing populations, population growth or population decline. Population and development generally refers to the study of the consequences of population trends on socioeconomic development, human

welfare and the natural environment. Students are able to learn on two key aspects of Population dynamics and development highlighting on Population as constraint and resources of development and also on the Population programmes and policies in India.

CC-10: Social Stratification

Unit 1: Introducing Stratification: This section familiarizes students on the meaning and forms of social Stratification.

Unit 2: Theories of Stratification: Social stratification can be examined from different sociological perspectives that consist of functionalism, conflict theory and symbolic interactionism. This subject is concerned about Marxian, Weberian and Functionalist theories of stratification.

Unit 3: Identities and Inequalities: On the basis of identities and Inequalities social stratification can be understood. In this sense, the present section reveals upon significant aspects of Caste, Race and Ethnicity and also on Feminism and Gendered Stratification to substantiate this issue.

Unit 4: Mobility and Reproduction: Within the context of social stratification this subject matter throws light on the meaning, forms and nature of Mobility and Reproduction and its institutionalised practices.

CC-11: Sociological Thinker-I

Unit 1: Origin & development of sociology as a distinct discipline: Sociology is a branch of social science that deals with the study of society, patterns on social relationships, social interaction and culture that surround everyday life. This introductory unit traces on the origin and development of sociology as a distinct discipline through the Role of European Enlightenment along with the French, American and Industrial Revolutions. It further points towards the contributions of some social thinkers like Montesquieu, St. Simon and also Auguste Comte.

Unit 2: Karl Marx: Karl Marx was a German philosopher, economist and sociologist who became a social revolutionary later on. Marx's critical theories hold that human societies develop through class conflict. The major objective of this part is on Marx's Materialistic Conception of History and the Capitalist Mode of Production.

Unit 3: Max Weber: Max Weber was a German sociologist and philosopher who did not believed in monocausal explanations. Instead he proposed that for any outcome there can be multiple causes. This unit has a deep insight on Weber's Social Action and Ideal Types and also includes the relationship between Religion and Economy.

Unit 4: Emile Durkheim: Emile Durkheim was a French sociologist. His work was mostly concerned with how societies could maintain their integrity and coherence in an era of modernity in which traditional social and religious ties are no longer assumed and in which new social institutions have come into being. This portion covers Durkheim's concept of Social Fact with a special focus on suicide as an e.g. of social fact. It also discusses the issue of Individual and Society through his discussion of Division of Labour.

CC-12: Research Methods-I

Unit 1: The Logic of Social Research: Social research is a research conducted by social scientists that follows a systematic plan. The methodologies of social research can be classified as quantitative and qualitative. This chapter addresses the logic of social research highlighting on the notion, aims and types of social research and also helps to understand the theory and research relationships. In addition, it also gives significant attention to the basic definitions of concepts, Conceptualization, Operationalization and Hypothesis and throws a keen observation on Objectivity and Reflexivity of Social Research.

Unit 2: Methodological Perspective: A methodological perspective may refer to the way in which a researcher intends to carry out his or her research from the specified or known methods in a discipline. The key perspectives of research methods that are being discussed here are Positivist, Interpretative, Humanist and Feminist Method.

Unit 3: Modes of Enquiry: Modes of Enquiry are the configurations of strategies for 'looking for answers' that comes under "methodology" and 'establishing their credibility' that comes under "justification". Some modes of enquiry for research that is being looked upon in this topic are the Steps of Research, Primary and Secondary data, Survey and Observation method as data collection methods, Questionnaire and Interview as Tools and techniques of data collection and analysing on Quantitative and Qualitative data.

Unit 4: Research Project-I: A research project is a scientific endeavour to answer a research question. In this aspect this unit emphasizes on the steps involved in writing a research proposal as a brief summary of the entire research that is to be conducted.

CC-13: Sociological Thinkers-II

Unit 1: Orientation to Post Classical Theories: This gives us to a deep insight on the Post Classical Theories in sociology that basically refers to different schools of sociology like structural functionalism, structuralism, pragmatism and so forth.

Unit 2: Talcott Parsons: Talcott Parsons was an American sociologist of the classical tradition. Based on empirical data, Parsons' social action theory was the broad, systematic and generalizable theory of social systems developed in United States and Europe. This topic aims to provide a clear picture on the four kinds of action systems drawn by Talcott Parsons.

Unit 3: Claude Levi Strauss: Claude Levi Strauss was a French anthropologist and was also a leading exponent of structuralism. Structuralism has influenced twentieth century social science. This topic deals with the Structuralism approach drawn by Claude Levi Strauss.

Unit 4: G.H.Mead and Erving Goffman: G.H.Mead is a major figure in the history of American philosophy and is regarded as one of the founders of symbolic interactionism while Erving Goffman is considered by some as the most influential American sociologist of the twentieth century known for 'Total institution' and various symbolic interactionist concepts. This segment draws attention on the concept of self-described by G.H.Mead within the symbolic interactionalist perspective and also gives a detailed description of Erving Goffman's Dramaturgy.

Unit 5: Peter L.Berger and Thomas Luckmann: Peter L.Berger was an Austrian born sociologist who became known for his work in the sociology of knowledge, the sociology of religion and various other arenas while the contributions of American-Austrian sociologist Thomas Luckmann were also central to studies in sociology of knowledge, sociology of religion and some other sub-fields. Peter L. Berger and Thomas Luckmann's understanding of the social construction of reality is the prime focus of this section.

Unit 6: Max Horkheimer, T.W.Adorno and Herbert Marcuse: The Frankfurt School comprised of a group of scholars known not only for developing critical theory but also popularizing the dialectical method of learning by interrogating society's contradictions. The main objective here is on the contribution of Max Horkheimer, T.W.Adorno and Herbert Marcuse as the prominent intellectuals of the Frankfurt school towards developing critical theory.

CC-14: Research Methods-II

Unit 1: Doing Social Research: Social research is a research conducted by social scientists that follows a systematic plan. The methodologies of social research can be classified as quantitative and qualitative. This paper draws significance on some specific ways of doing social research investigating on the process of Social Research, types of research design, notions and types of sampling and also to an in-depth understanding of the Field.

Unit 2: Statistical Methods: Statistical methods are mathematical formulas, models and techniques that are used in statistical analysis of raw research data. Here, different statistical methods are introduced comprising of Levels of Measurement, Frequency distribution, Graphic techniques, Measures of Central Tendency and Measures of Dispersion.

Unit 3: Research Project-II: A research project is a scientific endeavour to answer a research question. This chapter aims to learn about Research Design, ways of conducting Field Work and preparing Report Writing and also give knowledge to create bibliography and citations.

SEC-A (1): Reading, Writing and Interpretation in Sociology

Unit 1: Introduction: The virtues of repetition - Textual reading and writing: This consists of a 3 day assignment. For the first day, students are told to prepare a summary comprising of very few sentences of a short academic text in one paragraph without prior guidance by the instructor. For the second day assignment, students are again instructed to read the same text and after a brief discussion of CONTENT they are told to re-write the summary. Thus, the present assignment looks to finds out that whether the summary which is again written contains some of the most important points mentioned in the text and again in the third day assignment students are instructed to read the same text repeatedly for the second time and after a brief discussion of FORM they have to re-write the summary again. After this, it seeks to answer that whether the summary is well structured, clear and effective.

Unit 2: Techniques for reading:

2.1:Grasping the whole: Overview: In this stage, students are directed to have at an overview of understanding the entire text.

2.2: Divide and Conquer: Taking texts apart: In this level students are advised to have an indepth reading of the text by dividing each section apart comprising titles as the short summary of a text, introductions and conclusions, identifying important passages and sentences, distribution of emphasis, isolating words and terms to search for their meanings in dictionaries and encyclopaedias and finally contextualizing texts and taking the help of teachers or tutors if needed.

Units 3: Techniques for writing

3.1: Building a structure: What do you want to say?: Students are ordered to develop the structure of writing that will express the meaning that they want to convey through their structuring process i.e Firstly, creating stages of argument in the beginning, middle and conclusion, Secondly, working with blocks which suggests Sections, Paragraphs, Sentences, Thirdly, Sections and Paragraphs as key building blocks of academic prose and Fourthly length, balance and continuity of Sentences and Punctuation.

3.2: Borrowing material: Paraphrasing, Quoting,Citing: Here, emphasis is given on borrowing material adopting the methods of paraphrasing, quoting and citing. Such materials should be kept free from plagiarism and quotations of When, Why and How along with specific citation styles should be used.

Unit 4: Interpretations - Peer Reviewing: Students are enjoined to practice evaluating each other's work throughout the entire semester but the last week is thought to be standardized and a detailed exercise is given for the students involving a 3 day assignment. In the first day, the entire class of students is assigned to do an individualized, two-part composite reading and writing exercise designed by the instructor based on semester long experience of student abilities and interests. In the second day, students are assigned to evaluate and comment on the work of their colleague that indicates on the reading part of an individual assignment which would be

randomly distributed. The teacher moderates discussion of strengths and weakness to comment on the ways of recognizing possession or lack of quality. In the third day, through interactive and moderated discussion, the writing part of the assignment would be similarly distributed for students to evaluate.

SEC-A (2): Gender Sensitization

Unit 1: What is Gender?: Gender is defined as the roles, behaviours, activities, attributes and opportunities that any society considers appropriate for men and women. This topic gives a conceptual understanding of Gender from diverse outlook investigating on Gender, Sex and Sexuality, Masculinity and Feminity, Private and Public Dichotomy and Gender Stereotypes.

Unit 2: Gender Construction: Gender construction refers to the process of creating gender differences that continuously exists in a society. This process leads to creating and changing a society's vision of what it means to be a man or a woman. This segment studies the construction of gender on the issues beyond the gender binary and also through the ideas and Discrimination on LGBT.

Unit 3: Gender Practices and Policies: Gender practice denotes the routines, actions and thoughts that emerge with liminal awareness and centralised to the reproduction of structural and cultural arrangements while the prime aim of Gender policies is the creation of a clear vision and commitments to lead the process of gender mainstreaming and women empowerment that would escalate the achievement of gender equality, gender justice etc. This lesson introduces to some of the major Gender Practices highlighting on Gender Inequality reflected through Female Infanticide and Child Marriage etc. and to some essential Gender policies centering on the Overview and Awareness of POCSO Act, Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 etc.

SEC-B (1): Statistical Reasoning for Sociology

Unit 1: Use of Statistics in Social Research: Statistics is a form of mathematical analysis that uses quantified models, representations and synopses for a given set of experimental data or real-life studies. It studies methodologies to gather, review, analyze and draw conclusions from data. The subject matter gives a brief understanding of Descriptive and Inferential Statistics.

Unit 2: Basic Concepts: This section introduces to some important concepts like Statistics, population, Parameter, Sample and variable.

Unit 3: Sampling: Sampling is a process used in statistical analysis in which a predetermined number of observations are taken from a larger population. The subdivision here analyses on the types and applications of sampling.

Unit 4: Frequency Distribution and Graphical Techniques: In statistics, Frequency Distribution is a list, table or graph that displays the frequency of various outcomes in a sample. Each entry in the table contains the frequency or count of the occurrences of values within a particular group or interval while Graphical Techniques include ways of analyzing, clarifying

and interpreting numerical data collected through the use of charts and graphs. This unit makes the students to gain an in-depth knowledge about Frequency Distribution and Graphic Techniques.

Unit 5: Coding and Tabulation: Coding is the task of taking data and assigning it into categories. This allows us to turn normally qualitative data into quantitative or numerical data while Tabulation is a way of processing data by putting it in a table or chart with rows and columns. This segment gives an idea about Coding and Tabulation.

Unit 6: Central Tendency: In statistics, a Central Tendency is a central or typical value for a probability distribution. It might also be called a center or location of the distribution. The issue of Central Tendency looks on Mean, Median and Mode as subtopics of discussion.

Unit 7: Dispersion: In statistics, Dispersion is the extent to which a distribution is stretched or squeezed. In this connection, this portion draws attention towards Range, variance and Standard Deviation.

SEC-B (2): Theory and Practice of Development

Unit 1: What is development?: Development is a process that creates growth, progress, positive change or the addition of economic, social and demographical components etc. This introductory section deals with the brief understanding of the meaning of development and discusses various aspects based on the sociological context depicted by Economic sociologists, Developmental theorists etc.

Unit 2: Recent trends in Development and Post development: It stresses on the Developmental and Post development trends in the current scenario that covers Social development indicators, Sustainable development and debate between Growth and Development and also on Private-Public Partnership (PPP).

Unit 3: Social Services & development: This discusses on the conceptual framework of social service and the need of social service for socialization and development. It moves further on participatory development giving attention to Gender and Development (GAD), initiatives taken at the grassroots level and by the civil society and later on SHG and NGO. Corporate Social Responsibility (CSR) is also discussed.

Unit 4: Human Development: Growth vs. Development: Human Development is the science that looks towards understanding how and why the people of all ages and circumstances change or remain unchanged over time. It involves studying the human condition with capability approach as being its core. This draws focus on Development of dignity, Decentralisation of development with a key analysis on Panchayat and Municipality and also on MGNREGA and Digital India.

DSE-A (1): Urban Sociology

Unit 1: Introducing Urban Sociology: Urban Sociology is the sociological study of life and human interaction in metropolitan areas. It is a normative discipline of sociology seeking to study structures, environmental processes, changes and problems of an urban area and by doing so provide inputs for urban planning and policy making. This introductory unit revolves on the aspect of Emergence, Development and Importance of Urban Sociology, An Overview on Rural-Urban Continuum, Urban, Urbanism and Urbanity and lastly on Urbanization processes and patterns.

Unit 2: Perspectives in Urban Sociology: Urbanization is observed through the sociological perspectives of functionalism and conflict theory. Through these sociological approaches this unit focuses on Urban Sociology from the viewpoint of Ecological, Political Economy, Network and City as Culture.

Unit 3: Movements and Settlements with reference to India: Urban movements are social movements through which citizens attempt to achieve some control over their urban environment while urban settlements are urban or built-up areas with a high population density and infrastructure of build environment. Here Movements and Settlements with reference to India point towards the Meaning, Types and Factors of Migration, City and its types as types of Urban Settlements and on the Settlement Trends and its implications with respect to Smart Cities.

Unit 4: Urban Space: Problems with reference to India: Urban space refers to several urban areas and their related multicentric municipalities forming a whole in a single stretch. This issue highlights on Housing and Slum, Poverty, Crime and juvenile delinquency and Beggary.

DSE-A (2): Sociology of Work and Industry

Unit 1: Interlinking Work and Industry: Work could be defined as a task wherein you get paid monetarily. It deals with something, which you are involved in the intellectual, physical and emotional sphere whereas Industry is a group of productive enterprises or organizations that produce or supply goods, services or sources of income. Industries are classified as primary, secondary, tertiary and quaternary while secondary industries are further classified as heavy and light. This topic introduces to the concept of work and Occupation and also Work in industrial society within the sociological arena.

Unit 2: Forms of Industrial Culture and Organisation: Industrial culture creates a cultural setting which fosters the development of new products and the redevelopment of traditional products as well as innovation in production and organisational processes. On the other, organisation is an entity such as a company, institution or an association comprising one or more people and having a particular purpose. The subtopics that are discussed here is on Industrialism, Post-industrial Society and Information Society.

Unit 3: Dimensions of Work: This section looks upon the Causes and Consequences of Alienation, issues on Gender like Women and Industry and also on Gender Discrimination in Work and finally on the Nature of Unpaid Work and Forced Labour as understanding the dimensions of work.

Unit 4: Work in the Informal Sector: This unit revolves on the Definition of Informal Sector and Informal Sector in Developing countries. It also deals with Women's Work in the Informal Sector.

Unit 5: Risk, Hazard and Disaster: This chapter gives a brief analysis on the Nature and Types of Industrial Risk and its Hazards and Disasters and on the Dimensions and Trends of Vulnerability and Exposure.

DSE-A (3): Environmental Sociology

Unit 1: Envisioning Environmental Sociology: Environmental Sociology is the study of interactions between societies and their natural environment. This unit investigates on the Origin and New Directions, Realist-Constructionist Debate and on Major issues of Development, Displacement and Rehabilitation within the domain of Environmental Sociology.

Unit 2: Approaches: The Approaches related with Environmental Sociology deals with the New Environmental Paradigm of Human Ecology, Treadmill of Production, Ecological Modernization, Ecofeminism, Political Ecology and Ecological Marxism and Convergence of Different Approaches specifying on Sustainable Development.

Unit 3: Environmental Movements in India: Environmental movement is an international movement represented by a range of organisations from enterprises to grassroots and varies from country to country. Due to its large membership, varying and strong beliefs and occasionally speculative nature, the environmental movement is not always united in its goals. The Environmental Movements in India that are dealt with under this part are on the Chipko, Narmada and Silent Valley Movement.

Unit 4: Global Issues: This segment focuses on the Major issues of Global Environmental Politics and Climate Change.

DSE-A (4): Agrarian Sociology

Unit 1: Agrarian Societies and Agrarian Studies in India: Agrarian society or agricultural society is any community whose economy is based on producing and maintaining crops and farmland while Agrarian studies are based on studies in involved in Agrarian sociology initiated by different sociologists. This aspect deals with the Features and Types of Village Community, Rural Social Structure and an Overview on Village Studies in Indian society.

Unit 2: Key issues in Agrarian Sociology in India: This chapter throws light on the key issues in Agrarian Sociology in India emphasising on Land Reforms and Tenancy Reforms, conditions and problems of the agricultural labourers based on rural poverty in India, Agrarian unrest and farmers movements.

Unit 3: Themes in Agrarian Sociology of India: This area draws on the Themes in Agrarian Sociology of India that covers Labour and agrarian class structure, Caste, Gender and Agrarian realities and later on Green revolution and its impact on agriculture.

Unit 4: Agrarian Futures of India: This topic is centered on Nature and Dimensions of Rural society in transition, Corporate Initiatives in Agriculture and Its Implications as Agents of change, an Overview on Rural development in India and Agrarian crisis to elucidate the Agrarian futures of India.

DSE-B (1): Indian Sociological Traditions

Unit 1: G.S.Ghurye:G.S.Ghurye can be considered as the founder of institutionalized sociology in India who introduced a down-to-earth empiricism in Indian Sociology and social anthropology. The major aim here is to create a deepening knowledge about Ghurye's analysis on Caste and Race and on City and Civilization in the Indian sociological context.

Unit 2: Radhakamal Mukherjee: Radhakamal Mukherjee was a leading thinker and social scientist of modern India who was a highly original philosopher of history and a discerning interpreter of culture and civilization. The present chapter looks uponRadhamal Mukherjee's ideas on personality, society, values and on the concept of Social Ecology in the Indian society.

Unit 3: D.P.Mukerji: D.P.Mukherji was a 'Marxologist' who came to sociology as a social philosopher and ended up more as an advocate of empiricism involving spiritual feelings. His insights on Tradition and Modernity and on Middle Class within the Indian framework are the ultimate aim of this topic.

Unit 4: Verrier Elwin: Verrier Elwin was a British born anthropologist, ethnologist and tribal activist who was known for the study of tribes of India. This chapter gives a detailed analysis on Elwin's perspectives on Tribes in India.

Unit 5: M.N.Srinivas: M.N. Srinivas was an Indian sociologist and social anthropologist who is mostly known for his work on caste and caste systems, Social stratification, Sanskritisation and Westernisation in southern India and the concept of 'Dominant Caste'. This part specifies on Srinivas's views on Social Change in India.

Unit 6: IrawatiKarve: IrawatiKarve was an Indian sociologist, anthropologist and educationist. Ghurye's influence is apparent in much of Karve's work. They shared common belief in the importance of family, kinship, caste and religion as the basis of Indian society and also a broad

equation of Indian society with Hindu society.The subject matter of this topic is on IrawatiKarve's analysis on Gender and Kinship.

Unit 7: LeelaDube: LeelaDube was a renowned anthropologist and feminist scholar known for her work on kinship and wrote several books in women studies. The focal point of this area is on LeelaDube's explanations on Caste and Gender.

DSE-B (2): Sociology of Visual Culture and Media

Unit 1: Introduction: Visual culture is the aspect of culture expressed in visual images. This field of study often overlaps with film studies, psychoanalytic theory, sex studies etc. This section enables students to know about the sociology of visual cultures. Apart from this, it also covers on the vision of modernity and media practices in a diversified manner.

Unit 2: Visual Environments and Representations: Visual Environment has increasingly been used as a lens with which to understand wider processes of social and economic change, with studies employing in-depth qualitative approaches to focus on while sociological studies of visual representation demonstrate a way in which images, records are visually depicted or illustrated. This unit gives a clear picture about the power and gaze of the state, Visual Practices and Identity formation and also on Visual Cultures of Everyday Life within the field of sociology.

Unit 3: Sociology of Media: Sociology of Media or Media Sociology are generally concerned with mass media and more recently new media that include mobile, internet etc. is understood. This section is concerned about the theories and representation of media and the impact of globalization on media. It explains further about the role of internet and impact of Media on Human Behaviour.

DSE-B (3): Sociology of Health and Medicine

Unit 1: Introduction to the Sociology of Health and Medicine: The sociology of Health and Medicine examines the interaction between society and health. The sociology of medicine limits its concern to the patient-practitioner relationship and the role of health professionals in society. Here, the discussion is centered on the Origin and development of Health and Medicine, Conceptualizing Health, Disease and Illness, Social and Cultural dimensions of illness and medicine and studying medicine as an institution and understanding medical ethics.

Unit 2: Theoretical Orientation in Health and Illness: Theories about health and illness deal with the ideas people use to explain how to maintain a healthy state and why they become ill. This part gives a clear picture on the social, cultural and feminist approaches of Health and Illness and also explains on discourse and power of Health and Illness.

Unit 3: Negotiating Health and Illness: Negotiation, like the delivery of healthcare, is at its core about understanding and engaging with people more effectively. Health care professionals and administrators who develop the skills of effective negotiation will find that they are better equipped to heal, collaborate and innovate. This specifies on the Health Care system and Health as an Industry to have a precise knowledge about the Medical practices, the prevention and awareness of health problems in the sphere of Public Health and also have a deepening knowledge on the Health policy in India.

DSE-B (4): Project: Fieldwork and Dissertation

Students are instructed to prepare a dissertation with a prescribed word limit of 5000 words based on the fieldwork conducted by them. The Internal and External examiner appointed by the university jointly examines and award the students on the basis of their dissertation, field work and viva-voce.

Sociology General Programme (SOCG)

CC/GE-1: Introduction to Sociology

Unit 1: Sociology: Discipline and Perspective: Sociology is a discipline that makes it possible to see how individual experiences which mean how we act, think, feel and remember are connected to the wider society and the sociological perspective invites people to look at their familiar surroundings in a completely new manner. This unit aims to look upon the Nature and Scope of Sociology, Understanding Sociology as a Science and its relation with Common Sense.

Unit 2: Sociology and Other Social Sciences: The social sciences are subjects concerned with how humans interact with the world and sociology is interested in the study of society. Within the social sciences are such disciplines as economics, psychology, anthropology etc. Each is concerned with a piece of global human concerns. The subject matter emphasizes on the relation of some specific social sciences involving Social Anthropology, Psychology and History with Sociology.

Unit 3: Basic Concepts: This issue provides a detailed understanding of some basic concepts like Individual and Group, Associations and Institutions, Culture and Society and lastly on Social Change.

CC/GE-2: Sociology of India

Unit 1: India as a Plural Society: Indian society is a pluralistic society with a complex social order characterised by a multitude of ethnic, linguistic, religious and caste divisions. This chapter on India as a Plural Society is explains the basis of Unity and Diversity and Problem of National Unity.

Unit 2: Social Institutions and Practices: Social institutions are mechanisms or patterns of social order focused on meeting social needs, such as government, economy, education etc. This unit includes Caste, Tribe, Class, Village and Family and Kinship to have an insight on Social Institutions and their Practices in India.

Unit 3: Identities and Change: The chapter tries to understand about Dalit's Movement and Women's Movement.

Unit 4: Challenges to State and Society: State is a politically organised unity of the people while society is a natural unity of people bound together in social relationships. Communalism and Secularism has been explained here to gather an understanding about Challenges to State and Society.

CC/GE-3: Sociological Theories

Unit 1: Emergence of Sociology as a new discipline: A brief account: Sociology is a branch of social science that deals with the study of society, patterns on social relationships, social interaction and culture that surround everyday life. that This section deals with the emergence of sociology as a new discipline in the west drawing on the initial ideas produced by different political theorists, philosophers that further lead to the rise of different conceptual strands analysed by eminent sociologists.

Unit 2: Karl Marx: Karl Marx was a German philosopher, economist and sociologist who became a social revolutionary later on. Marx's critical theories hold that human societies develop through class conflict. The prime focus of this part reveals on Karl Marx's discussions on the Materialistic conception of History and theorization of Class and Class Struggle.

Unit 3: Emile Durkheim: Emile Durkheim was a French sociologist. His work was mostly concerned with how societies could maintain their integrity and coherence in an era of modernity in which traditional social and religious ties are no longer assumed and in which new social institutions have come into being. The main aim of this segment is on Emile Durkheim's conceptions on Social Fact and the Forms of Solidarity.

Unit 4: Max Weber: Max Weber was a German sociologist and philosopher who did not believed in monocausal explanations. Instead he proposed that for any outcome there can be multiple causes. This unit gives significant attention to Max Weber's Ideal Types and Social Action and on the typology of Authority.

CC/GE-4: Methods of Sociological Enquiry

Unit 1: The Logic of Social Research: Social research is a research conducted by social scientists that follows a systematic plan. The methodologies of social research can be classified as quantitative and qualitative. This chapter addresses the logic of social research highlighting on the notion, aims and types of social research and also helps to understand the

theory and research relationships. In addition, it also gives significant attention to the basic definitions of concepts, Conceptualization, Operationalization and Hypothesis and throws a keen observation on Objectivity and Reflexivity of Social Research.

Unit 2: Methodological Perspective: A methodological perspective may refer to the way in which a researcher intends to carry out his or her research from the specified or known methods in a discipline. The key perspectives of research methods that are being discussed here are Positivist, Interpretative, Humanist and Feminist Method.

Unit 3: Modes of Enquiry: Modes of Enquiry are the configurations of strategies for 'looking for answers' that comes under "methodology" and 'establishing their credibility' that comes under "justification". Some modes of enquiry for research that is being looked upon in this topic are the Steps of Research, Primary and Secondary data, Survey and Observation method as data collection methods, Questionnaire and Interview as Tools and techniques of data collection and analysing on Quantitative and Qualitative data.

SEC-A (1): Techniques of Social Research

Unit 1: Research Design: Research design is a coherent strategy that students choose to integrate the different components of their study and accordingly they formulate specific questions.

Unit 2: Data Collection: It is a process of gathering data from various sources for field research of the students.

Unit 3: Data Analysis: It is a process of inspecting, transforming and modelling their collected data.

Unit 4: Project Report Writing: A research project is a scientific endeavour to answer a research question. In this aspect this unit emphasizes on the steps involved in writing a research proposal as a brief summary of the entire research that is to be conducted.

SEC-A (2): Gender Sensitization

Unit 1: What is Gender?: Gender is defined as the roles, behaviours, activities, attributes and opportunities that any society considers appropriate for men and women. This topic gives a conceptual understanding of Gender from diverse outlook investigating on Gender, Sex and Sexuality, Masculinity and Feminity, Private and Public Dichotomy and Gender Stereotypes.

Unit 2: Gender Construction: Gender construction refers to the process of creating gender differences that continuously exists in a society. This process leads to creating and changing a society's vision of what it means to be a man or a woman. This segment studies the construction

of gender on the issues beyond the gender binary and also through the ideas and Discrimination on LGBT.

Unit 3: Gender Practices and Policies: Gender practice denotes the routines, actions and thoughts that emerge with liminal awareness and centralised to the reproduction of structural and cultural arrangements while the prime aim of Gender policies is the creation of a clear vision and commitments to lead the process of gender mainstreaming and women empowerment that would escalate the achievement of gender equality, gender justice etc. This lesson introduces to some of the major Gender Practices highlighting on Gender Inequality reflected through Female Infanticide and Child Marriage etc. and to some essential Gender policies centering on the Overview and Awareness of Pocso Act, Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 etc.

SEC-B (1): Theory and Practice of Development

Unit 1: What is development?: Development is a process that creates growth, progress, positive change or the addition of economic, social and demographical components etc.Thisintroductory section deals with the brief understanding of the meaning of development and discusses various aspects based on the sociological context depicted by Economic sociologists, Developmental theorists etc.

Unit 2: Recent trends in Development and Post development: It stresses on the Developmental and Post development trends in the current scenario that covers Social development indicators, Sustainable development and debate between Growth and Development and also on Private-Public Partnership or PPP.

Unit 3: Social Services & development: This discusses on the conceptual framework of social service and the need of social service for socialization and development. It moves further on participatory development giving attention to Gender and Development (GAD), initiatives taken at the grassroots level and by the civil society and later on SHG and NGO. Corporate Social Responsibility (CSR) is also discussed.

Unit 4: Human Development: Growth vs. Development: Human Development is the science that looks towards understanding how and why the people of all ages and circumstances change or remain unchanged over time. It involves studying the human condition with capability approach as being its core. This draws focus on Development of dignity, Decentralisation of development with a key analysis on Panchayat and Municipality and also on MGNREGA and Digital India.

SEC-B (2): Application of Statistics for Sociology

Unit 1: Basic Concepts: This section introduces to some important concepts like Statistics, population, Parameter, Sample and variable.

Unit 2: Definition of Social Statistics and Use of Statistics in Social Research: Social Statistics is the use of statistics to study human behaviour and social environments. The subject matter gives a brief understanding of the definition of Social Statistics and the Use of Statistics in Social Research.

Unit 3: Frequency Distribution: In statistics, Frequency Distribution is a list, table or graph that displays the frequency of various outcomes in a sample. Each entry in the table contains the frequency or count of the occurrences of values within a particular group or interval. This unit makes the students to gain an in-depth knowledge about Frequency Distribution.

Unit 4: Graphical presentation of Data: Graphical presentation refers to the visual display, analyse, clarify and interpretation of numerical data through the use of charts and graphs. This lesson familiarizes students the Graphical presentation of Data.

Unit 5: Sampling: Sampling is a process used in statistical analysis in which a predetermined number of observations are taken from a larger population. The subdivision here analyses on the types and uses of sampling.

Unit 6: Coding and Tabulation: Coding is the task of taking data and assigning it into categories. This allows us to turn normally qualitative data into quantitative or numerical data while Tabulation is a way of processing data by putting it in a table or chart with rows and columns. This segment gives an idea about Coding and Tabulation.

Unit 7: Central Tendency: In statistics, a Central Tendency is a central or typical value for a probability distribution. It might also be called a center or location of the distribution. The issue of Central Tendency looks on Mean, Median and Mode as subtopics of discussion.

DSE-A (1): Religion and Society

Unit 1: Understanding Religion: Religion is an organized collection of beliefs, cultural systems, and world views that relate humanity to an order of existence. This chapter specifies the basic sociological understanding of religion and the approaches given by Emile Durkheim and Max Weber towards structuring the framework of the sociology of religion.

Unit 2: Religion in India: Religion in India is characterised by a diversity of religious beliefs and practices. The preamble of Indian constitution states that India is a secular state. The subject matter in this segment aims to draw on the significance of specific religion within the domain of Indian society that involves Hinduism, Islam, Christianity, Sikhism and Buddhism.

Unit 3: Secularism & Communalism: Meaning, Characteristics and Factors: This segment is concerned on the Meaning, Characteristics and Factors of Secularism and Communalism.

DSE-A (2): Family, Marriage & Kinship

Unit 1: Introduction to Family, Marriage and Kinship: Family is an intimate domestic group made up of people related to one another by bonds of blood, sexual mating or legal ties. Marriage is a formal union and social and legal contract between two individuals that unites their lives legally, economically and emotionally while Kinship is the recognition of relationships between persons based on descent or marriage. This introduces to Different forms of family and marriage and also on Biological, social and cultural kinship.

Unit 2: Family & Household: The aspect of Family and Household revolves around Structure & Change, Alternative & Emergent forms of family, Divorce and Separation, Unconventional family relationships etc.

Unit 3: Marriage & Kinship: This section focuses on Marriage, Alliance, Descent and Prestations.

Unit 4: Contemporary issues in Family, Marriage & Kinship: This part includes Cultural Codes in choice and regulation of marriage, Power and discrimination in the family, Gender gap and also reflecting on New Reproductive Techniques to gain an insight about the Contemporary issues in Family, Marriage and Kinship.

Group-B

DSE-B (1): Social Stratification

Unit 1: Concepts and Approaches: This section familiarizes students on the meaning and forms of social Stratification.Social stratification can be examined from different sociological perspectives that consist of functionalism, conflict theory and symbolic interactionism.

Unit 2: Forms of Social Stratification: On the basis of identities and Inequalities social stratification can be understood. In this sense, the present section reveals upon significant aspects of Caste, Race and Ethnicity and also on Feminism and Gendered Stratification to substantiate this issue.

Unit 3: Social Mobility: Within the context of social stratification this subject matter throws light on the meaning, forms and nature of Mobility and its institutionalised practices.

DSE-B (2): Gender and Sexuality

Unit 1: Gendering Sociology: Gender is defined as the roles, behaviours, activities, attributes and opportunities that any society considers appropriate for men and women. This topic introduces students to have an overview of sociology of gender as a prominent subfield of sociology.

Unit 2: Gender as a social construct: The social construction of gender is a theory in feminism and sociology about the manifestations of cultural origins, mechanisms and corollaries of gender perception and expression in the context of interpersonal and group social interaction. This subject deals with several ways of understanding social construction of gender from a sociological viewpoint pointing specifically on Gender, Sex and Sexuality, Gender stereotyping and socialization, Gender role and identity, Gender stratification and inequality, Gender discrimination and patriarchy and Production of Masculinity and Feminity.

Unit 3: Gender: Differences and Inequalities: Gender differences are defined as biological differences between sexes which means how perceived differences may be culturally reinforced gendered behaviour that occur within supervision as opposed to actual biological differences among sexes while Gender inequality is the idea that men and women are not equal and that gender affects an individual's living experience. The central focus of this issue is to learn about gender differences and inequalities based on class, caste, family, work, third gender and sexual violence.

Unit 4: Gender, Power and Resistance: The set of roles and behaviours that societies define as appropriate for men and women can be the cause and consequence of power relations from the sphere of the household to the highest levels of political decision making and Resistance from a gender outlook can be used to promote change. The subject matter highlights on Power and Subordination and also reflects on Resistance and movements with a specific emphasis on Chipko movement and Gulabi

Department of Zoology

Program Outcome:

PO 1. Apply the knowledge of various branches of Zoology and General biology meant both for a graduate terminal course and for higher studies.To impart quality life science education to women students and to develop young women as outstanding scholars/ teachers/ career women/ entrepreneurs and responsible citizens.

PO 2. Develop positive attitude towards sustainable development.

PO 3. Understand the unity of life with the rich diversity of organisms and their ecological and Evolutionary significance

PO 4. Acquire basic skills in the observation and study of nature, biological techniques, experimental skills and scientific investigation

PO5.Acquisition of knowledge of applied zoology that can be utilized for developing own business i.e. entrepreneurship skill.

4. **Program Specific Outcome**:

PSO1.Gain the knowledge of Zoology through theory andpracticals. Identify and list out common animalsand analyse the relationships among animals with their ecosystemsLearn to classify the major groups of organisms under different phyla, understanding the functioning of organisms, compare and contrast anatomical and physiological characteristics of animals

PSO2. Explain various physical and physiological processes in our bodies

PSO3. Analyze the impact of environment on our bodies

PSO4. Understand various genetic abnormalities

PSO5. Understand good laboratory practices as per laboratory standards, handling the sophisticated instruments/equipment to develop technical skills, research oriented skills about research methodologies, effective communication and skills of problem solving methods

PSO6. Explain the role and impact of different environment conservation programs

PSO7. Identify animals beneficial to humans

PSO8. Identify various potential risk factors to health of humans

PSO9. Explain the importance of genetic engineering

PSO10. Use tools of information technology for all activities related to zoologyUnderstand the applications of zoological knowledge in Agriculture, Medical and daily life

PSO11. Knowledge on Economic Zoology for employment- Indian Forest Service, Sericulture, Fisheries, Veterinary, Clinical Laboratory, Museum Curator, departments and Entrepreneurship. They can go for Indian Forest Service and other competitive examinations.

Course Outcome:

Core papers	
Course code	Course outcome
ZOOA-CC1-1-TH Non- Chordates I (Protista to Pseudocoelomate) Theory **UNIT-1,2,3,4,5,6,7**	• Describe the distinguishing characteristics of the major taxa Explain the basic aspects of classification details of invertebrates Understand biodiversity, habitat, adaptation organization and taxonomic status of invertebrates. • Interpret the affinities, evolutionary relationships and adaptation of the major parasitic helminthes and to explain their medical importance in terms of disease
ZOOA-CC1-1-P Non-Chordates I Lab	• To understand the systematics, morphology, functional, and structuralmodification in various groups of invertebrates & chordates.
ZOOA-CC1-2-TH Molecular Biology Theory	• Rigorous foundation in the principles of molecular and cellular biology give insights into the mechanisms involved in the synthesis and function of macromolecules such as DNA, RNA, and proteins • Studying molecular cell biology trains the students to think logically, critically and quantitatively
ZOOA-CC1-2-P Molecular Biology Lab	• Understand the role of genetics as the underlying cause of various disorders of the human body. • Knowledge of research principles and methods applicable in the discipline of genetic counselling and genetic testing approach taken for specific genetic disorders. • Principles of the legal and professional duties and the responsibilities of genetic counsellors as health professionals • Role of the genetic counsellor in the context of the multidisciplinary approach to clinical genetic health care. • Integrate knowledge of genetics and genomics, including dysmorphology, inherited and multifactorial disorders, cancer genetics,genetic and genomic testing, and screening including prenatal diagnosis for the purposes of genetic and genomic counseling.
ZOOA-CC2-3-TH Non-Chordate II (Coelomate Phyla)	• To compare and understand the general and specific characteristics within each Phyla • Develop some of the general principles of zoology as they are encountered in the survey of the animal kingdom.

Theory	• Develop a general familiarity with all major groups of animals, including specific information about selected representatives of each group • Learning Zoology will lead to discuss the diversity of invertebrate animal life and the fascinating adaptations that enable animals to inhabit nearly all conceivable ecological niches
ZOOA-CC2-3-P Non-Chordate II Lab	• Idea about internal features of invertebrates and to compare and contrast • Understanding theinternal anatomyand disposition of organs
ZOOA-CC2-4-TH Cell Biology Theory	• To impart knowledge about the prokaryotic and eukaryotic cell, its complex organization, biosynthesis of cellular membranes and organelles and the unified role it plays for the ultimate sustainability of the organisms
ZOOA-CC2-4-P Cell Biology Lab	• Apply a basic core of scientific and quantitative knowledge to enhance understanding of cell structure and function at the molecular level. • Develop and maintain a notebook of laboratory records. • Utilize laboratory skills of nucleic acid isolation. • Practical understanding of cell division and corresponding chromosomal morphology
ZOOA-CC3-5-TH Chordata Theory	• Identify the general and specific characteristics of the different classes and the organization of the representative types. • Recognize and describe the major groups of chordates • Understand the diversity of Chordates and its outline systematic. Discuss their affinities and adaptations to different modes of life. • Understand the unique features, taxonomy and functional morphology of different classes of chordates • To infer the affinities, evolutionary relationships and adaptation of the major taxa and to explain their economic importance with respect to Chordates.
ZOOA-CC3-5-P Chordata Lab	• understanding the general characters of many chordates. • understanding the level of internal organization of fish • understanding structure of scales of fish • seminar presentation and project submission process on animal behaviour
ZOOA-CC3-6-TH Animal Physiology: Controlling & Co-ordinating system Theory	• To understand the structure and physiology of the types included with special emphasis on the adaptations to their modes of life and environment. • Understanding the process of human neural transmission, muscle structure and function • Gaining of fundamental rather elaborate knowledge of mammalian endocrine system and various physiological processes of human body
ZOOA-CC3-6-P Animal Physiology: Controlling & Co-ordinating system Lab	• Understanding the histological structure of mammalian glands under microscope and sample preparation for microscopic studies • Learning of practical technique to investigate the effect of any physical or chemical entities on muscle contraction

ZOOA-CC3-7-TH Fundamental of Biochemistry Theory	• Detail understanding about the biochemical organization of biomolecules like carbohydrate, protein, fat • Detail knowledge of metabolic activities in the body
ZOOA-CC3-7-P Fundamental of Biochemistry Lab	• Qualitative and quantitative assay ofof macromolecules, specially protein very much helpful for future wetlab work
ZOOA-CC4-8-TH Comparative Anatomy of Vertebrate Theory	• Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth. They will be able to use specific examples to explicate how descent with modification has shaped animal morphology**,** physiology, life history, and behavior**.** • Learn that the cells are the basic units of life, which contribute to form tissue, organs, and organ systems and their functions, diversity and evolutionary relationships among animals
ZOOA-CC4-8-P Comparative Anatomy of Vertebrate Lab	• To understand the systematics, morphology, functional, and structural modification in various groups of invertebrates & chordates
ZOOA-CC4-9-TH Animal Physiology: Life Sustaining System Theory	• To understand the basic organization of organisms and subsequent development to an organ system. • To analyze the physiological processes that regulates body functions and the regulation of an organ system from the molecular all the way to the whole animal level. • Recognize the complimentary relationship of structure and function and describe the interactions between different organ systems to maintain homeostasis • Able to explain the role of the endocrine glands in maintaining homeostatic mechanisms utilized by each body system in response to internal and external environmental changes. • To apply knowledge of a physiological mechanism for further understanding of the cellulaand molecular mechanisms of • action in health and disease. • To understand the structure and physiology of the types included with special emphasis on the adaptations to their modes of life and environment
ZOOA-CC4-9-P Animal Physiology: Life Sustaining System Lab	• Quiet a good knowledge of pathological or clinical investigation of many human blood parameters • Details morpholollical investigations of blood cells under microscope
ZOOA-CC4-10-TH Immunology Theory	• The mechanisms and differences between primary and secondary responses and their relevance to immunizations • Identify the role of antigen presenting cells, lymphocytes, and phagocytic cells in immune responses

	• Role of immunology in protection against disease and autoimmune disorders • Advanced knowledge about hypersensitivity and vaccine.
ZOOA-CC4-10-P Immunology Lab	• Comprehensive and practical understanding of basic immunological principles and techniques involved in research/clinical/applied science
ZOOA-CC5-11-TH Ecology Theory	• Describe the distinguishing characteristics of the major taxa • Explain the basic aspects of classification details of ecology • Understand biodiversity, habitat, adaptation organization and flora &fauna of soil & water. effect of light and temperature on living things • Understand the systemic and functional morphology of various concepts of ecology and embryology Explain the basic aspects of structural and functional details of environments • To compare and understand the general and specific characteristics within and other environments in relation to abiotic & biotic factors.
ZOOA-CC5-11-P Ecology Lab	• Experiential learning of chemical analysis of water • Understanding faunal diversity and density analysis both in micro as well as macro level
ZOOA-CC5-12-TH Principle of Genetics Theory	• Understand the core principles of genetics, the historical background, genetic crosses, basic laws governing the pattern of qualitative characters, linkageand crossing over. • Understanding the applications of genetics for the welfare of health and treatment of disease, and the impact of selective advantage and natural selection on human genetic disorders.
ZOOA-CC5-12-P Principle of Genetics Lab	• Fundamental statistical concepts and some of their basic applications in science and society • Develop a thorough grounding in fundamental analytical approaches for quantitative study of living systems and life processes. Shall know how to organize, manage, and present data. • Describe the contents and properties of the most important bioinformatics databases, perform text- and sequence-based searches
ZOOA-CC6-13-TH Developmental Biology Theory	• Complete understanding of human pre and post natal development process at molecular level • Vivid knowledge of the process of fertilization
ZOOA-CC6-13-P Developmental Biology Lab	• Understanding placental structure • Knowledge of structure of normal and abnormal embryo under microscope
ZOOA-CC6-14-TH Evolutionary Biology Theory	• To understand the evolutionary events those has occurred throughout Earth?s geological history starting with the hypotheses on the origin of life and identify the key events in human evolution. Know how to obtain current information about scientific and clinical applications of genetics,

	particularly from specialized genetics services. • Analyze the processes in population genetics and describe how they affect the genetic diversity within a species Compare and contrast the various theories on formation of new species and identify the factors that play a role in the process of evolution and understand the genetic basis of evolutionary change
ZOOA-CC6-14-P Evolutionary Biology Practical	• Knowledge of fossil studies. • Idea of construction of dendogram and cladogram very much useful in molecular taxonomical research.
Discipline Specific Electives	
ZOOA-DSE(A)-5-1-TH Parasitology Theory	• To provide students with knowledge concerning biological, epidemiological and ecological aspects of parasites causing diseases to humans. • To enable students to understand the pathogenesis, clinical presentations and complications of parasitic diseases. • To enable students to reach diagnosis and know the general outline of treatment, prevention and control of parasitic infections • To provide students with adequate knowledge about endemic parasites and national parasitic problems as well as re-emerging parasitic infection. • understanding of parasitism,including the diversity of symbiotic associations and their populational, dynamic and contextual nature. • taxonomic diversity of parasites, and the universality and variety of symbiotic associations. • familiarity with common protozoan and helminth parasites of humans aswell as some related parasites of livestock and companion animals • Analyze case studies and scenarios, interpret data and use evidence to addressproblems in parasitology, including clinical, public health and biological issues. • Analyze research challenges in diagnosis, treatment and control of parasitic infections in humans and in veterinary contexts through examination of evidence • understanding of the roles of parasites and of infectious diseases on the ecology and evolution of their hosts, and of the role of symbiosis in the evolution of life on earth.
ZOOA-DSE(A)-5-1-P Parasitology Lab	• Understand fundamental analytical principles and processes used in clinical laboratory testing for faecal matter. • Understand the concepts and safety measures of clinical laboratory instruments. • Acquired technical skills will help the students for collecting and processing biological specimens for analysis. • Application of medical laboratory procedures will enable the students to distinguish normal and abnormal microscopic pathogens. • Students enable their critical and analytical thinking in the detection of diseases.

	• Interpretation will empower students to compare and contrast clinical laboratory procedures, interpret data and predict diagnosis
ZOOA-DSE(A)-5-2-TH Biology of Insect Theory	• will have achieved an understanding of the biochemical and physiological processes governing **insect** metabolism, growth, and form. understand the evolutionary and ecological significance of **insects**. • To understand basic insect biology, as well as natural history and evolutionary relationships of insect orders and families
ZOOA-DSE(A)-5-2-P Biology of Insect Lab	• Enrichment in the knowledge of entomology by observing insect morphology, phylogeny, physiology, life cycle, developmental stages. • Concept of harmful and beneficial insects • Understanding the Control of insects in controlling diseases • Understanding the approach of use of beneficial insects for human welfare.
ZOOA-DSE(B)-5-1-TH Endocrinology Theory	• Understanding of critical hormone action and interaction in the body. • Knowledge of the hypo/hypersecretion of different types of hormones
ZOOA-DSE(B)-5-1-P Endocrinology Lab	• Understanding of the structures of endocrine gland and the process of microtomy related to many pathological job
ZOOA-DSE(B)-5-2-TH Reproductive Biology Theory	• Detail knowledge about the anatomical,physiological and molecular aspect of human reproduction • Concept of infertility and assisted reproductive technology, very much related primarily to research, development and job opportunities in infertility clinics
ZOOA-DSE(B)-5-2-P Reproductive Biology Lab	• Idea about set up and maintenance of animal house, breeding techniques, care of normal and experimental animals very much effective for future research purpose • Understanding the reproductive structures under microscope including the identification of abnormalities
ZOOA-DSE(A)-6-1-TH Animal Cell Biotechnology Theory	·To impart comprehensive understanding of the principles and practices of biotechnology ·Understanding the principles and practices of biotechnology give insights into the DNA Technology, Technique of genetic engineering, DNA Finger printing, Methods of DNA profiling and animal tissue culture..
ZOOA-DSE(A)-6-1-P Animal Cell Biotechnology Lab	• Understanding of basic and to some extent advanced modern biotechnological lab techniques like autoclave for cell culture, Preparation of culture media, isolation,purification,quantification of nucleic acids.

	• Practical experience of understanding the techniques: Western Blot, Southern Hybridization, DNA Fingerprinting, PCR, DNA Microarrays which will be highly appreciated for future high profile molecular biology research
ZOOA-DSE(A)-6-2-TH Animal Biotechnology Theory	• Application of genetic engineering in prevention and diagnosis of diseases and discuss the different applications of biotechnology • Understanding the application of genetic engineering, DNA Finger printing, DNA profiling and animal tissue culture in Life Sciences Research trains the students to think logically. • Interpretation will empower students to think and solve problems in the field of biotechnology
ZOOA-DSE(A)-6-2-P Animal Biotechnology Lab	• Experiential learning of animal cloning & Application • Understanding of research ethics as well as animal and human ethical issues and clearance related to research
ZOOA-DSE(B)-6-1-TH Animal Behaviour & Chronobiology Theory	• Detail understanding of animal social and sexual behaviour and its correlation with evolution • Concept of biological rhythm
ZOOA-DSE(B)-6-1-P Animal Behaviour & Chronobiology Lab	• Experiential learning of animal behaviour to enrich ethological knowledge like nesting behaviour of birds, geotaxis behaviour ,phototaxis behaviour etc. • Understanding Biodiversity and preparation project report. • Understanding the circadian functions in humans and its relation to human health
ZOOA-DSE(B)-6-2-TH Fish & Fishery Theory	• To study, explore various techniques used in fishery and polyculture practices. Understanding the scientific terms, concepts, facts, phenomenon & their interrelationship of fish. • To provide an overview of the application of biotechnological tools in fish breeding, feed, health, processing and other issues in fisheries. Application of knowledge in Fisheries for nutrition, agriculture & live stock • To gain in depth knowledge and field exposure on sustainable pisciculture practices • To impart understanding of the nutritional requirements of fish and knowledge on mass culture and enrichment of live food organisms • To comprehend the taxonomy, morphology, pathology and hostparasite relation of common parasites of aquatic organisms and to understand the significance of parasites in fish health
ZOOA-DSE(B)-6-2-P Fish & Fishery Lab	• Understanding Morphometric and meristic characters of fishes • Understanding of crafts and gears used in Fisheries • water quality assessment and management for Aquaculture useful for developing own business • Practical learning in fish farm/ pisciculture unit/Zebrafish rearing Lab.

Skill Enhancement Course	
ZOOA-SEC(A)-3-1-TH Apiculture	• Understand the basic life cycle of the honeybee • Learn about beekeeping tools and equipment • Learn to manage beehives for honey • production and pollination • Learn about bee diseases and pests • Learn to harvest and market honey
ZOOA-SEC(A)-3-2-TH Sericulture	• Train the students in identifying the diseases and pests of the mulberry plant. • provides a thorough knowledge about the cultivation of mulberry, maintenance of the farm, seed technology, silkworm rearing and silk reeling. • Students get to learn about the quality of various things like leaf, seed cocoon, commercial cocoon and fibre so that they can get maximum return when actually practiced. • learn about the various skills that are necessary for self employment in the mulberry and seed production. This course gives us employment and job opportunities in the public, private and government sector.
ZOOA-SEC(A)-4-1-TH Aquarium Fishery	• Understanding the physiology,biology,pathologyetc of aquarium fishes • Understanding of business startup and management with aquarium fishes
ZOOA-SEC(A)-4-2-TH Medical Diagnosis	• Understanding of fundamental analytical principles and processes used in clinical laboratory testing for gastric juice, urine and faecal matter. • Understanding the concepts and safety measures of clinical laboratory instruments. Acquired technical skills will help the students for collecting and processing biological specimens for analysis. • Application of medical laboratory procedures will enable the students to distinguish normal and abnormal microscopic pathogens. • Students enable their critical and analytical thinking in the detection of diseases. • Interpretation will empower students to compare and contrast clinical laboratory procedures, interpret data and predict diagnosis.

.