PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES AND COURSE OUTCOMES OF ALL DEPARTMENTS

Surendranath Evening College

Program Outcomes, Program Specific Outcomes and Course Outcomes
Department of Chemistry

UNDERGRADUATE SECTION
Model Reference: University of Calcutta, Syllabus for Honours (CBCS)

The CBCS Course curriculum is well designed and very promising where the core course would help to enrich the subject knowledge of the students and generic electives make integration among various interdisciplinary courses. The introduction of Skill Enhancement Courses (SEC) and Discipline Specific Courses (DSE) would help to gain more powerful knowledge not only in their core Chemistry subject but also in interrelated multidisciplinary subjects and also helps them to become familiar and expert in handling different chemistry based software after proper training. In brief the student graduated with this type of curriculum would be able to accumulate the subject knowledge along with necessary skills to suffice their capabilities for academia, entrepreneurship and industry.

Program Outcomes:

PO 1. Students will able to understand basic concept in different field of chemistry.
PO 2. Students will able to solve chemistry related problem with logical conclusion.
PO 3. Find out the green route for chemical reaction for sustainable development.
PO 4. Students will able to get good laboratory practice with proper safety.
PO 5. Students will be able to demonstrate the experimental techniques and methods for chemical analysis, synthesis and impotant data collectiom and their interpretation.
PO 6. Create an awareness of the impact of chemistry on the environment, society, and development outside the scientific community.
PO 7. To prepare the students for a successful career in industry and to motivate them for higher education and take up research as a career.
PO 8. To develop an opportunity to work in interdisciplinary groups.

Program Specific Outcomes:

PSO 1. Apply appropriate techniques for the qualitative and quantitative analysis of chemicals in laboratories and in industries.
PSO 2. Will become familiar with the different branches of chemistry like analytical, organic, inorganic, physical, environmental, polymer, medicinal and biochemistry
PSO 3. Acquires the ability to synthesise, separate and characterize compounds using laboratory and instrumentation techniques.
PSO 4. To develop leadership and managerial skills promoting the need for lifelong learning as required for a competent professional.
PSO 5. To explain nomenclature, stereochemistry, structures, reactivity, and mechanism of the chemical reactions.
PSO 6. Identify chemical formulae and solve numerical problems.
PSO 7. Achieve the skills required to succeed in graduate school, professional school and the chemical industry like Cement industries, Agro product, Paint industries, Rubber industries, Petrochemical industries, Food processing industries, Fertilizer industries etc.
PSO 8. Understand the importance of the elements in the periodic table including their physical and chemical nature and role in the daily life.

Course Outcomes:

Semester	Course Code	Course Outcomes
SEM 1	**CC 1-1-TH Inorganic Chemistry-1 & CC 1-1-P Inorganic Chemistry: I(1) LAB**	**CO 1.** To learn about the extra nuclear structure of atom and get a basic idea about Quantum Chemistry and its Application. **CO 2.** Gives an idea about different types of acids, their definitions and also gives a clear concept about pH, buffer, and indicator. **CO 3.** To get an idea of redox reaction –Oxidation and reduction reaction ,oxidation number, competitive electron transfer reaction, electrode process. **CO 4.** To study the estimation of ions or salts by acid-base titration method and oxidation-reduction titration method.
	CC 1-1-TH Organic Chemistry-1A & CC 1-1-P Organic Chemistry: O(1A) LAB	**CO 1.** It gives the basic idea of structure, properties and reactivity of organic molecules and their relationship and an overview about Molecular Orbital Theory (MOT). **CO 2.** It informs the students about the different reaction mechanism in organic chemistry. **CO 3.** It helps to develop the hand-on skill to determine the nature of the organic compounds on the basis of solubility.
	CC 1-2-TH Physical Chemistry-1 & CC 1-2-P Physical Chemistry: P(1) LAB	**CO 1.** To get some fundamental understanding of the concept of pressure, temperature, average velocity, average energy etc. of gas molecules and able to derive the expressions of those properties using Kinetic Theory of gas. Students will learn the deviation of the properties of real gas from kinetic theory of gas behaviour and construct an equation of state that describes their properties. Students will also get information about the various intermolecular forces present in the system. **CO 2.** To get some ideas about various transport processes such as diffusion and viscosity and their measurements. **CO 3.** Help the students to understand the basic concepts regarding rates of various chemical reactions, measurements of the order and rate of the reactions, dependence of rate constants and hence the rate of the reaction on temperature, catalysts etc. and plausible mechanisms of the reactions. **CO 4.** The laboratory course enable students to determine the viscosity of unknown liquid with respect to water by using instrument like Viscometer, solubility of sparingly soluble salt in water and in presence of electrolyte with common ion and in presence of non electrolyte. They will also study the kinetics of various chemical reactions.
	CC 1-2-TH Organic Chemistry-1B & CC 1-2-P Organic Chemistry: O(1B) LAB	**CO 1. S**tudents will learn three-dimensional structure of organic molecule which is very much essential to visualize molecules. **CO 2.** To get an idea about the structure and nature of intermediates like carbocations, carboanions, radicals and carbenes. **CO 3.** The laboratory course helps students to develop laboratory training to use melting point and boiling apparatus.

Semester	Course Code	Course Outcomes
SEM 2	**CC 2-3-TH Organic Chemistry-2 & CC 2-3-P Organic Chemistry LAB**	**CO 1.** It provides an advanced idea on axial chirality, topicity, etc. and the conformational analysis of organic molecules. **CO 2.** Students will learn thermodynamics of organic reactions and basic concept reaction mechanism **CO 3.** T**o** get detail idea about the nucleophilic substitution reactions (SN1, SN2) along with NGP and SN^i and sterrochemical and regiochemical outcome of elimination reactions. **CO 4.** The laboratory course enable students to get basic skill of organic synthesis through the preparation methodology.
	CC 2-4-TH Inorganic Chemistry-2 & CC 2-4-P Inorganic Chemistry LAB	**CO 1. To** get an idea about Ionic bond and Covalent bond**,** laws, rules and equations for formation of chemical bonds, solubility, hybridization and dipole moment of molecules. **CO 2.** To develop a concept about MOT (Molecular orbital theory), LCAO (Linear combination of atomic orbitals), Metallic bond and Weak Chemical Forces etc. **CO 3.** To understand about the concept of radioactivity and radioactive compounds, nuclear reactions, artificial radioactivity, radio carbon dating, hazards of radiation and safety measures. **CO 4:** To know experimentally how to estimate the percentage of chlorine in bleaching powder; vitamin C; arsenic and antimony in a sample by iodimetric titrationmethod. Students can also learn how to estimate Cu in brass, Cr and Mn in steel and Fe in cement.
SEM 3	**CC 3-5-TH Physical Chemistry-2 & CC 3-5-P Physical Chemistry LAB**	**CO 1.** To get a knowledge of basic concepts of thermodynamic properties, nature of changes and the first law of thermodynamics. They can also apply this law in various systems undergoing different thermodynamic process to evaluate various thermodynamic properties such as heat, mechanical work , change in enthalpy, change in internal energy etc. of the system and also able to explain the thermochemistry of the various chemical processes. **CO 2.** Will first learn the need and the various statements of the second law of thermodynamics and new thermodynamic functions such as entropy, Gibbs free energy, Gibbs-Helmholtz etc. are also introduced to them. From these thermodynamic properties they get knowledge regarding the random behaviour of the system and most importantly the criteria of spontaneity and equilibrium. They will also learn the various important thermodynamic relations, various partial molar quantities, dependence of thermodynamics parameters on composition etc. **CO 3.** To get idea about conductance and transport number of electrolytes and their measurements, the derivation of Debye-Huckel Theory, Debye-Huckel limiting law and Ostwald dilution law, knowledge of conductometric titration and it's application. Students willgain vast knowledge on chemical equilibrium and electrochemistry. **CO 4.** The laboratory course enable students to handle instruments like digital conductometer, digital potentiometer and able to perform various conductometric and potentiometric experiments to find out the ionisation constant of weak acid, rate constants of chemical reaction, Ksp values etc.

Semester	Course Code	Course Outcomes
SEM 3	**CC 3-6-TH Inorganic Chemistry-3 & CC 3-6-P Inorganic Chemistry LAB**	**CO 1.** To study in detail about the modern periodic table, physical and chemical properties of the elements along a group or period, factors influences those properties, relativistic effects and inert pair effect. **CO 2.** To study the chemistry of s and p block elements and to get an elementary idea about occurrence, use of Noble gases, Nature of bonding of Noble gas compounds and their preparations including noble gases and their compounds in detail. **CO 3.** To learn about inorganic polymers with types ,structural aspects and their applications in detail. **CO 4.** To get a basic idea about different types of coordination complexes, theory of coordination complexes and their nature of bonding. To learn about the Werner's theory for complex formation, structural and stereoisomerism of coordination complexes. **CO 5.** To learn the complexometric and gravimetric estimation of different ions, chromatographic separation of (i) Ni (II) and Cu (II) ions, (ii) Fe (III) and Al (III) ions.
	CC 3-7-TH Organic Chemistry-3 & CC 3-7-P Organic Chemistry LAB	**CO 1.** To get detailed idea about the electrophilic addition reactions of organic molecules with stereochemistry. **CO 2.** It informs about the reparation of different aromatic compounds using the idea of substitution reaction. **CO 3.** To get detailed idea about nucleophilic addition to carbonyl carbon, 1,2- addition vs 1,4- addition by using of organometallics compounds. **CO 4.** The students learn the application of organic reaction and some tricks for qualitative and quantitative analysis of some organic compounds used in daily life.
	SEC - A	**SEC-1. Mathematics and statistics for chemists** **CO 1.** To get a basic idea of mathematical functions, differential equations, probability, vectors, matrices and determinants. **CO 2.** To learn about qualitative and quantitative aspects of analysis and helps to understand how to present a data after analysis. **SEC-2. Analytical clinical biochemistry** **CO 1.** To learn about the preparation, structures, reactions and biological importance of carbohydrates, proteins, enzymes, lipids and lipoproteins. **CO 2.** To know the biochemistry of different diseases through a diagnostic approach by blood and urine analysis. **CO 3.** To learn how to isolate proteins and how to perform the qualitative estimation of carbohydrate, proteins and lipids. **CO 4.** To study the quantitative estimation of carbohydrate, cholesterol, nucleic acids, determination of the iodine number of oil and saponification number of oil.

Semester	Course Code	Course Outcomes
SEM 4	**CC 4-8-TH Organic Chemistry-4 & CC 4-8-P Organic Chemistry LAB**	**CO 1.** It provides detailed idea about preparations and applications of nitrogenous organic compounds. **CO 2.** Students will learn Rearrangements of organic compounds in presence different reagents and learn the mechanism of rearrangement. **CO 3.** T**o** get get about synthesis strategy of the synthesis of organic compounds with the knowledge of organic reactions and mechanism. **CO 4.** Idea about analysis of different organic compounds using different spectroscopic methods. **CO 5.** The laboratory course enable students to get idea about detection of functional groups and preparation of derivatives using the knowledge of organic chemistry.
	CC 4-9-TH Physical Chemistry-3 & CC 4-9-P Physical Chemistry LAB	**CO 1.** Will learn the thermodynamic basis of various colligative properties; its derivation, various applications and its abnormal behaviour. Students will also understand the background of phase transitions and the behaviour of binary solutions. **CO 2.** To develop a concept about the fundamental quantum theories which help the students to understand wave-particle duality of matter and uncertainty relationship. Students will become familiar with the techniques to solve the translational motion of quantum mechanical system by modelling particle in box problem with the help of fundamental postulates of quantum mechanics. **CO 3.** To understand about the various types of solids, lattices, laws of crystallography, representation of crystal planes and able to solve the dilemma of classical picture of calculation of specific heat of solid. **CO 4:** To know experimentally how to handle digital polarimeter and study the kinetics of inversion of cane sugar by using it. They will also learn to draw the phase diagram of binary solvents. They will also handle digital pH meter for pH metric titration of dibasic and tribasic acid against strong base.
	CC 4-10-TH Inorganic Chemistry-4 & CC 4-10-P Inorganic Chemistry LAB	**CO 1.** To get an idea about elementary Crystal Field theory ,MO concept, Magnetism, Colour, Magnetic moment and Selection rules for electronic spectral transitions etc. **CO 2.** To get a basic idea about transition elements(3d,4d and 5d) like their electronic configuration ,oxidation states and properties etc and also get a clear idea about Lanthanoids and Actinoids**.** **CO 3.** To get idea about various types of substitution reaction and their mechanisms, Thermodyanamic and Kinetic stability related problems. **CO 4.** The laboratory course enable students to learn study experimentally how to synthesize inorganic complexes and determine the λmax values of inorganic complexes. To calculate the 10Dq value by spectrophotometric method.

Semester	Course Code	Course Outcomes
SEM 4	**SEC – B**	**SEC-3. Pharmaceuticals Chemistry** **CO 1.** To learn about the drug discovery, design and development of representative drugs of the following classes: Analgesics, Antipyretic, Anti-inflammatory, Anti-bacterial, Antifungal, Antiviral, Antibiotics, Anti-laprosy, Central Nervous System agents, HIV-AIDS related drugs. **CO 2.** To get idea about aerobic and anaerobic fermentation. **CO 3.** To learn experimentally the preparation of aspirin and its analysis. **CO 4.** To learn experimentally the preparation of magnesium bisilicate (Antacid). **SEC-4. Pesticide Chemistry** **CO 1.** To learn about the preparation, structures, properties, reactions, benefits and adverse effects of representative pesticide of the following classes: Organochlorines, Organophosphates, Carbamates, Quinones. **CO 2.** Learn to calculate acidity/ alkanility in a given sample of pesticide formulations as per BIS specifications. **CO 3.** To learn experimentally the preparation of organophosphates, phosphonates and thiophosphates.
SEM 5	**CC 5-11-TH Physical Chemistry-4 & CC 5-11-P Physical Chemistry LAB**	**CO 1.** Will learn to set up and solve the Schrödinger wave equations for vibrational motion of a system by modelling it as SHO, rotational motion of the system by modelling it as rigid rotor and the real system hydrogen atom and hydrogen like ions. This segment provides some quantum mechanical basis of chemical bonding with the help of VB theory and MO theory. **CO 2.** Will learn to set up some relations of various macroscopic properties with the properties of microscopic constituents of the system using statistical method and the concept of partition function. **CO 3.** Help students to derive numerical methods of various mathematical operations such as differentiation, integrations, the solutions of linear and nonlinear equations. **CO 4.** The laboratory course enable students to become familiar with the computer program, FORTRAN and by using this program they can evaluate numerical differentiation, numerical integrations etc.
	CC 5-12-TH Organic Chemistry-5 & CC 5-12-P Organic Chemistry LAB	**CO 1.** It provides knowledge about the detection and transformation of carbohydrates and their uses. **CO 2.** To get an idea about the preparation and different reactions of heterocyclic compounds. **CO 3.** To get general idea about pericyclic reactions, stereochemistry of cyclic organic compounds and their reactions. **CO 4.** Basic idea about preparations and applications of bio-molecules. **CO 5.** The laboratory course helps students to learn about qualitative and quantitative separations and purifications of organic compounds. Helps to do qualitative analysis of organic compounds using IR and NMR spectroscopy.

Semester	Course Code	Course Outcomes
SEM 5	**DSE**	**DSE A-1. Molecular Modelling & Drug Design** **CO 1.** It introduces to the students with the pharmaceutical aspect and importance of chemistry by molecular modelling and computer simulation.# **CO 2.** Students will learn to optimized C – C bond lengths and compare the shapes in different Organic molecules. **CO 3.** Students will learn to visualise the electron density and electrostatic potential maps of some compounds. **CO 4.** Students will learn to build and minimize organic compounds and also to determine the heat of hydration and compute the resonance energy. **DSE A-2. Applications Of Computers In Chemistry** **CO 1.** It helps students to learn about different languages (FORTRAN) and softwares which are useful in the study and development of chemistry. **CO 2.** Helps to know about statistical data analysis. **CO 3.** To learn how to prepare graphs by using spreadsheet and introduction to spreadsheet software (MS Excel). **CO 4.** To study about the Acid-Base Titration Curve, Plotting of First and Second derivative Curve for pH metric and Potentiometric titrations, Calculation and Plotting of a Precipitation Titration Curve with MS Excel, Michaelis-Menten Kinetics for Enzyme Catalysis using Linear and Non - Linear Regression. **DSE B-1. Inorganic Materials Of Industrial Importance** **CO 1. S**tudents will learn the synthetic procedure and use of different commercially important materials like silicates, fertilizers, alloys, catalysts, surface coating materials and batteries. **CO 2.** To learn about the general principles, properties, classification, industrial use, deactivation and regeneration of catalysis. **CO 3.** To learn about the preparation and explosive properties of lead azide, PETN, RDX and the basic idea of rocket propellant. **CO 4.** The practical course helps to to learn how to analyze the composition of cement, composition of percentage of metals in alloy, electroless metallic coatings on ceramic and plastic. **CO 5.** To know how to determine free acidity in ammonium sulphate fertilizer, estimation of Calcium in Calcium ammonium nitrate fertilizer and phosphoric acid in superphosphate fertilizer. **DSE B-2. Novel Inorganic Solids** **CO 1.** Introduces students with advance fields of chemistry like synthetic modification of different industrially important Inorganic solids, synthesis of nano material, polymers etc. **CO 2.** To understand how to synthesize hydro-gel by co-precipitation method and silver and gold nanoparticles. **CO 3.** Determination of ions by cation exchange method and total difference of solids in a composite material.

Semester	Course Code	Course Outcomes
SEM 6	**CC 6-13-TH Inorganic Chemistry-5 & CC 6-13-P Inorganic Chemistry LAB**	**CO 1.** Students get an idea about basic principles involved in qualitative analysis of cations and anions in various groups. **CO 2.** To study about the essential and beneficial elements of our life and various types of dioxygen management protein and their activity. **CO 3.** To learn about inorganic polymers with types ,structural aspects and their applications in detail. **CO 4.** To develop an idea about different types of organometallic compounds and their preparation and their applications as catalysis in various industrial process. **CO 5.** To study experimentally the qualitative detection of known and unknown radicals and insoluble materials in a mixture.
	CC 6-14-TH Physical Chemistry-5 & CC 6-14-P Physical Chemistry LAB	**CO 1.** To get a vast knowledge of the principles, experimental techniques and broad chemical application of Rotational, Vibrational, Electronic and Raman spectroscopy. **CO 2.** To learn about various photochemical and photophysical processes like fluorescence, phosphorescence etc., various laws of photochemistry and the concept of quantum yield. Students are also able to get knowledge regarding the detailed theoretical and mathematical treatment of reaction rate and the mechanism of unimolecular reactions. **CO 3.** To get information about the origin of various surface properties such as surface tension , adsorption etc., and molecular properties such as dipole moment and polarizability. They will also learn the various types of colloids, their stability, electro kinetic phenomena and the concept of micelle. **CO 4.** The students will learn to handle very sophisticated instrument like Spectrophotometer to perform various spectroscopy based experiments like verification of Lambert-Beer's law and measurement pH of unknown buffer solution, indicator constant of acid- base indicator, rate constants of chemical reaction. They will also able to handle instrument like Stalagmometer for the determination of surface tension of liquid and CMC of micelle.
	DSE	**DSE A-3. Green Chemistry And Chemistry Of Natural Products** **CO 1.** Students of undergraduate course are continuously being introduced and encouraged about the different possibilities in this field. It helps students to think and perform to design and develop environmentally benign methods for organic synthesis. **CO 2.** To know about the examples of green reactions and future trends in green reaction. **CO 3.** To learn how to perform green synthesis of a number of organic compounds in the laboratory.

SEM 6	**DSE**	**DSE A-4. Analytical Methods In Chemistry** **CO 1.** Helps to learn about different analytical methods (Flame Atomic Absorption and Emission Spectrometry, Thermogravimetry, pH metric, Potentiometric and Conductometric Titrations) to identify and separate the products formed during different chemical transformations**.** **CO 2.** To study the fundamental laws of spectroscopy and selection rules. **CO 3.** To learn the methods of separation of stereoisomers by spectral, chemical and chromatographic data analysis (IC, GLC, GPC, TLC and HPLC). **CO 4.** To study experimentally how to separate and identify a mixture of monosaccharides by chromatography method. **CO 5.** To learn experimentally how to separate a mixture of ions by solvent extraction technique; determination of pH of soil and estimation of Ca, Mg and phosphate ion in soil. **CO 6.** To determine the pKa values of a indicator, COD and BOD using spectrophotometry. **DSE B-3. Polymer Chemistry** **CO 1.** To learn about the history, functionality and importance of polymeric materials. **CO 2.** To study the kinetics of polymerization, crystallization and crystallinity of polymers. **CO 3.** To understand the nature and structure of polymers, determination of molecular weight of polymers, and Tg. **CO 4.** To study the preparation, structure, properties and application of different types of addition and condensation polymers. **CO 5.** To learn experimentally the synthesis of polymers. **CO-6:** To learn experimentally how to characterize and analyze a polymeric compound or material. **DSE B-4. Dissertation** **CO 1.** Here students have immense opportunities to consult different national and international research papers. Thus they can enhance their knowledge and prepare useful review work in their desired topic with the help of faculty members. **CO 2.** To know how to handle the technical devices for presenting research works.

Model Reference: University of Calcutta, Syllabus for Generic Elective Course in Chemistry (CBCS)

Semester	Course Code [CEM-G]	Course Outcomes
SEM 1	**CC1/GE1**	**CO 1.** To learn about the Kinetic Theory of Gases and Real Gases. To get an idea about the liquid state of matter, chemical kinetics. **CO 2.** To learn the basic concept of Atomic Structure, Chemical Periodicity and Acids and Bases. **CO 3.** To learn about the fundamentals of organic chemistry, stereochemistry, nucleophilic substitution and elimination reactions. **CO 4.** To learn experimentally the quantitative estimation of some compounds and ions in a solution by using iodometric titration, permanganate titration and dichromate titration.
SEM 2	**CC2/GE2**	**CO 1.** To learn about Thermodynamics, Chemical Equilibrium, Solutions, Phase Equilibria and Solids.. **CO 2.** To learn the basic concept of Aliphatic Hydrocarbons. **CO 3.** To learn about the Error Analysis and Computer applications. **CO 4.** To understand the various types of Redox Reactions and their applications **CO 5.** To learn experimentally the how to study the kinetics of some reactions, viscosity of unknown liquid, surface tension of a liquid and solubility of sparingly soluble salt.
SEM 3	**CC3/GE3**	**CO 1.** To understand Chemical Bonding and Molecular Structure and also to learn about the p-Block Elements, Transition Elements and Co-ordination Chemistry. **CO 2.** To learn the basic concept of Aromatic Hydrocarbons, Organometallic Compounds and Aryl Halides. **CO 3.** To get detailed knowledge of Electrochemistry. **CO 4.** To study experimentally the qualitative detection of known and unknown radicals in a mixture.
	SEC (A)	**SEC-1. Basic Analytical Chemistry** **CO 1.** To get a basic idea of analytical chemistry, sampling, accuracy and precision, sources of errors in analytical measurements. **CO 2.** To learn about the analysis of soil, cosmetics, water and food products. **CO 3.** To understand Chromatography and Ion-exchange phenomenon. **SEC-2. Analytical clinical biochemistry** **CO 1.** To learn about the preparation, structures, reactions and biological importance of carbohydrates, proteins, enzymes, lipids and lipoproteins. **CO 2.** To know the biochemistry of different diseases through a diagnostic approach by blood and urine analysis.

Semester	Course Code [CEM-G]	Course Outcomes
SEM 4	CC4/GE4	**CO 1.** To learn about Alcohols, Phenols, Ethers, Carbonyl Compounds, Amines, Diazonium Salts, Amino Acids and Carbohydrates. **CO 2.** To learn the basic concept of Crystal Field Theory. **CO 3.** To learn about the fundamentals of Quantum Chemistry and Spectroscopy. **CO 4.** To learn experimentally the qualitative analysis of single solid organic compound(s) and identification of a pure organic compound
	SEC (B)	**SEC-3. Pharmaceuticals Chemistry** **CO 1.** To learn about the drug discovery, design and development of representative drugs of the following classes: Analgesics, Antipyretic, Anti-inflammatory, Anti-bacterial, Antifungal, Antiviral, Antibiotics, Anti-laprosy, Central Nervous System agents, HIV-AIDS related drugs. **CO 2.** To get idea about aerobic and anaerobic fermentation. **SEC-4. Pesticide Chemistry** **CO 1.** To learn about the preparation, structures, properties, reactions, benefits and adverse effects of representative pesticide of the following classes: Organochlorines, Organophosphates, Carbamates, Quinones.
SEM 5	DSE (A)	**DSE A-1. Novel Inorganic Solids** **CO 1.** Introduces students with advance fields of chemistry like synthetic modification of different industrially important Inorganic solids, synthesis of nano material, polymers etc. **CO 2.** To understand how to synthesize hydro-gel by co-precipitation method and silver and gold nanoparticles. **CO 3.** Determination of ions by cation exchange method and total difference of solids in a composite material. **DSE A-2. Inorganic Materials Of Industrial Importance** **CO 1. S**tudents will learn the synthetic procedure and use of different commercially important materials like silicates, fertilizers, alloys, catalysts, surface coating materials and batteries. **CO 2.** To learn about the general principles, properties, classification, industrial use, deactivation and regeneration of catalysis. **CO 3.** To learn about the preparation and explosive properties of lead azide, PETN, RDX and the basic idea of rocket propellant. **CO 4.** The practical course helps to to learn how to analyze the composition of dolomite, composition of percentage of metals in alloy, electroless metallic coatings on ceramic and plastic. **CO 5.** To know how to determine free acidity in ammonium sulphate fertilizer, estimation of Calcium in Calcium ammonium nitrate fertilizer and phosphoric acid in superphosphate fertilizer.

Semester	Course Code [CEM-G]	Course Outcomes
SEM 6	DSE (B)	**DSE B-1. Green Chemistry And Chemistry Of Natural Products** **CO 1.** Students of undergraduate course are continuously being introduced and encouraged about the different possibilities in this field. It helps students to think and perform to design and develop environmentally benign methods for organic synthesis. **CO 2.** To know about the examples of green reactions and future trends in green reaction. **CO 3.** To learn how to perform green synthesis of a number of organic compounds in the laboratory. **DSE B-2. Analytical Methods In Chemistry** **CO 1.** Helps to learn about different analytical methods (Flame Atomic Absorption and Emission Spectrometry, Thermogravimetry, pH metric, Potentiometric and Conductometric Titrations) to identify and separate the products formed during different chemical transformations**.** **CO 2.** To study the fundamental laws of spectroscopy and selection rules. **CO 3.** To learn the methods of separation of stereoisomers by spectral, chemical and chromatographic data analysis (IC, GLC, GPC, TLC and HPLC). **CO 4.** To study experimentally how to separate and identify a mixture of monosaccharides by chromatography method. **CO 5.** To learn experimentally how to separate a mixture of ions by solvent extraction technique; determination of pH of soil and estimation of Ca, Mg and phosphate ion in soil. **CO 6.** To determine the pKa values of a indicator, COD and BOD using spectrophotometry.

Department: Commerce

Programme Outcome:

Accounting & Finance

Graduating with B.Com degree is structured to provide the students managerial skills in disciplines related to commerce. After completion of B.Com Course from the college students gain an in-depth knowledge on core subjects like accounting, law, statistics, finance, marketing and many others. By the end of this course students become capable to take various career decisions available for them such as M-Com, MBA, CA (Chartered Accountant), CS (Company Secretary), MCA and many of the diploma courses. They have bright future ahead with so many opportunities available to them. Greater career advancement is being awaited with proper career counselling whereby students will have ample job profiles with handsome salary offerings. They not only gain knowledge by the end the course but gain self-confidence, smartness and some basic skills to crack the interviews. Students are made aware with so many opportunities after graduation. We provide them with both theoretical as well as practical knowledge to face the real world.

Course Outcomes:

Accounting & Finance

SEMESTER-1

1. Microeconomics I & Statistics (GE 1.1 Chg):

It gives the basic idea about business economics which is concerned with the decisionmaking of a single unit of an economic system. It discusses about some of the important microeconomics elements like demand & supply analysis, production and cost analysis, perfect competition and analysis about different markets. It also provides basic idea about the use of statistical methods and techniques in the business like Measure of Central Tendency, Dispersion, Interpolation and Moments, Skewness and Kurtosis.

2. Business Laws (CC 1.1 Chg):

It provides a brief idea about the concept of legal framework like the Indian Contract Act,1872, where the basic concepts like contact, agreement, void and voidable agreements and other important terms are explained. The Sale of Goods Act, 1930, in which terms like the Contract of sale, difference between sale and agreement to sell, transfer of ownership in goods including sale by a non-owner and Unpaid seller is discussed about.The Partnership Laws, in which important terms like definition, nature and characteristics of partnership, types of Partners, rights and duties of partners and etc. are discussed. The Limited Liability Partnership Act, 2008. The Negotiable Instruments Act 1881and the Consumers Protection Act are discussed.

3. Principles of Management (CC 1.2 Chg):

Under this subject the students are made familiar with the basic principles of the management which is essential from governing all the organizations. It provided with the idea about the foundation of the management, definition, importance, different schools of thoughts and the role and implications of POSDCORB (Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting).

4. FINANCIAL ACCOUNTING –I (CC 1.1 Ch):

Under this subject student are given knowledge about basic nature of accounting, who are the users of accounting, accounting concepts and convections, accounting theory etc..

SEMESTER- 2

1. E-Commerce & Business Communication (GE 2.1 Chg):

This particular subject gives an overview to the student regarding the use of E-Commerce in today business world. It provides a brief idea about the concept e-commerce, types of e-commerce used, E- CRM and SCM, digital payment, ERP, and etc. It also discusses about the role and importance of Communication in the Business, various modes of communications used, barriers, advantages and disadvantages of different types of communication.

2. Company Law (CC2.1 Chg):

It gives the basic idea about the Company, its formation, the legal procedure required for the company's registration, about company's administration, corporate meetings and all about shares and debentures.

3. Marketing Management and Human Resource Management (CC 2.2 Chg):

The scope of this subject is to provide students about the basic concepts of marketing, role of marketing management and elements of the market like consumer segmentation, 4Ps of Marketing, distribution channels and etc. It also provides knowledge about the concept of HRM, HRP, training and development and its emerging role in present business world.

4. Cost and management accounting – I (CC 2.1Ch):

The scope of this subject is to provide students about the basic concepts about costs, role of cost accountant, cost bookkeeping, analysing and estimating the cost of material, labour and overheads. It also gives an idea about the use of different costing methods.

SEMESTER- 3

1. Information Technology & Its Application in Business (SEC 3.1 Chg):

From this subject student will learn the basic concept about I.T., the role of I.T. in business, terms associated with I.T. like data, DSS,MIS and etc.. The use of internet and its applications and security to protect the recorded data.

2. Business Mathematics & Statistics (GE 3.3 Chg):

It gives the basic idea about the role of mathematics & statistics in the business by using different methods like Permutations and Combinations, Set Theory, Logarithm, Compound Interest and Annuities, Correlation and Regression Analysis, Index Numbers and etc.

3. Financial accounting – II (CC3.1Ch):

From this subject student will learn bit more about accounting and its different accounting methods like partnership accounting, branch accounting, hire purchase, departmental accounting and many others.

4. Indian Financial System (CC3.2 Ch):

The scope of this subject is to provide students knowledge about the basic concepts of Financial System, Financial market (money and capital market) and financial institutions. It also gives a brief idea about the use of financial services and the ways to protect the investors.

SEMESTER: 4

1. Microeconomics-II & Indian Economy (GE 4.1 Chg):

The scope of this subject is to provide students brief idea about the basic concepts of Monopoly, Imperfect Competition, Price Determination factors. It also discusses about the basic issues in Economic Development and features of Indian economy and social issues in Indian economy.

2. Entrepreneurship Development and Business Ethics (CC 4.1 Chg):

From this subject student will learn about the meaning, elements, determinants and importance of entrepreneurship, factors required to develop the entrepreneurs of the nation. It also provides knowledge about the basic concept of Business Ethics, the principles guiding the business ethics of any organisation, corporate culture and ethics & corporate governance.

3. Taxation-I (CC 4.1 Ch):

It informs the students about the basic concepts and definition about the Income Tax ct,1961and about the five heads of Income.

4. Cost and Management Accounting -II (CC 4.2 Ch):

Under this subject students will get more knowledge about costing and its implications. They are made familiar about important methods of costing like marginal costing, standard costing, etc.

SEMESTER: 5

1. Auditing & Assurance (CC 5.1Ch):

It informs the students about the basic concept, need and purpose of Audit, its procedures and techniques, concept about audit risk and internal control system, vouching, verification and valuation, audit report and about company audit.

2. Taxation-II (CC 5.2 Ch):

Under this subject student gets more knowledge about taxation like computation of total tax and tax payable and basic concept and implication of GST.

3. Macroeconomics and Advanced Business Mathematics (DSE 5.1 A):

Under this subject student gets more knowledge about economics i.e. macroeconomics in terms of National Income Accounting, Determination of Equilibrium Level of National Income, Commodity market and Money market equilibrium and other important concept like Money, Inflation and nemployment, etc. It also provides knowledge on and above the basic concept about Business Mathematics whereby the students are made familiar with the basics of some of the important concepts like functions, limit and continuity, differentiation and integration, determinants and matrix.

4. Corporate Accounting (DSE 5.2 A):

Under this subject students will get knowledge about accounting related to corporate like introduction and accounting for shares & debentures, buy back and redemption of preference shares, company's final accounts and etc. whereby students can get the idea about the use of accounting in case of company.

SEMESTER: 6

1. Environmental Studies (AECC 6.1Chg):

Under this segment students are asked to prepare a project work on any topic related to environmental issues like air pollution, water pollution, etc. with the intention to gain knowledge about the topic.

2. Computerised accounting system and e-filing of tax return (SEC 6.1Chg):

Under this segment students are assigned withthe project work on any topic related to Computerized Accounting or E-Filing of Tax Return with the intention to gain practical knowledge about the topic.

3. Project Work (CC 6.1 Ch):

Under this segment students are assigned with the project work on any topic related to Accounting and Finance like GST, consumer protection, consumer behaviour, analysis of working capital and etc. to make the students gain knowledge on both theoretical andpractical aspects of the topic and enhance their skill too.

4. Financial reporting and financial statement analysis (DSE 6.1 A):

Under this subject students will get knowledge about the basic concept of financial reportingand analysing the financial statements of the company. They are made familiar with important concepts like Accounting Standards (AS) and IndAS, Cash Flow Statement, Fund flow Statement, Holding Company and etc.

5. Financial Management (DSE 6.2 A):

From this subject student will learn how to manage the funds or finance of the management in the best possible manner. This subject helps to provide idea about Sources of Finance and Cost of Capital, Leverage and Capital Structure Theories, Working Capital Management, and Decisions on Capital Expenditure and Dividend.

Department: Electronic Science

Program Outcomes:

The overall aim is to:

- Provide students with learning experiences that develop broad knowledge and understanding of key concepts of electronic science and equip students with advanced scientific/technological capabilities for analysing and tackling the issues and problems in the field of electronics.

- Develop ability in students to apply knowledge and skills they have acquired to the solution of specific theoretical and applied problems in electronics.

- Develop abilities in students to design and develop innovative solutions for benefits of society, by diligence, leadership, team work and lifelong learning.

- Provide students with skills that enable them to get employment in industries or pursue higher studies or research assignments or turn as entrepreneurs.

- The introduction of the CBCS (Choice Based Credit System) from the year 2018 empowers the student to select from a list of core, elective and other course topics in Electronics and related areas as per his requirement and inclination.

Program Specific Outcomes:

- Demonstrate extensive knowledge of the disciplinary foundation in the various areas of Electronics, as well as insight into contemporary research and development. Demonstrate specialized methodological knowledge in the specialized areas of Electronics about professional literature, statistical principles and reviewing scientific work.

- Demonstrate ability to apply electronics knowledge & experimental skills critically and systematically for assessment and solution of complex electronics problems and issues related to communication systems, embedded systems, computers networks, robotics, VLSI Design and fabrication and other specialized areas of electronics. Demonstrate ability to model, simulate and evaluate the phenomenon and systems in the advanced areas of electronics.

- Demonstrate ability to apply one’s electronics knowledge, experimental skills, scientific methods & advanced design, simulation and validation tools to identify and analyse complex real-life problems and frame technological solutions for them.

- ❖ Demonstrate ability to design and develop industrial products, processes and electronics systems while taking into account the circumstances and needs of individuals, organizations and society with focus on economic, social and environmental aspects.

- ❖ Communicate his or her conclusions, knowledge & arguments effectively and professionally both in writing and by means of presentation to different audiences in both national and international context.

- ❖ Ability to work in collaborative manner with others in a team, contributions to the management, planning and implementations.

- ❖ Ability to independently propose research/developmental projects, plan its implementation, undertake its development, evaluate its outcomes and report its results in proper manner.

- ❖ Ability to identify the personal need for further knowledge relating to the current and emerging areas of study by engaging in lifelong learning in practices.

Ref: UGC LOCF for Electronic Sc. 2019.

COURSE OUTCOMES: (Honours):

The learning outcomes from specific topics have been listed below:

SEMESTER 1:

CC1: Basic Circuit Theory and Network Analysis: Study basic circuit concepts in a systematic manner suitable for analysis and design. Study network theorems which facilitate simplifying the circuits. Study transient analysis as well as steady state response of dc and ac circuits. Perform hands-on practical experiments with the circuits to understand the concepts better. Get introduced to electric measuring instruments like voltmeters, ammeters and multimeters in the process.

CC2: Mathematics Foundation for Electronics: Equip the students with the mathematical skills required to quantitively understand the physics behind the course topics as also to analyse complex circuits. The associated practical classes would introduce the students to scientific programming using a computer in the form of SCILAB or MATLAB.

SEMESTER 2:

CC3: Applied Physics: Study topics on solid-state, quantum and statistical physics to have a better understanding of semiconductor and other materials and devices encountered in electronics. Perform practical experiments with semiconductor devices like basic diodes, LEDs as also conduct simulation studies on a PC.

CC4: C Programming and Data Structures: Get introduced to high level programming language in the form of C programming. Learn important concepts and algorithms related to data-structures. Learn not only the theory but also how to run the programs on a computer in the associated practical classes.

SEMESTER 3:

CC5: Semiconductor Devices: Learn how semiconductor devices like the diodes, bipolar transistors, field-effect transistors etc. work by studying their current-voltage characteristics. Perform experiments with the devices in the laboratory to have a better understanding of the characteristics.

CC6: Electronic Circuits: Study the working of electronic circuits involving diodes, BJTs, JFETs etc., more specifically rectifiers, small-signal amplifiers, oscillators, tuned and power amplifiers. Perform laboratory experiments with the above circuits and have a better understanding.

CC7: Electromagnetics: Study topics on vectors, electrostatics and electrodynamics as also from magnetism in order to be able to better understand the working of electronic communication systems to be taught later. Use SCILAB/ MATLAB software to performsimulations related to the above on a PC.

SEC 1: Circuit Modelling using PSPICE: Learn how to model and analyse electrical andelectronic circuits on a computer using PSPICE. This would prove very useful to students from an employability erspective.

SEMESTER 4:

CC8: Operational Amplifiers and Applications: Learn the ins and outs of the very important operational amplifier IC chip, namely IC741. Also learn the working of other analog IC chips like the IC 555 timer, IC LM317 temperature sensor, IC regulators etc. Perform related experiments in the laboratory.

CC9: Digital Electronics and VHDL: Study the theory of digital electronics and related systems. Learn basic aspects of simulating digital circuits using the VHDL software on a computer. This will equip students later on seeking employment in electronics-hardware based companies.

CC10: Signals and Systems: Learn about signals and systems used in electronic communication and the theoretical procedures involved in analysing such signals. Use SCILAB/MATLAB to simulate the study of such signals on a PC as part of the practical class.

SEC B1/B2: Internet and Java Programming/Programming with MATLAB or SCILAB: Learn about the working of the internet and basic aspects of an object-oriented programming language like Java. Alternatively, study scientific programming using MATLAB or SCILAB, which was already introduced in earlier courses.

SEMESTER 5:

CC11: Electronic Instrumentation: Study in details the working of the different instruments one would encounter in an electronics lab, namely, current, voltage and impedance measuring instruments, analog to digital and digital to analog convertors, signal generators, transducers and most importantly, the ubiquitous oscilloscope, used to measure a host of signal parameters. Also perform experiments related to the above to have a better understanding.

CC12: Microprocessors and Microcontrollers: Get introduced to the working of a microprocessor (Intel's 8085) and also learn how to program a microprocessor, i.e. learn assembly language programming (ALP). Also learn the hardware and working of a microcontroller (PIC16F887). Parallelly learn to write and execute the ALPs for the 8085- microprocessor using a programming kit in the laboratory class. This topic will be very helpful for students interested in building a future career in the area of computer hardware.

DSE 1: Numerical Techniques: Learn how to solve mathematical equations and problemson a computer by learning numerical techniques and algorithms. Implement the techniques in the practical class on a computer using a high-level language or scientific programming software like MATLAB/SCILAB.

DSE 2: Power Electronics: Learn the theory and working of high-power electronic devices like SCR, Diac, Triac as also of DC and AC motors. Study the volt-ampere characteristics of a few of the devices in the practical class for a better understanding.

SEMESTER 6:

CC13: Communication Electronics: Learn how message signals having information are transmitted electronically, the need for modulation, different types of analog and digital modulation techniques and systems. Perform relevant experiments in the practical classes using experimental kits or through simulation on a computer.

CC14: Photonics: Learn different theoretical aspects of physical optics like interference, diffraction and polarization. Learn the physics behind and working of different electro-optic devices like LEDs, LASERs, Photodetectors, LCDs and Fibre optic systems and perform related experiments for a better understanding.

DSE 3: Digital Signal Processing: Learn the theoretical aspects of digital signal processing, which deals with the analysis and processing of digitized voice, audio, video and other signals. Perform related simulation experiments in the lab.

DSE 4: Transmission Lines, Antenna and Microwave Devices: Learn the theory and working of twin-wire transmission lines, wave-guides, antenna as also about radiowave propagation and

microwave devices like the Klystron and the Magnetron. Use MATLAB/SCILAB to perform simulated experiments related to the above in the practical class. Study of this topic would be beneficial to those wishing to study or work in the field of electronic communication in future.

Course Outcomes (General):

SEMESTER 1:

CC1: Network Analysis and Analog Electronics: Learn how to mathematically analyse electric circuits using network simplification theorems. Learn the characteristics and working of basic electronic devices like the diode and the transistor. Learn about different applications of transistor as amplifiers and oscillators. Perform corresponding experiments in the lab on prototype boards to have a better understanding of the working of the devices and circuits.

SEMESTER 2:

CC2: Linear and Digital Integrated Circuits: Learn about linear digital ICs like the operational amplifiers and 555 timers and their applications in different circuits. Get introduced to digital electronics through Boolean algebra and logic gates. Understand the working of combinational digital circuits like adders, multiplexers, decoders etc as well as that of sequential digital circuits like flip-flops, counters etc. Perform experiments with analog as well as digital IC chips on prototype boards and get a better understanding of their working.

SEMESTER 3:

CC3: Communication Electronics: Learn the basic theoretical aspects of electronic communication in the form of analog and digital modulation. Learn about cellular or mobile communication, the use of standards like GSM and CDMA, the basics of different cellular networks like 2G, 3G, 4G etc. Also, get introduced to GPS and satellite communication. Perform basic lab experiments on modulation. This course should help students have a working knowledge of how electronic signals having information are communicated and exchanged and enable them to put this knowledge to work in any future endeavour if needed.

SEC-A: Computational Physics/Renewable Energy Harvesting: Learn scientific programming in FORTRAN, scientific word processing using LATEX and scientific visualization using GNUPLOT. Alternatively, learn the importance of fossil fuels, different forms of renewable energy and their harvesting.

SEMESTER 4:

CC4: Microprocessors and Microcontrollers: Learn about the hardware and working of the 8085-microprocessor and the 8051-microcontroller. Also learn about assembly language programming and how to program the 8085 and the 8051.

SEC-B: Electrical Circuits and Network Skills: Learn about electric circuits, sources, measuring instruments. Learn basics of Electric Drawing. Learn about electric motors, electric wiring and protection. This skill-enhancement course would help those wishing to make a vocational career in this field.

SEMESTER 5:

DSE-1A: Photonic devices and power electronics: Learn about photonic or optoelectronic devices like semiconductor lasers, solar cells, LCD displays. Get introduced to fiber-optics and fiber-optic systems. Also learn about power electronic devices and their applications. Also perform related practical experiments in the lab for better understanding of the working of few of the devices.

SEC-A: Same as semester 3

SEMESTER 6:

DSE-1B: Electronic Instrumentation/ Transmission Lines, Antenna and Radio Wave Propagation: Learn about instruments commonly used in the electronics laboratory including oscilloscopes and signal generators etc. Learn data acquisition using the Arduino board. Learn the use of basic bio-medical instruments. Perform lab experiments to have a better understanding. Alternatively, learn about radio wave propagation using transmission lines, waveguides, antennae etc. Also learn about different ways of radio wave propagation. Use mathematical software like MATLAB/SCILAB to simulate problems in radio-wave communication.

SEC-B: Same as semester 4.

Department: Economics

PROGRAMME OUTCOME:

The students acquire a base level knowledge about the subject Economics, and they also come to know why is this called a social science. Not only that they also get a preliminary idea about the subject of statistics and its basic tools. The knowledge of Economics will help them in school level teaching.

PROGRAMME SPECIFIC OUTCOME:

The students have to make Projects. The topic is given by the subject teachers. They face a viva-voce also. It helps them to prepare themselves for the job interview.

COURSE SPECIFIC OUTCOME:

SEMESTER I: The students will have an idea about the difference between Micro and Macro Economics.

SEMESTER II: The students get an idea about some macro -economic concepts like National Income Accounting etc. They will be familiar with the Keyenesian concept of Economics. They will have an idea about what is called consumption, savings, investment etc.

SEMESTER III: It is about Development Economics. They come to know about Indian Economy and about some international organisations like WTO, IMF, World Bank etc.

SEMESTER IV: The students will have an idea about Fiscal policy with special reference to India. They will also have an idea about the role of industry and agriculture in Indian economy. The data will help them to answer many multiple- choice questions while sitting for competitive examinations.

SEMESTER V: The students will be aware of the different components of Money supply practised in India. They will have a brief idea about the financial sector of the country. They will gain knowledge about share market also.

SEMESTER VI: The students have an idea about Public good and how is it different from private good. They will come to know about different parts of Union Budget.

DEPARTMENT: GEOGRAPHY

PROGRAMME OUTCOMES:

- Students will be able to understand basic concepts of Geography.
- This programme trains the students in scientific skill both in theory and practical. It develops their aptitude for geography.
- The programmes have been instigating our students to secure skilfully their jobs as teachers, professors, researchers in the institutes, teachers-both in schools and higher education institutes, administrators in government jobs as well as in private companies, personnel in industries, naturalists and in many other positions.
- The programme has helped the learners develop their aptitude of individual planning, habit of workingin groups, field survey, practical skills and other skills which fit them in various spheres of life.
- The course develops a sense of awareness about the environment, society and the scientific community.

Program Specific Outcomes:

After the successful completion of B.A/B.Sc. in Geography, students gain the knowledge of the following:

- Student will gain the knowledge of physical geography. They will gather knowledge about the fundamental concepts of Geography and will have a general understanding about the geomorphologic and geotectonic process and formation. Imbibing knowledge, skills and holistic understanding of the Earth, atmosphere, oceans and the planet through analysis of landform development; crustal mobility and tectonics, climate change.
- Developing a sustainable approach towards the ecosystem and the biosphere with a view to conserve natural systems and maintain ecological balance.
- Explaining and analysing the regional diversity of India through interpretation of natural and planning regions.
- Awareness about the hazards and disasters to which the subcontinent is vulnerable; and their management.
- Training in practical techniques of mapping, cartography, interpretation of maps, photographs and images etc; so as to understand the spatial variation of phenomena on the Earth's surface.

Course Outcomes :

SEMESTER 1:: CC1/GE1:

- To learn about the Earth's interior, Plate Tectonics Theory, formation of major relief features of the ocean floor and continents along with Classification of folds and faults.

- To learn about the concept of Degradational processes, Principal geomorphic agents like the evolution of fluvial, coastal, aeolian and glacial landforms, the ideas of Davis, Penck and King on slope evolution.
- Study to know about Global hydrological cycle, Concept of ecological flow and drainage basin.
- To understand the Physical and chemical properties of ocean water, distribution of temperature and salinity, Ocean circulation, wave and tide and about Marine resources.
- To identify rocks and mineral samples, construction andinterpretation of relief profiles in topographical maps, extraction of drainage information from Survey of India topographical maps.

SEMESTER 2 : : CC2/GE2:

- Study of Insolation and Heat Budget, Indian Monsoons, Atmospheric disturbances like Tropical and temperate cyclones, thunderstorms, Overview of global climatic change: Greenhouse effect. Ozone depletion and world climatic classification by Köppen.
- To learn about the Factors of soil formation, Soil profiles, Physical and chemical properties of soils like texture, structure, pH, salinity andNPK status, USDA classification of soils and Soil erosion and its management.
- To learn in Biogeography Biomes of tropical rainforest; Savannah and hot desert, Plant types like Halophytes, xerophytes, hydrophytes and mesophytes and Biodiversity.
- To practice the Interpretation of a daily weather map of India, Construction and interpretation of hythergraph, climograph, Determination of soil type by ternary diagram textural plotting.

SEMESTER 3 :: CC 3/ GE3:

- In Economical Geography the Sectors of the economy i.e., Primary, Secondary, Tertiary and Quaternary, Theories of von-Thunen, Lösch and Weber, Location and factors of Cotton, Iron and Steel industries in India are taught.
- In Social Geography, learn about Population and migration, characteristics of Primitive, hunting–gathering, agrarian, industrial.
- To study in Cultural Geography about Carl Sauer: cultural landscape, Rural and urban settlements, Cultural regions and cultural realms.
- To prepare the occupational structure by proportional circles, time series analysis of industrial production using any two manufactured goods, measuring arithmetic growth rate of population comparing two datasets, Nearest neighbour analysis from Survey of India 1:50k topographical maps.

SEC A:

SEC 1:: FOREST AND WILDLIFE MANAGEMENT:

- To study the importance and strategies of forest and wildlifemanagement.

- To study the Legal frameworks of forest and wildlife protection in India like the Indian Forest Act 1927, forest conservation Act 1980, Wildlife Protection Act 1972, Biodiversity Act 2000.
- Learn about forest rights, management of poaching and illegal logging.
- To know about various cases of human-wildlife conflicts like Jangal Mahal, Sundarban and Duars.

SEC 2:: COASTAL MANAGEMENT:

- To study the different components of coastal zone.
- Learn about environmental impacts and management of mining, oil exploration, salt manufacturing, land reclamation and tourism.
- To know about different Coastal hazards and their management like erosion, flood, sand encroachment, dune degeneration, estuarine sedimentation and pollution.
- To study the principles of Coastal Zone Management.

SEMESTER 4: : CC 4/ GE 4:

- To study different types of Scales, different types of Coordinate systems like Polar and rectangular along with Map projections their Classification and uses.
- To know about Survey of India topographical maps, representation of data by dots, proportional circles, isopleth and choropleth.
- To study about Principal national agencies like : GSI, NATMO, NBSSLUP, NHO, NRSC etc.
- To study about Remote Sensing and Geographical Information System (GIS) like types of satellites, sensors, bands and resolutions OF ISRO mission.
- To study the Basic concepts of surveying and it's equipment like Prismatic compass and Dumpy level.
- Practice the Graphical construction of scales, Construction of different types of projections like Simple Conic with one standard parallel, Cylindrical Equal Area, and Polar Zenithal Stereographic.
- Practice the Construction of thematic maps like Proportional squares, proportional circles, choropleths and isopleths and Preparation of annotated thematic overlays from satellite standard FCCs of 1:50k.

SEC 3:: RURAL DEVELOPMENT:

- To study about Rural Development and it' s Basic elements.
- To study the Cumulative causation model, core-periphery model, Gandhian approach to rural development.
- To study about Drought prone area programmes, PMGSY, SJSY, MGNREGA, Jan Dhan Yojana.
- To study about Panchayati Raj system, rural development policies and programmes in India.

SEC 4:: SUSTAINABLE DEVELOPMENT:

- To study the concept, historical background, components, limitations of sustainable development.
- To study Challenges of sustainable development like Determinants, linkage among sustainable development, environment and poverty.
- To know about Global environmental issues like Population, income and urbanization, health care, forest and water resources
- To study the Global goals for sustainable development.

SEMESTER 5:

DSE A1:: Regional Development:

- To study the definition of region, types and need of regional planning. The choice of a region for planning; characteristics of an ideal planning region.
- To study agro-ecological zones for planning in India, growth pole model of Perroux, Growth centre model in Indian context and concept of village cluster.
- To study the Problem regions and regional planning, backward regions, special area development plans in India like DVC: success and failures.
- To study Changing concept of development and underdevelopment, Indicators of development like Economic, social and environmental.
- Regional development in India, regional inequality, disparity and diversity, Development and regional disparities in India sinceIndependence: Disparities in agricultural development.
- To study Development and regional disparities in India since Independence: Disparities in industrial development. Development and regional disparities in India since independence: Disparities in human resource development in terms of education and health.
- Practice to prepare the Z score and composite Index from suitable data, Measurement of inequality by Lorenz curve and location quotient. To determine of sphere of influence by gravity model. Weavers method to find regions based on given criteria.

DSE A 2:: Geography of Tourism:

- To study about geographical parameters of tourism, types of Tourism like Ecotourism, cultural tourism, adventure tourism, medical tourism, pilgrimage, international, national. Factors of tourism like Historical, natural, socio-cultural and economic; motivating factors for pilgrimages
- To study spatial pattern of tourism: Spatial affinity; areal and locational dimensions comprising physical, cultural, historical and economic; International travel destinations, Impact of tourism: physical, economic and social and perceptive positive and negative.

- To study the Role of foreign capital and impact of globalization on tourism, Tourism in India like Tourism infrastructure; regional dimensions of tourist attraction; case studies of Dal lake, Goa, Garhwal Himalaya, desert and coastal areas.
- . To study Promotion of tourism i.e, National tourism policy, Tourism circuits-short and longer detraction: Agencies and intermediaries, Indian hotel industry.
- To practice Tourist flow analysis and Tourist flow projection from time-series data. To prepare Isochronic map.

SEMESTER 6:

DSE B3:: Agricultural Geography:

- To study the Progress of Agricultural Geography with reference to allied disciplines, approaches to study of Agricultural Geography. Role of agriculture on human society, Factors affecting agriculture, Classification of world agricultural systems, study about major agricultural types: Intensive subsistence, extensive commercial and plantation agriculture.
- To study Concept of cropping pattern, crop combination, gross and net cropped area, crop rotation, and factors affecting yield and measures of agricultural productivity.
- To study critical review and contemporary perspective of Von Thünen model.
- To study the role of irrigation in Indian agriculture and Problems of agriculture with special reference to South Asian countries, World patterns of agricultural production and food security. Land use survey and land classification (USDA). Globalization and agriculture with special reference to India.
- To practice the Preparation and interpretation of crop calendar using Ergograph, Preparation of crop-combination regions by Weaver , Determination and mapping of cropping intensity , Determination and mapping of crop diversity .

DSE B-4:: Population Geography:

- To study about Relation between population geography and demography and Population distribution: density and growth. Classical and modern theories in population distribution and growth, Demographic transition model, optimum population, Population distribution, density and growth profile in India.
- To study Concepts of age-sex composition; Rural and urban composition; Literacy and education. Measurements of fertility and mortality, Population composition of India: Urbanisation and occupational structure.
- To know the Migration: Causes and types and National and international patterns of migration with reference to India, human development index and its components. India's population policies. Population and environment, implication for the future. To study the issues: Ageing of population, declining sex ratio, population and environment dichotomy, impact of HIV/AIDS.
- . To practice the Population projection by arithmetic method, Population density mapping: State-wise for India. Analysis of work participation rate: Total and gender-wise for India. Analysis occupation structure by dominant and distinctive functions: Districts of West Bengal.

DEPARTMENT: COMPUTER SCIENCE

Programme Outcomes:

- This programme in Science train the students in scientific skill both in theory and practice. It develops theiraptitude for Computer science & application.
- The programmes have been instigating our students to secure skilfully their jobs as researchers and scientists in the institutes, teachers-both in schools and higher education institutes, administrators in government jobs as well as in private companies, personnel in industries, naturalists and in many other positions.
- The programme have been instigating the learners develop their aptitude of individual planning, habit of working in groups, field survey, literature reviews, diligence and other skills which fit them in various spheres of life.

Program specific Outcomes:

After successful completion of B.Sc. in Computer Science, students gain the knowledge of the following:

- An essential skill of problem solving with different dimensions of computer science and computing.
- Ability to understand the principles and working of computer systems to assess both the hardware and software aspects.
- Professional skills of software design including familiarity and practical competence with a broad range of programming language and open source platforms.
- Ability to apply mathematical methodologies to solve computation task, model real world problem using ppropriate data structure and suitable algorithm.
- Ability to use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations.
- Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

Course Outcomes:

- Study of Computer Fundamentals, Digital Circuits and Basic Electronics enables the students to describe the usage of computers, why computers are essential components in business and society and identify categoriesof programs, system software and applications.
- Computer Networks and Data Communication helps the students to utilize the Internet Web resources, evaluate on-line e-business system and solve common business problems using appropriate Information Technology applications. It also gives the knowledge to distinguish various types of network standards and communication software.
- Study of Numerical Analysis and Discrete Mathematics helps to apply algorithmic, mathematical and scientific reasoning to a variety of computational problems.
- Study of Software Engineering helps to gather requirements, design correctly, implement and document solutions to significant computational problems and analyze performance standards.
- Data Structure and Algorithm helps to analyze and compare alternative solutions to computing problems.
- Study of Computer Organization, helps to learn about the design of computers which includes both overall design, or architecture, and their internal details, or organization.
- Study of Operating System & System Software helps them to understand how operating system allows a computer's hardware components, including processors and drives, to communicate with its software components, such as applications and data instruction sets.
- Study of C language can be used for low-level programming, such as scripting for drivers and kernels and it also supports functions of high level programming languages, such as scripting for software applications etc.
- Study of C++ will allow the students to build multi-device, multi-platform app, GUI applications to 3D graphics for games to real-time mathematical simulations.
- Study of 8085 Microprocessor helps the students to understand the design of personal computers as well as a number of other embedded products. They will understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.
- Computer Graphics will help the students to design abstract, synthetic objects such as mathematical surface in 3D, animations, motion dynamics and update dynamics.
- Database Management System (DBMS) helps the students to understand how to handle huge volumes of data and multiple concurrent users, data integrity, consistency, security, and appreciable system performance.
- Study of UNIX helps students to create and manage simple file processing operations, organize directory structures with appropriate security, and develop shell scripts to perform more complex tasks, monitor system performance and network activities.
- Visual Basic 6.0 supports Rapid Application Development (“RAD”) which helps to develop graphical user interfaces and to connect them to handler functions provided by the application.

Department: Sanskrit

The CBCS Course curriculum is well designed and very promising where the core course would help to enrich the subject knowledge of the students and generic electives make integration among various interdisciplinary courses. The introduction of Skill Enhancement Courses (SEC) and Discipline Specific Courses (DSE) would help to gain more powerful knowledge not only in their core Sanskrit subject but also in interrelated multidisciplinary subjects. In brief the student graduated with this type of curriculum would be able to accumulate the subject knowledge along with necessary skills to suffice their capabilities for academia and also research field.

Program Outcomes:

- Students will able to understand basic concept in different fields of Sanskrit literature like Sanskrit poetry, prose, drama etc.
- Students will able to assimilate socio-cultural life of ancient and present by reading Sanskrit literary texts.
- Pupils will come to know truth, loyality, discipline, punctuality by the readings of ancient Sanskrit literature such as Reg-Veda, Chandyogyopanishad etc.
- Students will be acquainted with rhetoric and prosody of Sanskrit literature by the readings of Sanskrit texts and they enrich themselves.
- Through the readings of Sanskrit texts like drama, poetry, prose etc. students will able to improve themselves in their attitude personality.
- To prepare the students for a successful career in teaching profession as well as in research field.

Program Specific Outcomes :

- Students will enrich themselves about Sanskrit literature by the use of appropriate Sanskrit words. Through the use of qualitative analysis Sanskrit words in research field it will be more prominent.
- They will become familiar with different kinds of literary texts like poetry, prose, drama many authors and grammar since ancient time.
- Students will able to acquire knowledge about the use of Sanskrit sentences and translation specifically Sanskrit to Bengali and vice versa.
- Students will able to understand socio-economic development time to time by the readings of different kinds of Sanskrit text.
- Through the various readings of literary texts in Sanskrit students will come to know different issues of social problem and try to solve them.
- Students will be concentrate in the use of appropriate Sanskrit language in writing as well as in reading.
- Students will get rid of bad habits, superstition by the readings of Sanskrit texts.

- Students will able to control mind and concentrate more and more by the yoga, meditation which are valuable part in Sanskrit literature.

COURSE OUTCOMES:

Semester	Course code	Course Outcomes
SEM 1	CC1/GE1 (Sanskrit Poetry)	➢ The Mahakavya Raghuvamsam is belived to be one of the mature period work of the day states that the poet flourished during the reign of Chandragupta II of the Imperial Gupta dynasty . This mahakavyas Translation , Explation ,of the verses , story of the canto , characteristics of Raghu clan . Characteristics of Dilipa , sources of the plot etc are discussed thoroughly . Students love to read this Kavyas which increases their vocabulary and mobilizes their creative energy . ➢ Nitisatakam is famous national poetry, composed by poet Bhatrihari , which is basically used to describe the horrors the ignorant people of the society. This poetry helps learning the students about love, devotion and principles, which are important to lead a proper life. ➢ . History of Sanskrit poetry is the very informative topic for the students and its help to the students for their present as well as future life. Through its regarding students can assimilate the culture of present and ancient livelihood.
SEM 2	CC2/GE2 (Sanskrit Prose)	➢ The selected prose is an extraction from 'Kadambari' Katha Kavya written by " Banabhatta " . In our selected prose we find Sukanasa, the wise and pious minister of Tarapida , likes to give some advices to Chandrapida before to be the king of Ujjain .The pictures of society and political thoughts have been nicely depicted in Suknasopadesa. ➢ From this prose Shivaji"s character in Shivaji"s conquest and his protest against the Mughal Empire are described. ➢ This is more interesting topic for students because it helps the learning about historical events. This topic is very interesting to the students. They learn morality and discipline through the reading of various proses and fables.

SEM 3	CC3/GE3 (Sanskrit Drama)	➢ Abhijnanasakuntalam is the masterpiece of Kalidasa . It is a drama in seven acts, based on the love story of king Dusyanta and the maiden Sakuntala . The plot of the drama has been taken from the epic Mahabharata ,but the dramatist has introduced many noble innovations . The basic theme of the drama which the dramatist wants to say is __ True love is immortal . superb Characterizations , study of human nature and wonderful mastery over the language has given the poet world wide recognition . From this text students can know how to love nature and how to behave in day of day life. ➢ From this part of the syllabus, students get to know about the details of various terms used in Sanskrit. Terms like 'Drama", "Hero", 'Nandi', 'Clown', 'Proverbs' etc. will help students learning basic knowledge in Sanskrit. ➢ Students feel proud knowing that Sanskrit drama is the oldest drama in the world history by the discussion of the history of Sanskrit drama.

	SEC-A1 (Basic Sanskrit)	Co 1. Sanskrit is such as ancient language which is very simplistic and pleasant. In this semester students learn properly the translation of Sanskrit language basically Bengali to Sanskrit language. Co 2. Students will gate acquainted with different subjects and will develop their intellect while searching for the answers to the given questions. From writing paragraph, the skill of writing answers among the students will improve. Co 3. This is an elementary Grammar course in Sanskrit Language designed for students who wish to drama Sanskrit from the very beginning.

SEM 4	CC4/GE4 (Sanskrit Grammar)	➢ This is a very interesting and informative part of Sanskrit grammar. From this part students will learn every information about some special definitions (technical terms). ➢ Grammar is one of the most important branches of Sanskrit Literature . Laghusidhanta Kaumudi is a text in which Panini sutras are rearranged . The book is ideal for both students and teachers who desire to have a good grasp of traditional Panini an Sanskrit grammar in a proper manner .In the Sandhi Prakarana Ac Sandhi hal Sandhi and visarga Sandhi are discussed. ➢ In this part students get basic information about 'Karaka' and 'Vibhakti'. Students can also learn use of 'Vibhakti' in each 'Karaka' by Panini's grammar system.
	SEC-B1 (Spoken Sanskrit & Computer Awareness)	➢ Sanskrit is a very ancient language. To use spoken language of Sanskrit will help students getting basic concepts in Sanskrit and it will also help them improvising their skill in Sanskrit. ➢ This course intends to give the basic knowledge of the students and aims to get students acquainted with the application in practical field knowing properly the different types of operating systems, machine, Languages etc ➢ Students learn how the way typing in Unicode for preservation and digitalization of Sanskrit text web publishing are.
SEM5	DSE1 (Philosophy , Religion Culture in Sanskrit Tradition)	➢ From this chapter students learn the universal principles and laws, duties and righteousness, which bring about peace, harmony and progress. Dharma includes morality, ethics and justice. ➢ This course aims to get the students acquainted with the basic approach to study Indian philosophy and to enable students to grasp knowledge from the original Sanskrit text only. ➢ In the present covid-19 pandemic situation this chapter is also help to the students. Students come to know that something is to be done through own intellect is better then others.

SEM 5	DSE2 (Indian Perspectives in Personality Development)	➢ Pupils become acquainted with the historical perspective of Reg Veda, Chandyogyopanishad etc. and they also improve themselves in truth, loyalty as well as their duty by knowing sloka of Gita ➢ Describe the concept of a person as mentioned in the Gita , and helps students by explaining the controlling of mind and self management through devotion. ➢ This is an another important and interesting chapter for students. The Gita has been used to analyze measures for behaviaral important. The ultimate goal of this chapter is to make students understand about the values of Gita.
	SEC-A2 (Basic Elements in Ayurveda)	➢ In this pandemic situation this part is also relevant because students come to know advice, morality, discipline by the study of the introduction of Ayurveda ➢ Charakasamhita is a unique book of Indian medicine. Students will know the cases of various diseases and their methods of treatment. They will be amazed by learning this part of the syllabus. ➢ This course Aims to introduce various types of Vedic text to enlighten the Learnerswith the knowledge of development of Sanskrit from ancient time to the modern period .
SEM6	DSE3 (Literary Criticism)	➢ The study of Sanskrit poetics embraces all poetic arts and include concepts like Alankara , Rasa , Riti , Dhvani etc .This course also aims to acquaint students about the Kavyavaisistya and kavyaprayojana , kavyakarana , kavyasvarupa and kavyabheda etc.

SEM6	DSE4 (Nationalism in Sanskrit Literature)	➢ Co 1. Students will learn Meaning of Nation, Definitions and Constituent Elements of Nation, Indian concepts of Nation, Elements of nationality from this chapter. ➢ co 2. From this chapter students will again knowledge about survey of nationalistic trends in modern Sanskrit literature before independence. ➢ Co 3. By the study of this part students recall our freedom movement and its functionality in Sanskrit literature. This functionality of Sanskrit language is still now significant to them.
SEM 6	SEC-B2 (Yogasutra of Patanjali)	➢ Samadhipada is one of four chapters from the Yoga Sutras, which opens with a definition of Yoga. This chapter expresses the goal of concentration. ➢ In this arena yoga is very important to the students as well as people for health and good habits. ➢ Vibhuti pada tells about the benefits of yoga practice and it's importance . These Yoga sutras gives a clear understanding of yoga with the practical aspect . sutra means "thread'' and the patanjali yoga sutras are attempted to weave knowledge , threadlike , around and into their few simple words . In other words , sutras are brief and easy to memorize.

Department: History

Program Outcomes:

- Students will be able to understand basic concept of history and able to question with argument and logic.
- Understand the subject for sustainable dev. that one student can adjust in different fields of activity related to historical knowledge.
- Create a historical sense and overall understanding of the subject.
- To prepare the students for a successful career in history.
- History is recognised as a powerful subject of Social Science group.
- Students should be developed in a way that they will take the opportunity to work in any field of Social Science with an inter-disciplinary approach.

Program Specific Outcomes :

- Apply appropriate approach and enhance quality lecturing.
- Present the topic in a way that can open the horizon of the knowledge.
- Will become familiar with the different aspects of history with its various interpretation.
- Acquires the ability to synthesize, separate and characterise each segment with their own dimensions.
- Achieve the skills required to succeed in graduate schools, in archival fields, and so on.
- Understand the importance of field work. Without field work, Historical understanding in diversified fields cannot be completed.

Course Outcomes:

Semester 1

Paper 1:: History of India (C300BCE)

- Highlighting and revealing human civilisation with all its wonder and describing its different progress during the course of time : From Palerlitic Age to Sangam Literature.
- It provides an widespread deep idea about the origin and development of Ancient Indian Civilisation. It is an wonderful effort to make the students feel their glorious past Archival materials and its experiments should be utmost part of this particular paper.

Paper II :: Social Formations and Cultural Patterns of the Ancient World other than India.

- Same Revelations has been done in World Perspective : Comparison between the World's Ancient Civilisation Origin of Food Production, Development of Human Civilisation. Students get very much interested when teacher speaks it with eloquence.
- This paper is an perfect example how the World Civilisation with its multifaceted dimensions starts its journey.

Sem-II:: History of India (C. 300 BCE to 750 BCE)

Paper-III This paper is an extension of Paper-I.

Paper-IV Social Formations and Cultural patterns of the Medieval World other than India. This paper is also an extension of paper-II in different themes : But spirit of history remains same.

Sem-III

C.C.-V:: (C 750 – 1206) **History of India**

Studying Early Medieval India with use of geographical sources Debates on Indian Feudalism. It encompasses Political, Agrarian and Social Changes. Trade and Commerce / Religious Developments is an important and significant issue encourages students to form their opinion and joining in debates.

C.C.-VI:: **Rise of the Modern West-I**

Most amazing and interesting part of the syllabus :

Starting with Transformation of Europe : Transition Debate : Europe emerged from **Feudalism to capitalism.**

Students will get tremendous inspiration studying amazing moments of transformation that can be interpreted in any phase of life.

One should know that History is a relentless development of mankind and it has been relevant not only in past glory but in the light of past we should judge the present scenario.

C.C.-VII **(CE 1206 - 1526) History of India**

Studying Early Medieval India :

SEM-IV

C.C.-VIII **Rise of the Modern West-II. Its' an extended portion of M.W.I.**

C.C.-IX **History of India** (C – 1526 – 1605)

This period is also a period of **Transition from Mughal Rule to Colonial Rule.**

C.C.-X **History of India** (1605-1750)

Continuation of Paper 9.

SEM-5

Paper- 11 **History of Modern Europe** (C 1780-1939)

From Paper-11 C.B.C.S. Syllabus has introduced European History : beginning with French Revolution : **An Epoch Making Event of 18th C. Real beginning** of Modern Structure, not only in France but a break-though of Europe.

This paper through its sensational events is a very inspiring subject for young students : Age of Enlightenment, American War of Independence and French Revolution all are incidents of protest movements : Syllabus very judiciously entering into most turbulent period of Europe. Two World Wars happened during this period.

CC-II History of India (C. 1750-1857)

Paper-12 This period depicts the beginning of **Colonial Rule** followed by direct **Interference of British Crown.**

Transfer of power from British East India Company to British Crown.

Sem-6

Paper-13

History of India from 1857-1964

Continuation of Paper-12

The period witnessed very interesting clash of events between different forces.

a) Cultural Changes and Social and Religious Reform Movements.

b) Movements like Brahmo Samaj...Enigmatic Bengal Renaissance.

c) Making of Religious and Linguistic identities.

d) Emergence of Nationalism Trends up to 1919. Formation of early political organisation.
Moderates and extremists, Swadeshi Movement, Revolutionary Movements, Gandhian Nationalism after 1919 : Ideas and Movements.
a) Malatma Gandhi (Rose to power and so many interesting topics upto **Emergency of a New State** in 1964, Making of the Constitution this period can be called a period of transition from one phase to another phase. Intra-Contradictory struggle between different incidents.

This phase has a tremendous impact on young minds.

Paper-14 History of World Politics 1945-1994

Changing or shifting scenario of World Politics after 2nd World War.

Famous Cold War : Weakening of Balance of power, Origins of the Cold War, New Entry of U.S.A. in World Politics, Pruman Doctrine, Marshall Plan, NATO De-Stalinisation, Thaw in Cold War-Detente. Emergence of the People's Republic of China Protest Politics.

All these topics are of immense interest. With all these diversified dimensions, students will learn to build up their imagination, power of reasoning, judging the local source, archival materials and we expect to grow up as a person of true historical spirit. Students get an idea about basic principles involved in qualitative analysis of History as a **discipline in a true manner.**

Discipline Specific Elective : (Hons.)

DSE-TH L TU

Discipline Specific Elective

This particular venture is an wonderful Experiment and combination of factors that illuminate the horizon of students to a comprehensive and complicated events of History as a discipline.

Sem-5 **(DSE – A-I : History of Bengal**

C-1757 – 1905

From Battle of Plassey to Partition of Bengal.

It is a recapitulation of History already taught during Core Course Group.

Student hopefully will be able to understand connectivity between the core course and D.S.E. They will genuinely able to apply it in different type of competitive examination.

DSE – B-2 Sem-5 :

History of South East Asia 19th C.

This Topic is a new horizon to Hons. Students Narration and gradual Evolution of two Ancient Civilisation of the East. China & Japan

Sem-6 **DSE A-3**

Hist. of Bengal – 1905-1947

Its' a narrative of **Freedom Movement and Agony of Partition**.

DSE B-4

HISTORY OF SOUTH EAST ASIA

20TH CENTURY

This is an extension of DSE B-2

DSE A-2

HISTORY OF THE UNITED STATE OF AMERICA 1776-1945

Paper-8 **DSE 6**

HISTORY OF U.S.A. II 1776 - 1945

(History of an emerging nation)

Outcome **DSE takes an Wholistic Approach** because students get much interest as course will help them in diversified fields and students of scholastic minds **inspire by the subject forging ahead for.**

Skill Enhancement Courses

SEC A & B

SEM 3 SEC A-1 Sem-3-Archives and MUSEUMS

B-1

Sec-B SEM-4 : UNDERSTANDING POPULAR CULTURE

Sem – 3 – Sec – A -2

UNDERSTANDING HERITAGE

SEC B-2

SEM-4 An Appreciation : an introduction to Indian Art.

Motive and Outcome of S.E.C.

This course introduces students to the institutions that house and maintain documentary, visual and material remains of the past. Museum and archives are among the most important such repositories and this course explains their significance and how they work.

1. **DEFINITION AND HISTORY OF DEVELOPMENT**

Types of Archives and Museums. Museum Presentation and Exhibition SEC. Is most practical oriented segment of history but it needs infrastructure and manpower.

If this course is acutely, pursued, students will get opportunity of various jobs in Museums and Archives.

Sec A-2

UNDERSTANDING POPLUAR HERITAGE

This course will enable students to understand different facts of heritage and their significance.

It highlights the legal and institutional frameworks.

SEC B-2

ART APPRECIATION

In History (G) GENERAL

HISTORY – G – CC / GE-1-1 TH & TU

2-2 TH & TU

3-3 TH & TU

4-4 TH & TU

Group – A

SEC A-(1) Historical Tourism

SEC A- (2) Museums & Archives

Group – B Sec B-(1) Indian History & Culture

Sec B-(2) Orality and Oral Culture

D.S.E. (DISCIPLINE SPECIFIC (Gen) ELECTIVE

G.A. DSE – A-(1)

DSE A-(2)

Group B DSE B-(1)

DSE B-(2)

History Ge is he repetition of Core Courses.

HISTORY of INDIA from Earliest Times upto 300 CE

CC – 2 GE 2

HISTORY OF INDIA from C-300 to 1206

GE 3 History of India

(1206 to 1707)

CC-4 GE-4 History of India 1707-1950

INTERPRETING 18th C

DSE : Main purpose to specify students with diverse topics that helps them to get interested with multiplicity of History.

AI National Liberation Movements in 20th C. World.

(I) Nationalism, **Theory and Practice**

(II) **Nature of Imperialism and Colonialism**

(III) National Movements in Nigeria, Kenya, Conge...

(IV) CHINA between 1911-1949.

DSE B-1

PATTERN OF CAPITALISM IN EUROPE 16TH C. TO EARLY 20TH C.

I. DEFINITION OF CAPITLISM

II. COMMERCIAL CAPITALISM

III. INDUSTRIAL REVOLUTION IN ENGLAND CAUSES NAPURE.

SEC (General)

A-(1) Historical Tourism : Theory & Practice

I. Defining Heritage

II. Understanding Built Heritage

Stupa Architecture

TEMPLE ARCHITECTURE MODALITIES OF CONDUCTING TOURISM

SEC B-1

Museum & Archives in India

Sec-A-1 Historical, Tourism (Theory and Practice)

1. Definition

II History of setting up of Museum and Archive

SEC- A-1 – Indian History & Culture

SEC B-2 - Orality and Oral Culture in India

Sec. Hons. & Sec. Pass almost serves the main purpose Orality and Oral Tradition is very relevant in determining the Age, Date and authencity of History where lack of sources is a great determining factor. Historical Tourism enlances the Vision of History.

DSE-2

SOME ASPECTS OF EUROPEAN HISTORY. 1780-195

F.R. is an era of greatest upheaual in Europe and whole of World.

I. FRENCH REVOLUTION : GENESIS NATURE & CONSEGUENIES.

II. Napoleonec Era and aftermath

III. Revolution of 1830 & 1848

IV. UNIFICATOIN OF ITALY GERMANY

V. SOCIAL AND ECONOMIC CHANGES.

VI. IMPERIALIST CONFLICTS – WORLD WAR-I

VI. RISE OF FASCISM AND NAZISM

VII. ORIGINS OF WORLD WAR-II

All these topics are fascinating and EPOCH MAKING : EVENTS leaning towards most devastating change that Europe and the World witnessed during that period.

DSE B-2

SOME ASPECTS of Society and Economy of MODERN EUROPE

15-18th C.

SOCIEO ECONOMIC HISTORY

1. HISTORIOGRAPHICAL TRENDS
2. FEUDAL CRISIS
3. Renaissance : Origin
4. European Reformation
5. Economic dev. of the 16th C. SHIFT OF ECONOMIC BALANCE from Mediterranean to the ATLANTIC.
6. TRANSITION from FEUPALISM to CAPITALISM.

All topics cover a wide spectrum of History. Students OUTCOME of this Entire Generic Course will enable hopefully to comprehend, amalgamate and assimilate History as a well-balanced subject to make them compatible in practical field of various jobs, especially in schools, colleges, competitive Exams. – in the field of U.P.S.C. Exam., Archival Museums and so on.

Department : Bengali

Subject Outcome:

‘বঙ্গভাষা ও সাহিত্য’ বিষয় বাঙালি জাতির সাহিত্য ও সংস্কৃতির সাথেই শুধু পরিচয় করায় না;পাশাপাশি বঙ্গদেশের নৃ-তাত্ত্বিক,ভূ-তাত্ত্বিক পরিচয় দেয়,বাঙালির শিকড়কে চেনায়।বাংলা ভাষার উৎস-বিবর্তন-বর্তমানের রূপ পরিগ্রহণের সাথে এর উৎসমুখ ভাষা-গঙ্গোত্রী তথা পৃথিবীর বিভিন্ন ভাষা পরিবারের পরিচিতি সহ মূল ইন্দো-ইউরোপীয় ভাষা বংশের পরিচয়ও দেয় এই পাঠ।তাছাড়া সাহিত্যচর্চা মানব মনের সৃজনশীল সত্তার পরিচায়ক; সেদিক থেকেও বাংলা ভাষা ও সাহিত্য পাঠের আলাদা গুরুত্ব রয়েছে।সমালোচকমাত্রই মেনে নেবেন,সুদূর মধ্যযুগ থেকে ব্রিটিশ অধীনস্থ পরাধীন ভারতবর্ষে হিত্য-সংস্কৃতি সহ একাধিক চর্চায় বাঙালি কবি-সাহিত্যিক-মণীষী প্রতিনিধিত্ব করে এসেছেন।সেই ধারায় বর্তমানে পলি জমে আসলেও স্তিমিত হয়ে যায়নি।স্বাভাবিকভাবে মধ্যযুগের কৃত্তিবাস-কাশীরাম,চণ্ডীদাস-জ্ঞানদাস-গোবিন্দদাস থেকে শুরু করে উনিশ-বিশ শতকের শ্রেষ্ঠ সাহিত্যব্যক্তিত্ব রবীন্দ্রনাথ ও অন্যান্যদের সাহিত্য ফসল,জীবনদর্শন জানতে- বুঝতে-অনুধাবন করতে বাংলা সাহিত্যের দ্বারস্থ হতেই হয়।মনে রাখতে হবে উনিশ-বিশ শতকে বঙ্গদেশ যেমন সমগ্র ভারতবর্ষের হয়ে অগ্রণী প্রতিনিধিত্বের ভূমিকা নিয়েছিল;তেমনই বাংলা সাহিত্য চর্চা বিশ্বের দরবারে ভারতবর্ষকে শ্রেষ্ঠ আসনে অধিষ্ঠিত করেছিল।

উল্লেখিত বিষয় ছাড়াও স্নাতক ও স্নাতকোত্তর পর্যায়ে বাংলা ভাষা ও সাহিত্য বিষয় নিয়ে পড়াশোনা করার আলাদা ব্যবহারিক গুরুত্বের কথা অস্বীকার করা যায় না।পশ্চিমবঙ্গ-ত্রিপুরার অধিকাংশের মুখের ভাষাতো বটেই,পাশাপাশি তিবেশী অসম (শিলচর),ঝাড়খণ্ডের কিছু অংশের মানুষজনের মাতৃভাষাও বাংলা।সুতরাং মাতৃভাষা সম্পর্কে সামগ্রিক জ্ঞান অর্জন করতে বাংলা ভাষা ও সাহিত্য নিয়ে পড়াশোনা আবশ্যক হয়ে পড়ে।কাজের জগতে প্রাথমিক থেকে মাধ্যমিক- উচ্চমাধ্যমিক-কলেজ-বিশ্ববিদ্যালয় পর্যন্ত বিষয় হিসাবে বাংলার গুরুত্ব অনস্বীকার্য।এ রাজ্যে তো বটেই প্রতিবেশী ত্রিপুরার সরকারী বা সরকার পোষিত শিক্ষা-প্রতিষ্ঠানে উচ্চ-মাধ্যমিক স্তর পর্যন্ত বাংলা আবশ্যিক বিষয় হিসাবে পড়তেই হয়।কলেজ স্তরে রয়েছে সাম্মানিক বাংলা পড়াশোনার সুযোগ।রয়েছে সাধারণ(জেনারেল) বিষয় নিয়ে বাংলা পড়ার অবকাশ।বিশ্ববিদ্যালয় স্তরে পিজিতে বাংলা নিয়ে পড়াশোনা করে এম.ফিল,পি.এইচ.ডির উচ্চতর শিক্ষালাভ করার সুযোগ রয়েছে।বাংলা বিষয় নিয়ে পড়াশোনা করে বি.এড./ডি.এড. প্রশিক্ষণ অন্তে কর্মক্ষেত্রে প্রাথমিক থেকে উচ্চ-মাধ্যমিক স্কুল পর্যন্ত শিক্ষক হওয়ার পর্যাপ্ত সুযোগ রয়েছে।রয়েছে নেট/সেট পরীক্ষায় উত্তীর্ণ হয়ে ফেলোসিপ নিয়ে গবেষণার বা কলেজ-বিশ্ববিদ্যালয়ে অধ্যাপনা করার সুযোগ।সর্ব ভারতীয় স্তরে বা পশ্চিমবঙ্গ সিভিল সার্ভিস পরীক্ষায় মেন বা অপশনাল বিষয় হিসাবে বাংলা নেওয়ার ক্ষেত্রে বাংলা বিষয়ে গভীর পড়াশোনা ও দক্ষতা থাকা দরকার হয়ে পড়ে।তাছাড়া বাংলা বিষয় নিয়ে পড়াশোনা করে সংবাদ পাঠক/পাঠিকা হিসাবে কাজ পাওয়ার সুযোগ রয়েছে।রয়েছে দ্বি-ভাষিক হিসাবে কাজ করার সুযোগ।প্রকাশনা জগতেও কাজের প্রচুর সুযোগ থেকে যায় বাংলা সাহিত্যের পড়ুয়াদের।রাজ্য স্তরে যে-কোনো চাকুরীর ক্ষেত্রে ভাষা পত্র হিসাবে বাংলা থাকায় এই বিষয়ে কলেজ-বিশ্ববিদ্যালয়ে পড়াশোনা করার আলাদা গুরুত্ব থেকেই যায়।সুতরাং শুধুমাত্র মানবিক বিদ্যা হিসাবেই নয়; কাজের জগতে ব্যবহারিক-প্রায়োগিক ক্ষেত্রেও বাংলা ভাষা ও সাহিত্য নিয়ে পড়াশোনা করার আলাদা মর্যাদা থেকেই যায়।

Subject Specific Outcome:

সাহিত্য সমাজ ও জাতির দর্পণ,জীবনের প্রতিচ্ছবি।সমাজ ও জাতির হৃদস্পন্দনে,আবেগ-অনুভূতি ও উন্মাদনায় সবেগে বর্তমান ভাষা ও সাহিত্য।বাংলা সাহিত্যও তার ব্যতিক্রম নয়।নদীমাতৃক সবুজ বঙ্গদেশের মতই এই বঙ্গ ভাষা মধুর।পৃথিবীর অন্যতম শ্রেষ্ঠ এই ভাষা প্রতিবেশী বাংলাদেশেরও রাষ্ট্রভাষা।গত উনিশ-বিশ শতকে বাংলা সাহিত্যই জগত সভায় ভারতরাষ্ট্রের আন্তর্জাতিক প্রতিনিধিত্ব করেছে।মহান ভাষা আন্দোলনের শহীদের রক্ত ঝরা আবেগের দিনগুলি এই ভাষাকে ঘিরেই।হাজার বছরের ঐতিহ্যশালী এই ভাষার গৌরবোজ্জ্বল অতীত যেমন ছিল,তেমনই রয়েছে বহমান বর্তমান ও সম্ভাবনাময় ভবিষ্যত।তাই সমগ্র বঙ্গদেশ ও বাঙালি জাতির অতীত-বর্তমানের পরিচয় লাভের জন্য বাংলা সাহিত্যপাঠ একান্ত জরুরী।

Course Outcomes:

Semester	Course Code	Course Outcomes
SEM-1	BNG-A-CC-1-1-TH বাংলা সাহিত্যের ইতিহাস(১৮০০ খ্রিঃ পর্যন্ত)	বাংলা ভাষা ও সাহিত্যের উদ্ভবের সময়কাল থেকে ১৮০০ খ্রিঃ পর্যন্ত বাংলা সাহিত্যের বিভিন্ন ধারার সঙ্গে শিক্ষার্থীদের পরিচিতি করানো এই পাঠের লক্ষ্য।
	BNG-A-CC-1-2-TH বর্ণনামূলক ভাষাবিজ্ঞান ও বাংলাভাষা	সাহিত্যের সাম্মানিক পর্যায়ের পড়ুয়া হিসাবে বাংলা ভাষাতত্ত্ব ও শব্দতত্ত্ব সম্পর্কে ধারণা থাকা অত্যন্ত গুরুত্বপূর্ণ।সেই উদ্দেশ্য মাথায় রেখে এই কোর্সটি তৈরি করা হয়েছে।
	BNG-G-CC/GE-1-1-TH বাংলা সাহিত্যের ইতিহাস(আধুনিক যুগ)	১৮০০ খ্রিঃ পরবর্তী সময়ে বাংলা সাহিত্যের বিভিন্ন ধারার বিবর্তনের গতিরেখার সঙ্গে শিক্ষার্থীদের পরিচিতি ঘটনো এই কোর্সের উদ্দেশ্য।
	BNG-AECC-1-1-TH MIL-BENGALI	মেজর ইণ্ডিয়ান ল্যাঙ্গুয়েজ হিসেবে সব বিভাগের পড়ুয়ারা এই কোর্সটি পাঠ করবে।
SEM-2	BNG-A-CC-2-3-TH	ঔপনিবেশিক আধুনিকতার সংস্পর্শে এসে আমাদের চিন্তা-চেতনা,জীবনমান ও সাহিত্যে যে আধুনিকতার সঞ্চার ঘটেছিল তার সঙ্গে শিক্ষার্থীদের পরিচিত করানোই এই কোর্সের উদ্দেশ্য।
	BNG-A-CC-2-4-TH	বাংলা ভাষা ও সাহিত্যের ইতিহাস সম্পর্কে প্রাথমিক জ্ঞানার্জনের পর এখানে শিক্ষার্থীরা সাহিত্যে রসাস্বাদনের সুযোগ পাবে।সাহিত্যের পাঠকে যতটা সম্ভব আনন্দদায়ক করে তোলাই এক্ষেত্রে লক্ষ্য।

	BNG-G-CC/GE-2-2-TH ঐতিহাসিক ভাষাবিজ্ঞান,ছন্দ ও অলঙ্কার	বাংলা ভাষার উদ্ভব ও বিকাশ সম্পর্কে শিক্ষার্থীকে ধারণা দেওয়া হবে।কাব্য নির্মাণের অন্যতম উপাদান হিসেবে ছন্দ ও অলঙ্কারের সংক্ষিপ্ত পাঠও এই কোর্স থেকে গ্রহণ করবে পড়ুয়ারা।
SEM-3	BNG-A-CC-3-5-TH বাংলা সাহিত্যের ইতিহাস(বিশ শতক)	এই কোর্সের মাধ্যমে বিশ শতকের বাংলা সাহিত্যের গতিপ্রকৃতি এবং স্বরূপ সম্পর্কে জ্ঞানার্জন করবে পড়ুয়ারা।
	BNG-A-CC-3-6-TH ঐতিহাসিক ভাষাবিজ্ঞান	প্রাচীন ভারতীয় আর্যভাষা থেকে আধুনিক ভারতীয় আর্যভাষা হিসেবে বাংলা ভাষার উদ্ভব ও বিকাশের প্রতিটি পর্যায়ের সাহিত্যিক নিদর্শনের সহায়তায় সেই সেই পর্যায়ের ভাষাগত বৈশিষ্ট্য সম্পর্কে শিক্ষার্থীদের ধারণা দেওয়া।
	BNG-A-CC-3-7-TH কথাসাহিত্য	উপন্যাস-ছোটগল্প কথাসাহিত্যের এই দুটি ধারা পাঠ করে আধুনিক সময়ের জটিলতা,ব্যষ্টি ও সমষ্টির দ্বন্দ্ব,বাঙালির পারিবারিক জীবনে নারীর অবস্থান,পরিবেশ সম্পর্কিত ভাবনা এবং মানুষের লড়াই-সংগ্রামের নানা প্রবণতকে শিক্ষার্থীকে পরিচিত করানোর চেষ্ঠা রয়েছে এই কোর্সে।
	BNG-G-CC/GE-3-3-TH বাংলা কাব্য-কবিতা ও নাটক	বাংলা ভাষা ও সাহিত্যের ইতিহাস এবং ছন্দ অলঙ্কার সম্পর্কে পাঠ গ্রহণের পর শিক্ষার্থীরা এই কোর্সে সাহিত্যের রস আস্বাদন করবে।বাংলা কাব্যের বিবর্তনের ধারাটিও তাদের কাছে স্পষ্ট হবে।
	BNG-A-SEC-A-3-1--TH মুদ্রণ ও প্রকাশন (সাম্মানিক ও সাধারণ উভয়ের পাঠ্য-A-3-1 & 2 থেকে যে-কোনো একটি বেছে নিতে হবে।)	বাংলা মুদ্রণ ও প্রকাশন সংক্রান্ত সাধারণ জ্ঞানার্জন করবে।
	BNG-A-SEC-A-3-2--TH ব্যবহারিক বাংলা -১ (সাম্মানিক ও সাধারণ উভয়ের পাঠ্য-A-3-1 & 2 থেকে যে-কোনো একটি বেছে নিতে হবে।)	পরবর্তী জীবনে পেশা হিসেবে যে-সব পড়ুয়া নাটক অথবা সিনেমা-সিরিয়ালকে কিংবা আবৃত্তি শিল্পকে গ্রহণ করতে চাইবে,তারা ঐ সব বিষয়ের প্রাথমিক ধ্যানধারণা পাবে এই কোর্স থেকে।

SEM-4	BNG-A-CC-4-8-TH প্রাগাধুনিক সাহিত্য	প্রাগাধুনিক সাহিত্যের এই কোর্সটির মাধ্যমে শিক্ষার্থীরা সাহিত্যের রসাস্বাদনের পাশাপাশি যাতে বাঙালির সমাজ ও ধর্ম-সংস্কৃতির বিবর্তনের গতিরেখাটিকেও অনুধাবন করতে পারে সেদিকে লক্ষ্য রাখা হয়েছে।
	BNG-A-CC-4-9-TH ছন্দ-অলঙ্কার ও কাব্যতত্ত্ব	সাহিত্যের শিক্ষার্থীদের ছন্দ,অলঙ্কার ও কাব্যতত্ত্ব বিষয়ে তত্ত্বজ্ঞান থাকা প্রয়োজন।এই কোর্স শিক্ষার্থীদের কাব্য-কবিতা পাঠকে গভীরতর করবে।
	BNG-A-CC-4-10-TH প্রবন্ধ ও বিবিধ রচনা	বাংলা প্রবন্ধে দার্শনিকতা বা চিন্তার প্রসার ঘটেছে উনিশ শতকের মধ্যভাগ থেকেই।সমাজ,রাষ্ট্র,শিক্ষা,বিজ্ঞান,ভাষা,সাহিত্য,ধর্ম,দর্শন-নানা বিষয়েই বাঙালি চিন্তকগণ প্রবন্ধের মাধ্যমে তাঁদের ভাবনাকে ব্যক্ত করেছেন।রবীন্দ্রনাথের ছিন্নপত্রেও বিশ্ববোধের এক অনন্য রূপ ব্যক্ত হয়েছে।এই কোর্সটির মাধ্যমে শিক্ষার্থীরা সমাজ ও সাহিত্য সম্পর্কিত বিচিত্র বিষয়ে সমৃদ্ধ হতে পারবে।
	BNG-G-CC/GE-4-4-TH বাংলা কথাসাহিত্য ও প্রবন্ধ	এই কোর্সে বাংলা কথাসাহিত্য এবং প্রবন্ধ সাহিত্যের পাঠ দান করা হবে।
	BNG-A-SEC-B-4-1--TH ব্যবহারিক বাংলা ও সাহিত্য গবেষণার পদ্ধতিবিজ্ঞান (সাম্মানিক ও সাধারণ উভয়ের পাঠ্য-B-4-1 & 2 থেকে যে-কোনো একটি বেছে নিতে হবে।)	শিক্ষার্থীদের জীবনের নানা প্রয়োজনকে সুষ্ঠভাবে এবং নিয়মমাফিক সমাধা করতে সহায়তা করবে এই কোর্সটি।
	BNG-A-SEC-B-4-2--TH ব্যবহারিক বাংলা -২ (সাম্মানিক ও সাধারণ উভয়ের পাঠ্য-B-4-1 & 2 থেকে যে-কোনো একটি বেছে নিতে হবে।)	যে-সব সাহিত্যরূপ পড়ুয়ারা পড়ছে/পড়েছে তা কীভাবে নির্মাণ হয়ে ওঠে,তার কলাকৌশলগুলি সম্পর্কে এখানে হাতে কলমে তাদের ধারণা দেওয়া হবে।তার সাথে বানান এবং IPA রোমীয় লিপি সংক্রান্ত ব্যবহারিক জ্ঞানও দিতে চাওয়া হয়েছে এই কোর্সে।

	BNG-G-LCC(2)-4-1 বাংলা ভাষা বিজ্ঞান,সাহিত্যের রূপভেদ ও কাব্য	বি.এ. সাধারণ বিভাগের পড়ুয়াদের জন্য এই কোর্সটিতে বাংলা ভাষাতত্ত্ব,সাহিত্যের রূপভেদের পাশাপাশি মধুসূদন দত্তের কাব্যপাঠের মধ্য দিয়ে শিক্ষার্থীদের ভাষা এবং সাহিত্য সম্পর্কে প্রাথমিক ধারণা তৈরি হবে।

SEM-5	BNG-A-CC-5-11-TH সাহিত্যের রূপ ও রীতি	সাহিত্যের রূপবৈচিত্র্য ও গঠনরীতি সম্পর্কে এই কোর্সে ধারণা প্রদান করা হবে।সাহিত্যের বিভিন্ন সংরূপের রূপ ও আঙ্গিক সম্পর্কে জ্ঞানার্জনের পাশাপাশি শিক্ষার্থীরা সাহিত্যের বিবর্তন সম্পর্কেও ধারণা লাভ করতে পারবে।
	BNG-A-CC-5-12-TH নাটক ও নাট্যমঞ্চ	নাটক ও নাটকের বিকাশ পরস্পরের সাপেক্ষ ও পরিপূরক।সামাজিক বাস্তবতার দর্পণ হিসেবে নাট্যসাহিত্য পাঠের পাশাপাশি পড়ুয়ারা নাট্যমঞ্চের বিকাশকেও বিবেচনার মধ্যে রাখবে-এই উদ্দেশ্যে কোর্সটি করা হয়েছে।
	BNG-A-DSE-A-5-1-TH বাংলার সমাজ ও সংস্কৃতির ইতিহাস	বাংলা ভাষার উদ্ভবের সময়কাল থেকে আধুনিক কাল পর্যন্ত বাঙালি জাতির সাংস্কৃতিক বিকাশের গতিরেখার সঙ্গে শিক্ষার্থীদের পরিচয় করানোই এই কোর্সের উদ্দেশ্য।
	BNG-A-DSE-A-5-2-TH বাংলাদেশের সাহিত্য	দেশভাগের পর পূর্ববঙ্গ তথা বাংলাদেশে বাংলা সাহিত্যের এক সমৃদ্ধ ধারা গড়ে উঠেছে।বাংলা সাহিত্যের পাঠ বাংলাদেশের সাহিত্য ব্যতিরেকে সম্পূর্ণতা লাভ করতে পারে না,সেই ভাবনা থেকেই এই কোর্সটির পরিকল্পনা করা হয়েছে।
	BNG-A-DSE-B-5-1-TH বাংলা শিশু-কিশোর সাহিত্য	বাংলা শিশু-কিশোর সাহিত্যের সুগভীর ঐতিহ্য রয়েছে।সেখান থেকে কিছু নির্বাচিত পাঠকে এখানে পড়ুয়ারা বিদ্যায়তনিক পাঠ-শৃঙ্খলায় অধ্যয়ন করতে শিখবে।
	BNG-A-DSE-B-5-2-TH দেশভাগ ও বাংলা সাহিত্য	বাঙালি জাতির ইতিহাসে দেশভাগের একটি গভীরমূল এবং সুদূরপ্রসারী অভিঘাত রয়েছে।দেশভাগকে ঘিরে বাঙালির সামূহিক এবং ব্যক্তিক বিপন্নতা,বিপর্যয় এবং অসহায়ত্বের সাক্ষ্যবাহী নির্বাচিত কিছু সাহিত্যকে এখানে পাঠ্য করা হয়েছে।

	(সাম্মানিক শিক্ষার্থীরা A ও B থেকে একটি করে দুটি কোর্স বেছে নেবে।)	
SEM-6	BNG-A-CC-6-13-TH আধুনিক বাংলা কাব্য-কবিতা	ঔপনিবেশিক আধুনিকতার সংস্পর্শে এসে আমাদের কাব্যে যে নবযুগের সঞ্চার হয়েছিল,তার বিভিন্ন পর্বকে পড়ুয়ারা অনুধাবন করতে পারবে এই কোর্সটির মাধ্যমে।
	BNG-A-CC-6-14-TH সংস্কৃত,ইংরেজি ও প্রতিবেশী(হিন্দী) সাহিত্যের ইতিহাস	বাংলা সাহিত্যের সামগ্রিক পরিচয় পাওয়ার পর শিক্ষার্থী সংস্কৃত,ইংরেজি এবং প্রতিবেশী(হিন্দী) সাহিত্যের ইতিহাস সম্পর্কে প্রাথমিক পরিচয় লাভ করবে এবং সেই আলোকে বাংলা সাহিত্য সম্পর্কেও তার মূল্যায়ন আরো স্বচ্ছ হয়ে উঠবে।
	BNG-A-DSE-A-6-3-TH বাংলা গোয়েন্দা সাহিত্য,কল্পবিজ্ঞান আশ্রয়ী রচনা এবং অলৌকিক কাহিনি	সাহিত্যের পাঠ এবং আস্বাদনে কিশোরদের অভ্যাস তৈরি হয়ে ওঠে গোয়েন্দা গল্প,কল্পবিজ্ঞান কাহিনি অথবা ভূতের গল্পের মধ্য দিয়ে।তাদের চেনা ক্ষেত্রকেই পড়ুয়ারা এখানে বিদ্যায়তনিক পাঠ শৃঙ্খলায় অধ্যয়ন করতে শিখবে।
	BNG-A-DSE-A-6-4-TH তুলনামূলক সাহিত্য	এই কোর্সে ধ্রুপদি সাহিত্যের সঙ্গের আধুনিক সাহিত্যের অথবা এই পর্যায়েরই বিভিন্ন ভাষায় লেখা সাহিত্যের তুলনামূলক পাঠ করা হয়ে থাকে।
	BNG-A-DSE-B-6-3-TH চরিত সাহিত্য,আত্মচরিত ও ভ্রমণ সাহিত্য	জীবনী,আত্মজীবনী পাঠের মধ্য দিয়ে পড়ুয়ারা ব্যক্তি চৈতন্যদেব কিংবা ব্যক্তি রবীন্দ্রনাথকে যেমন চিনবে তেমনই তাঁদের সময়কালের ধারণাটিকে আয়ত্ত করতে পারবে।সুখপাঠ্য দেশে-বিদেশে পাঠের মধ্য দিয়েও ব্যক্তি মুজতবা আলি এবং তাঁর বিচিত্র জীবন অভিজ্ঞতার সাথে পরিচিত হবে পড়ুয়ারা।
	BNG-A-DSE-B-6-4-TH লোকসংস্কৃতি ও লোকসাহিত্য (সাম্মানিক শিক্ষার্থীরা A ও B থেকে একটি করে দুটি কোর্স বেছে নেবে।)	বাঙালি এবং তার সংস্কৃতিকে জানতে গেলে আমাদের লোকসংস্কৃতি ও লোকসাহিত্যে পাঠ নেওয়া খুবই জরুরি।বাংলার সমৃদ্ধ লোক-ঐতিহ্যের থেকে নির্বাচিত কয়েকটি প্রসঙ্গই এখানে পড়ুয়াদের চর্চার জন্য রাখা হয়েছে।

	BNG-G-LCC(2)-6-2 সাময়িক পত্র ও কথাসাহিত্য	এই কোর্সে আধুনিক বাঙালির চিন্তা চেতনার বাহক হিসেবে বাংলা সাময়িক পত্রের ভূমিকার কথা জানার পাশাপাশি পড়ুয়ারা উপন্যাস ও ছোটগল্পের রসাস্বাদন করতে পারবে।

Department: Urdu

Urdu Course Outcomes:

Semester	Paper & Course Code	Subject Outcomes
SEM - 1	Urdu Zaban o Adab ki Tareekh CC - 1	Upon the completion of the course students are expected to have learnt about the origin, evolution and development of the Urdu language and literature. The students would accumulate knowledge to elaborate the linguistic qualities of Daccani & Shumali Hind language and literature. They will recite prose and poetry.They can also explain the importance of their culture. The students will elucidate the linguistic literary cultural and moral values of Urdu Dastan. The students are expected to have learnt about the contribution and impact of Sir Syed Ahmed Khan in Urdu literature as well print media and Modern Education. They can also explain the importance and impact of Dabistan e Delhi and Dabistan e lucknow origin and development in the Urdu literature.
	Classiki Ghazal Cc - 2	Introduction of Urdu ghazal poetics. Knowledge of the origin and development of Urdu ghazal. Salient features of Delhi school and Lucknow school of poetry and discuss the merits of both schools. Introduction of the progressive Urdu ghazal, Mordern Urdu ghazal and post modern Urdu ghazal . Critical analysis of the selected text of established and famous poets of Urdu ghazal like Meer, Ghalib, Momim, Atish, Insah, Nasik,Jurat etc.
	Urdu Zaban o Adab ki Mukhtasar Tareekh GE1	After the completion of this course the students shall be able to explain the importance, origin and development of the Urdu language and literature. Demonstrate knowledge of the history of the Urdu language and literature its major periods, genres and literary theories. Demonstrate critical and analytical skill in the evaluation of literary text. They can explain the importance of Deccani and Shumali hind prose and poetry of Urdu literature and culture. The students will appreciate the classical, Modern, and post Modern genres of Urdu poetry.

		They have expected to have knowledge about the recognition of different literary movement of the Urdu literature.
	Urdu Nazm o Nasr **AECC**	Introduction of Urdu ghazal and Urdu Nazm and poetics. Critical analysis of the selected text of the renowned poets of Urdu ghazal and Urdu Nazm like Meer, Ghalib, Momim, Iqbal, Makhdoom and Faiz. Literary and moral values of Fort William College in the Urdu literature and language as well Dastan in the college. Sir Syed contribution in Urdu Jouranalism and literature. The students are expected to learnt short stories and analyze the literary text. Understanding of important qualities of letter writing of Mirza Ghalib.
Semester -2	**Qasida Aur Marsiya** **CC -3**	The Students will appreciate the classical genres of urdu poetry i.e, qasida and Marsiya . They will elucidate customs, traditions and other aspects of culture and civilization of Delhi and lucknow.
	Masnavi, Nazm Aur Rubai **CC -4**	Upon the completion of the course students are expected to have learnt about the poetry i.e, Masnavi, poem and Rubai. They can understand , appreciate and analyzed the literary text as well as famous poets like Meer, Meer Hasan, Nazir , Iqbal, Anis, amjed and Farag etc.
	Ghazal **GE 2**	Introduction of Urdu Ghazal poetics. Knowledge of the origin and advancement of urdu ghazal. Sailent features of Delhi school and Lucknow School of poetry. Critical analysis of the selected text of established and famous poets of urdu ghazal like Meer, Ghalib, Iqbal, Faiz etc.
Semester - 3	**Dastan Aur Novel** **CC -5**	The students will elucidate the linguistic literary cultural and moral values of urdu dastan. Study of the novel make awre about the culture, society and socio-political scenario of that particular era, in which it was written. Novel gives us wisdom about the different dimension and problem of different classes of the society.
	Afsana Aur Drama	Short story is the most popular genres of Urdu fiction. It can discuss any problem of society.

	CC -6	Students can learn various types of short stories like progressive story, Mini story and Modern story etc. And analyze the literary text. The students will be able to appreciate drama and throw light on the development of Urdu drama in western countries and in India.
	Makateeb, Sawaneh Aur Khakey **CC -7**	Upon the completion of the course students are expected to learnt about linguistic literary culture and moral values of Ghalib, Abu kalam Azad letter writing in the Urdu literature. They can also accumulate knowledge to elaborate the biography and Sketch Writing in the Urdu literature.
	Urdu Adab Aur Hindustani Film **SEC A2**	After completion of this course , students will be able to know the art and technique of cinema, evolution of Indian Cinema and role of Urdu poets and writers in the development and promotion of Hindi Films. They will also know about the films made on the Urdu fiction and contributions of Urdu writers and poets towards scripts writing, songs writing, Dialogue and screenplay writing.
	Nazm **GE3**	Upon the completion of the course students are expected to have learnt about the poem/verse (genre of poet) and types of verse like Blank verse, Free verse etc and understand, appreciate and analyzed the literary text.
	Dastan Aur Novel **GE4**	The students will elucidate the linguistic literary , cultural and moral value of Urdu Dastan (Romance) . The students will explain the old Indian stories of puranas , jataka etc.
	Urdu mein awami Zarae Iblagh **SEC A1**	At the end of this course, students will be able to know the history of print and Electronic Media in India. Its evaluation and changing facets. Apart from this they will be able to understand the role and importance of page making, writing and Editing News and its other technical parts.
	Inshaiya, Maqalaat Aur Sahafat	After the completion of the course , students will be able to appreciate Humour writing throw light on the advancement of humour writing in western countries and in Indian also.

Semester - 4	**CC -8**	They can also learn the literary importance of Articles writing .Its enriches the vocabulary and diction of the learner. Journalism course is designed to provide overall and in depth knowledge about the journalism to the student. It provides students with an opportunity to critically explore the ways in which world of communications operate in international and national contexts. They can also learn and skills so that student an work in the field of print, Electronic and mass media.
	Naiee, Taraqqi Pasand Aur Jadid Ghazal **CC -9**	Upon the completion of the course, students accumulate the knowledge of the progressive Urdu Ghazal and Modern Urdu Ghazal and critical analysis of the selected text of established and famous poets of Urdu Ghazal like Hali, Iqbal , Yagana, Farag, Hasrat etc. They can also learn critical analaysis of the text of established of Urdu ghazal after 1980.
	Taraqqi pasand Aur Jadid Nazm **CC -10**	Upon the completion of the course, students are expected to have learnt the system and structure of progressive Urdu poem and Modern Urdu poem and the importance of Pro gressive and Modern role of marginalized and have knots in the building of inclusive society as Faiz, Parvez, Mukhdoom, Meraji and Nida Fazili poems are of the best manisfestation and analyze the literary text.
	Urdu Sahafat **SEC B1**	Journalism course is designed to provide overall and in depth knowledge about the journalism to the student. It provides students with an opportunity to critically explore the ways in which world of communications operate in international and national contexts. They can also learn and skills so that student can work in the field of print, Electronic and mass media. Student will develop communication skills, appreciation for creativity, critical thinking and analytical approach.
	Jadid Shairi **LCC2**	After the completion of the course, are expected to have learnt about the poetry i.e, Modern poetry. They can understand the modern poetry history, problem & possibilities and appreciate and analyzed the literary text and famous poets like Akhtar ul Iman , Sheheryaar, Nasir Qazmi and Irfan siddique etc.

Department: Political Science

Programme Outcome

Choice Based Credit System (CBCS):

The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising core, elective or skill based courses. The coursesare evaluated by following the grading system. Therefore, it is necessary to introduce uniform grading system in the entire higher education in India. In order to bring uniformity in evaluation system and computation of the Cumulative Grade PointAverage (CGPA) based on student's performance in examinations, the UGC has formulated the guidelines to be followed.

Outline of Choice Based Credit System

- Each coursecarries 80 marks--- theoretical and tutorial (plus 10 mark each for Attendance andInternal Assessment).
- Six credit course: Minimum 30 classes for Theory and 15 contact hours for Tutorial per module. 2 credit course: 30 teaching/lecture hours in total.
- Core, Discipline Specific Elective (DSE) General Elective (GE) Course: 6 credits (5 Theoretical + 1 Tutorial-related).
- Skill Enhancement/Skill-based Courses: 2 credits (no Tutorial).

Programme Specific outcome of Political Science

After graduation the student will be able to understand

- ❖ The contribution of the main traditions of western political theories along with the contribution of different political thinkers.
- ❖ Acquaint with the diverse political systems with special reference to USA, UK and PRC along with salient features of France, Switzerland and Bangladesh.
- ❖ Understand the processes and dynamics of Indian government and politics. It alsofamiliarize with the vital contemporary emerging issues of centre-state relation, politicalparties, emergence of new leadership at different levels of local governance, election commission and electoral reforms along with different social and political movements.
- ❖ Familiarize with important theories and issues of international relations.Acquaints with the origin and growth of International Relations (IR) as an academicdiscipline, meaning and different approaches to International Relations.
- ❖ An understanding the evolution, development and trends of India's foreign policy.

Course Specific Outcome

1. **Introduction to Political Theory (Code: PLS-G-CC-1-1-TH+TU)**

- Module I Covers the different approaches like Normative, Behavioural, Post-Behavioural,Marxist, Feminist to political science and different theories of state including Gandhi. It will also help understand the relevant key concepts like sovereignty, right, liberty, equality, law, fascism, democracy, nationalism,and internationalism.
- Module II covers Marx's Dialectical and Historical Materialism, Class and Class Struggle, and Lenin's Theory of Revolution, Theory of Imperialism. Significant concepts like fascism, political parties and interest groups and methods of representation.

2. **Comparative Government and Politics (Code: PLS-G-CC-2-2-TH+TU)**

- Module I points out the existing political systems and the different forms of government. It mentions the basic features of the government of UK and US political systems..It also includes Glimpses of the background of the US constitution, federal features, and judicial review. In the UK context its deals with importance of rule of law and conventions, parliamentary supremacy, role of the crown and its basic structure.

- Module includes the 1982 constitution ofPRC with special reference to revolution Basic and basic features with special reference toCommunist Party are also included. It also includes the salient features of the constitutions of Bangladesh, France, and Switzerland.

3. **Government and Politics in India (Code: PLS-G-CC-3-3-TH+TU)**

- Module I covers the preamble, fundamental rights, and directive principles of state policy,fundamental duties and amendment procedure**.**It delineates the structure of government namely executive, legislature and judiciary by pinpointing the role of President, Vice-President, Prime Minister, Functions, law making procedure, privileges, committee system at the legislative level and judicial activism constitutional amendment procedures at the judicial level.

- Module II covers council of Ministers, Governor; Council of Ministers, the Chief Minister at the executive level along with local government that includes the Panchayat System and the Municipality. It highlights the political parties, electoral process and voting behavior. It also deals with 73rd and 74th amendment, centre state relations, centre state conflicts, regionalism and birth and nature of different social and political movements.

4. **International Relations Code (PLS-G-CC-4-4-TH+TU)**
    - ❖ Module I acquaintus with the scope and approaches of International Relations (IR) as an academic discipline. It includes different theories of IR. The realist theories like the Classical Realism of Hans Morgenthau and Neo-Realism Kenneth Waltz and other theories like Neo-Liberalism of Robert O. Keohane and Joseph Nye. TheStructural Approaches like World Systems Approach of Immanuel Wallerstein and Dependency School of Andre Gunder Frank and Feminist Perspective J. Ann Tickner.

    - ❖ Module II covers the history of IR and highlights the great power system with the help of second world war and the originsof the cold war and the post cold war era with emerging power centers EC, China, Russia, Japan and India's policy of Non alignment Movement.

5. **Indian Foreign Policy(Code PLS-G-DSE-A-5-1B-TH+TU)**
    - ❖ Module I pinpoints the origin and evolution of India's foreign policy, determinants of Indianforeign policy, non-alignment in India's foreign policy with national Interest as key concept in foreign policy.

    - ❖ Module II outlines India's approach to major instruments of foreign policy i.e., diplomacy, propaganda, and military. It points out India-Pakistan, Indo-Bangladesh, and Indo-Nepal and Indo-Sri Lanka relations.

6. **Human Rights: Theory and Indian Context (Code: PLS-G-DSE-B-6-2B-TH+TU)**
    - ❖ Module I portrays the idea, definition and evolution of Human Rights. It deals with theprovisions and significanceUniversal Declaration of Human Rights. It also includes charters, the UN Human Rights Commission and Vienna Declaration along with the programme ofAction.

    - ❖ It also points out the India's perspectives of Human Rights on the basis of its constitution. It also includes the structure and functions of state and national level Human Rights Commission along with challenges and remedies of Human Rights in India.

7. **Legal Literacy (Code: PLS-G-SEC-3-A(1)-TH):**
    - ❖ Module I envisages the Legal Issues of Criminal Jurisdiction its history and major processes of detention, arrest, bail, search and seizure. The definition history and brief aspects of Indian Penal Code including the rights, criminal conspiracy offences related to Marriage. Personal Laws.

- Module II envisages laws on consumer rights human rights, TADA, POTA as well as issues of rights of Children and Women.

8. **Elementary Dimensions of Research (Code: PLS-G-SEC-4-B(1)-TH):**
   - Module I define the basic concepts of research like variables, propositions and hypothesis that leads to research design along with the purpose, analysis, fallacies keeping in mind the research ethics in writing a research report.
   - It specifies the sources and techniques of data collection both quantitative and qualitative. Sampling, its classification and its scales are also pinpointed. Graphic representation of data through statistical method of data analysis.

Department: Physics

Program outcome:

We provide the bachelor degree in Science. This opens up the prospect for further study in science. Besides, with a science degree, students can access few opertunity in the field of

(i) research and development, (ii) scientific analysis and investigation, (iii) product and process development, (iv)education and the media and (v) administration. With the completion of the gradutation in science, astudent becomes eligible to apply for the teaching position in secondary schools in the stream of science.

Program specific outcome:

We offer B.Sc. Honours degree in Physics. This degree opens a wide vista in the direction of science and technology. With this degree, a student can pursue Masters degree in Physics, applied physics, biotechnology etc. or can join the research under Integrated Ph.D. Scheme. Also, if the student is interested to complete his/her M.Sc. Degree, he/she can get the access of the M.Phil or Ph.D. in some advanced topics. In the 5th abd 6th Semester of the CBCS course, students will get the glipse of some advance cources, which can guide them towards their interests. For example, in the 6 th Semester, our syllabus provides an optional topic on Nano Materials and Applications. In the present day, application of nanotechnology is extremely wide-spread. The applications commonly incorporate industrial, medicinal, and energy uses. These include more durable construction materials, therapeutic drug delivery, and higher density hydrogen fuel cells that are environmentally friendly. Being that nanoparticles and nanodevices are highly versatile through modification of their physiochemical properties, they have found uses in nanoscale electronics, cancer treatments, vaccines, hydrogen fuel cells, and nanographene batteries. Therefore, all these fields become accessible to the students. Besides, the opertunity in the field of teaching is one of the finest prospects of this field. In the CBCS course, students learn the applications of computer programming language PYTHON in an elaborate manner. This will enhance their technical skill and will allow them to pursue carrier as a program developer. Also with the experimental knowledgegained during the practical classes, scope of industrial research/job will enhance.

Course Specific Outcomes:

SEMESTER-I

CC1: Mathematical Physics I

Theory: Basic idea of calculalus, vector algebra and matrices that are the basic building blocks of the subject.

Practical: Introduction to the graph plotting software GNUPLOT.

Introduction to the PYTHON code as a tool for numerical and logical analysis. Usage of the code as simple calculator.

CC2: Mechanics

Theory: Idea of Newtonian mechanics, more precisely, basic mechanical properties of macroscopic (classical) bodies, that governs our everyday life.

Practical: Handling of the length measurement tools and study their accuracy. Examine the general properties of matter like elasticity, moment of inertia etc.

SEMESTER-I I

CC 3 : Electricity and Magnetism

Theory: Classical idea of electric and magnetic fields. Electrical and magnetic properties exhibited by matter and their nature. Relation between these two fields, their application in electrical circuits.

Practical: Idea of voltage, current, resistance measuring tools. Testing the frequency, mutual inductance and several properties of an electrical circuit.

CC 4 : Waves and Optics

Theory: Classical analysis of waves. Various properties of light like diffraction, interference etc and the study of optical devices.

Practical: Various experiment with acoustic and optical devices like tuning fork, prism, spectrometer etc andstudy the properties of waves experimentally.

SEMESTER-I II

CC5: Mathematical Physics II

Theory: Solution methods for periodic functions, differential equations, some special integrals like beta andgamma functions, partial differential equations etc. Initial concept of probability.

Practical: Numerical analysis for scientific applications using the PYTHON code. Performing the integration, first order differential quations numerically. Learning to fit an experimental curve. Graph plotting using PYTHON.

CC6: Thermal Physics

Theory: Thermodynamics, which deals with the relations between heat and other forms of energy (such as mechanical, electrical, or chemical energy), and, by extension, of the relationships between all forms of energy. Behaviour and kinematics of gases are studied in this course.

Practical: Different aspect of heat and temperature are examined; foe eaxmple: thermal effect on metalic rod, thermocouple etc.

CC7: Modern Physics

Theory: Faliure of classical physics in microscopic world and the basic introduction to the concept of ‘quantum’. Application of quantum physics: inside the nucleus, principle of laser etc.

Practical: Examining planck constant, dependence of black body radiation on temperature, particle nature of waves etc.

SEC A-2: Renewable energy and Energy Harvesting

Theory: Spreading awareness regarding the energy harvesting. Several sources of renewable energy are discussed.

SEMESTER-I V

CC8: Mathematical Physics III

Theory: Idea of complex numbers, application of variational calculus in classical physics and restriction of classical physics, which leads to the idea of special theory of relativity.

Practical: Application of PYTHON in the calculation of Gaussian Integrals, delta function, special function etc.

CC9: Analog Electronics

Theory: Introduction and application of semiconductor devices. Various parts of electrical circuits are analysed.

Practical: Working knowledge of diode, transistor etc in a circuit and their activity are demonastraded.

CC10: Quantum Mechanics

Theory: Idea and development of quantum mechanics. Analysing the quantum effect in atoms. Inroduction to various quantum numbers, eigen states and eigen values, wave functions etc.

Practical: Necessary calculations for quantum mechanics using PYTHON. For example, preceedure to calculate energy eigen states, evolution of wave packet etc are demonastated with PYTHON programming.

SEC B -2: (Knowledge Skill): Electrical Circuits and Network skills

Theory: Giving the knowlegde of various electrical circuits like DC Generator, Transformer, AC motor etc.

SEMESTER- V

CC11: Electromagnetic Theory

Theory: Concept of electromagnetic radiation using classical theory. Concept of electric and magnetic field and their relation, their application.

Practical: Realising the presence of electric and magnetic component of a electromagnetic wave. Polarisation of light as a vital application of electromagnetic theory.

CC12: Statistical Physics

Theory: Elementary concept of macroscopic system, ensemble and the idea of their statistical nature. Mainlyidea of statistics in a classical system is given.

Practical: Statistics of a system using PYTHON. Using random number and other numerical methods, demonastation of the statistics of a system.

DSE A1 (b): Laser and Fiber Optics

Theory: Working principle of LASER, fibre optics etc. Introduction to non-linear optics.

DSE B1 (a): Astronomy and Astrophysics

Theory: Idea of the origin of the universe and its components. Various types of measurement procedure.

DSE B1 (b): Nuclear and Particle Physics

Theory: Exploring the nucleus and diffrent models to describe it. Idea of fundamental particles and their interactions.

SEMESTER-VI

CC13: Digital Systems and Applications

Theory: Concept of binary numbers, formation of digital systems and the application of these systems.

Practical: Concept of digital systems, for example, working proceedure of different types of logic gates are observed.

CC14: Solid State Physics

Theory: Idea of properties of solid and their internal structure.

Practical: Experimental verification of different properties of matter. For example, magnetic propertics, resistivity, temperature coefficient etc can be veryfied experimentally.

DSE A2 (a): Nano Materials and Applications

Theory:Length scales in physics and idea of nano materials. Synthesis and properties of nano materials.

DSE B2 (b): Advanced Statistical Mechanics

Theory: Idea of phase space, various applicable statistics in a quantum system.

Department:English

Programme Outcome of English Honours Course

1. Analytical and Critical thinking: Based on readings of literary texts students will be able to see patterns analyse information and language and make insightful inferences.

2. Fluency of Communication: Based on continuous study and immersion in the English language students will be enabled to articulate viewpoints both in written and spoken format.

3. Social Interaction and Communication: The study of relevant areas of literature and philosophy and other disciplines will enable students to be more culturally equipped and generate cultural capital. This shall be valuable for interaction with management and peers and other interfaces including the job market particularly for journalism and advertisement.

4. Building principles of citizenship: The students will be enabled to exercise their rights properly and carry out their duties as effective citizens of the country.

5. Formative Principles of Ethics: The students will be enabled to identify and cope with the moral and ethical issues of everyday life and install a value based ethical system as an outcome of their learning.

Programme Outcomes of Elective English Course

1. Critical thinking: Empowerment of students to think clearly and cogently.

2. Holistic Values: Making students aware of the diversity and multiplicity of approaches in education and the necessity of respecting alternative cultures.

3. Developing Writing Skills: On hand training in developing the ability to write with precision and lucidity and express one's opinion with clarity particularly in letters and essays.

Programme Outcomes of Compulsory English Course

1. Developing powers of comprehension and ability to communicate in English in spoken and written form.

2. Basic grounding in English literature and a fundamental awareness of tenets of culture.

Course Outcomes of English Honours Course:

1. Teaching history of English literature and Philology enabling them to understand the range, significance and scope of literature and the evolution of language.

2. Poetry from Old English to Modern Period making students aware of the artistic and social changes marked by the growth and development of poetry for two thousand years.

3. Drama from the Elizabethan to Modern times inculcating in students an idea of the nuances of theatre and the social and cultural ramifications of theatrical practices as they have mutated over historical time.

4. Indian Writing in English and awareness programmes for students to have a clear conception of the colonial legacy and its rewriting and dismantling by post colonial subjects in the academic disciplines.

5. Grooming of students in areas of fiction and non fictional prose writing via study of novels and essays and short stories.

Course Outcomes of Elective English Courses

1. Empowerment of students to critically understand and analyse poetry and prose across a wide range of age and context. Awareness of figures of speech with reference to specific context and relevance to everyday life.

2. Empowering students to understand features of novel, short story and drama by readings of texts and contexts in daily life.

3. A holistic idea of the distinctive features of Indian Writing in English and their texts and contexts with social and cultural resonances.

Course Outcomes of Compulsory English Course:

1. Stressing importance of language to students by rudimentary study of literary texts

2. Developing capability of self expression in English

3. Enabling writing skills that are relevant and can empower students in professional fields.

Department:Mathematics

The CBCS Course curriculum is well designed and very promising where the core course would help to enrich the subject knowledge of the students and generic electives make integration among various interdisciplinary coursers. The introduction of Skill Enhancement Courses (SEC) and Discipline Specific Courses (DSE) would help to gain more powerful knowledge not only in their core Mathematics subject but also in interrelated multidisciplinary subjects and also helps them to become familiar and expert in handling different mathematics based software after proper training. In brief the student graduated with this type of curriculum would be able to accumulate the subject knowledge along with the necessary skills to suffice their capabilities for academia, entrepreneurship and industry.

Program Outcomes:

- Students will be able to understand the foundations of mathematics.
- Students will be able to perform basic computations in higher mathematics.
- Students will be able to read and understand middle-level proofs.
- Students will be able to write and understand basic proofs of Mathematics.
- Students will be able to develop and maintain problem-solving skills.
- Students will use mathematical ideas to model real-world problems.
- Students will be able to communicate mathematical ideas with others.
- Students have experience using technology to address mathematical ideas
- Students will demonstrate the ability to communicate mathematical ideas clearly. They will use correct mathematical terminology and proper mathematical notation.

Program Specific Outcomes:

- Students will be able to write detailed solutions using appropriate mathematical language. Students will be able to identify areas in mathematics and other fields where Calculus is useful.
- students can simplify or manipulate expressions involving polynomial, rational, exponential, or logarithmic terms using appropriate properties and rules.
- Students will be able to express the existence-uniqueness theorem of differential equations, to solve first-order ordinary differential equations & solve exact differential equations. They are able to convert separable and homogeneous equations to exact differential equations by integrating factors.
- students will be able to use knowledge of partial differential equations (PDEs), modelling, the general structure of solutions, and analytic and numerical methods for solutions. formulate physical problems as PDEs using conservation laws.
- Students will learn to visualize and manipulate multivariable and vector valued functions presented in graphical, numeric, and symbolic form. Students will learn to graph, differentiate, integrate and solve applied problems involving parametric equations and vector-valued functions.
- Students will formulate theorems about the concept of probability, calculate probabilities using Conditional probability, Rule of total probability and Bayes' theorem. Students will

explain the concept of a random variable and the probability distributions, define the concept of a random variable.

- ❖ Students will be able to derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations. Students will analyse and evaluate the accuracy of common numerical methods.
- ❖ Students will be able to Study of the interaction of forces between solids in mechanical systems. Students will know about the application of the vector theorems of mechanics and interpretation of their results, Newton's laws of motion and conservation principles.

Course Outcomes:

Semester	Course Code	Course Outcomes
SEM-I	CC-1-1-TH and CC-1-1-TU Calculas	Upon successful completion of this course, students will be able to: ❖ Compute limits, derivatives, and integrals. ❖ Analyze functions using limits, derivatives, and integrals. ❖ Recognize the appropriate tools of calculus to solve applied problems.
	CC-1-1-TH and CC-1-1-TU Geometry & Vector analysis	Students will be able to ❖ Describe the various forms of equation of a plane, straight line, Sphere, Cone and Cylinder. ❖ Find the angle between planes, Bisector planes, Perpendicular distance from a point to a plane, Image of a line on a plane, Intersection of two lines. ❖ Define coplanar lines and illustrate. ❖ Compute the angle between a line and a plane, length of perpendicular from a point to a line. ❖ Define skew lines, calculate the Shortest distance between two skew lines. ❖ Find and interpret the gradient curl, divergence for a function at a given point. ❖ Interpret line, surface and volume integrals, evaluate integrals by using Green's Theorem, Stokes theorem & Gauss's Theorem.

Semester	Course Code	Course Outcomes
		students will be able to ❖ Employ De Moivre's theorem in a number of applications to solve numerical problems . ❖ Apply Cardons method (solve cubic equation) and Ferrari's method (solve Bi-quadratic equation).

SEM-I	**CC-1-2-TH and CC-1-2-TU** **Algebra**	❖ Apply the inequality to the problems of maxima and minimum. ❖ Complex functions are really helpful for understand the complex analysis. ❖ Complex numbers are used in real life applications such as electricity, and also to signal processing ,which is use full in cellular technology and wireless technologies, as well as radar and even biology(brain waves). ❖ Anyone can judge about dependency between two rows and two columns of a matrix with the help of rank. ❖ In our real life we use system of linear equations in the regards of age problem, speed related problems, wages and hourly rate problems.
SEM-II	**CC-2-3-TH and CC-2-3-TU** **Real Analysis**	This course will enable the students to : ❖ Understand many properties of the real line R and learn to define sequence in terms of functions from R to subset of R. ❖ Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence. ❖ Enumerate the limits of functions ,infinite limits and limit at infinity ❖ Demonstrate, describe, and recognize ways in which limit do not exit. ❖ Evaluate one sided limits and describe relationship between limits and one sided limits. ❖ Develop solutions for tangent and area problems using the concepts of limits, derivatives. ❖ Draw graphs of algebraic and transcendental functions considering limits continuity and differentiability at a point. ❖ Articulate the relationship between derivatives and integrals using the fundamental theorems of calculus. ❖ Predict in various cases, like where the speed in a given curve was maximum without differentiation by Rolle's theorem.

Semester	Course Code	Course Outcomes
SEM-II	**CC-2-4-TH and CC-2-4-TU Group Theory I**	The course will enable the students to: ❖ Recognize the mathematical objects called groups. ❖ Link the fundamental concepts of groups and symmetries of geometrical objects.
SEM-III	**CC-3-5-TH and CC-3-5-TU Theory of Real Functions**	❖ To enumerate the limits of functions ,infinite limits and limit at infinity ❖ To demonstrate, describe and recognize ways in which limit do not exit. ❖ To evaluate one sided limits and describe relationship between limits and one sided limits. ❖ To develop solutions for tangent and area problems using the concepts of limits, derivatives . ❖ To draw graphs of algebraic and transcendental functions considering limits continuity and differentiability at a point. ❖ To articulate the relationship between derivatives and integrals using the fundamental theorems of calculus. ❖ To predict in various cases, like where the speed in a given curve was maximum without differentiation by Rolle's theorem.
	CC-3-6-TH and CC-3-6-TU Ring Theory and Linear Algebra-I	❖ To know the fundamental concepts in ring theory such as the concepts of ideals, quotient rings, integral domains, and fields. ❖ To learn in detail about polynomial rings, fundamental properties of finite field extensions, and classification of finite fields. ❖ Ring theory has many applications to the study of geometric objects, to topology and in many cases their links to other branches of algebra are quite well understood. ❖ The polynomial ring, Homomorphism, Ideal, Integral Domain all are very important for higher study and interview. ❖ There is a fantastic relation between linear transformations and matrix representation. ❖ A student can study L.T by knowing matrix properties.
	CC-3-7-TH and CC-3-7-TU	❖ Will be able to explain the concept of differential equation.

	ODE & Multivariate Calculus-I	❖ Will be able to solve first-order ordinary differential equations. ❖ Will be able to find solution of higher order linear differential equations. ❖ Will be able to solve systems of linear differential equations. ❖ Areas of surface integrals ,flus through surfaces,and curvature. ❖ Maxima and minima, lagrange multiplier ,directional derivatives,level sets. ❖ Any of the operations of vecror calculus including gradient,divergence,and curl. ❖ Multivariate calculus can be applied to analyze deterministic systems that have multiple degrees of freedom . ❖ It is used in many fields of natural and social science and engineering to model and study high dimensional systems that exhibit deterministic behavior.
SEM-IV	**CC-4-8-TH and CC-4-8-TU** **Riemann Integration & Series of Functions**	❖ Improper Integrals are very common in probability and statistics. ❖ The Laplace transform, the Fourier transform and many special functions like Beta and Gamma are defined using improper integrals, which appear in a lot of problems and computations. ❖ By the help of uniform convergence students can conclude easily compactness, connectedness of a set.
	CC-4-9-TH and CC-4-9-TU **PDE & Multivariate Calculus-II**	students will have the knowledge and skills to: ❖ Apply a range of techniques to find solutions of standard Partial Differential Equations (PDE) ❖ Understand basic properties of standard PDE's. ❖ Demonstrate accurate and efficient use of Fourier analysis techniques and their applications in the theory of PDE's. ❖ Demonstrate capacity to model physical phenomena using PDE's (in particular using the heat and wave equations). ❖ Apply problem-solving using concepts and techniques from PDE's and Fourier analysis applied to diverse situations in physics, engineering, financial mathematics and in other mathematical contexts.

		❖ Use double, triple and line integrals in applications, including Green's Theorem, Stokes' Theorem and Divergence Theorem. ❖ Synthesize the key concepts of differential, integral and multivariate calculus.
Semester	**Course Code**	**Course Outcomes**
SEM-IV	**CC-4-10-TH and CC-4-10-TU** **Mechanics**	❖ To understand the D'alemberts principle and simple applications. ❖ To study the concept of Equations of motion and the equivalent one dimensional problem. ❖ To understand the Kepler problem and invese square law of force.
SEM-V	**CC-5-11-TH and CC-5-11-TU** **Probability & Statistics**	❖ To determine whether two events are mutually exclusive and whether two events are independent. ❖ To understand continuous probability density functions in general. ❖ To recognize the standard normal probability distribution and apply it appropriately. ❖ To recognize central limit theorem problems. ❖ To describe hypothesis testing in general and in practice. ❖ To conduct and interpret hypothesis tests for two population proportions. ❖ To discuss basic ideas of linear regression and correlation.
	DSE-B-5-1-TH and DSE-B-5-1-TU	students will have the knowledge and skills to ❖ formulate a given simplified description of a suitable real-world problem as a linear programming model in general, standard and canonical forms. ❖ sketch a graphical representation of a two-dimensional linear programming model given in general, standard or canonical form. ❖ classify a two-dimensional linear programming model by the type of its solution. ❖ solve a two-dimensional linear programming problem graphically

	Linear Programming & Game Theory	❖ use the simplex method to solve small linear programming models by hand, given a basic feasible point. ❖ The transportation model can be defined as the determination of only one commodity that is being transported from one destination to various locations. ❖ Students should be able ❖ to distinguish a game situation from a pure individual's decision problem, ❖ to explain concepts of players, strategies, payoffs, rationality, equilibrium, ❖ to describe sequential games using game trees, and to use the backward induction to solve such games.
SEM-VI	**CC-6-14-TH and CC-6-14-P** **Numerical Methods and Labs**	Students will able to ❖ Define Basic concepts of operators Δ,E, ∇ ❖ Find the difference of polynomial ❖ Solve problems using Newton forward formula and Newton backward formula. ❖ Derive Gauss's formula and Stirling formula using Newton forward formula and Newton backward formula. ❖ Find maxima and minima for differential difference equation ❖ Derive Simpson's 1/3 ,3/8 rules using trapezoidal rule ❖ Find the solution of the first order and second order equation with constant coefficient ❖ Find the summation of series finite difference techniques ❖ Find the solution of ordinary differential equation of first by Euler, Taylor and Runge-Kutta methods.
	DSE-A-6-2-TH and DSE-A-6-2-TU **Fluid Statics & Elementary**	❖ After studying fluid mechanics, students can ❖ solve hydrostatic problems. ❖ describe the physical properties of a fluid. ❖ calculate the pressure distribution for incompressible fluids. ❖ calculate the hydrostatic pressure and force on plane and curved surfaces. ❖ demonstrate the application point of hydrostatic forces on plane and curved surfaces.

	Fluid Dynamics	❖ formulate the problems on buoyancy and solve them, describe the motion of fluids. ❖ . describe the principles of motion for fluids. ❖ formulate the motion of fluid element. ❖ identify derivation of basic equations of fluid mechanics and apply ❖ identify how to derive basic equations and know the related assumptions. ❖ apply the equation of the conservation of mass. ❖ apply the equation of the conservation of momentum. ❖ apply the equation of the conservation of energy.

PHILOSOPHY

SUBJECT OUTCOMES

A study of philosophy will help students to develop critical thinking skills. It will encourage you to understand the constraints you operate within when you make certain choices or even when you decide which goals you should pursue. You will be able to think intelligently of how you live and why you live that way.

Since logic and reason are the cornerstones of philosophy, taking the time out to read books on the subject can help you become a better thinker and evolve your ability to reason. You will be able to understand the assumptions behind arguments identify fallacies in the reasoning and also form and form your own reasoned out opinion on the subject at hand.

Philosophy will make you curious. As you explore philosophy, you'll find that there are no right answers. Just when you find one answer, you'll realize that there are many other possibilities out there. The more you study, the more your view will become nuanced and your reasoning behind it will become more solid. Paradoxically, you'll also become more willing to change your viewpoint as you delve into a particular topic.

General Problem Solving Skills: The study of philosophy enhances a person's problem-solving capacities. ... Philosophy helps us express what is distinctive in our views, it enhances our ability to explain difficult material, and it helps us to eliminate ambiguities and vagueness from our writing and speech.

It helps us solve our problems -mundane or abstract, and it helps us make better decisions by developing our critical thinking (very important in the age of disinformation). But it's boring, you say. It's hard to understand, you say. As it turns out, philosophy does not have to be a big snooze-fest.

Philosophy is the main function of the orientation of a person in the world of nature and society. ... Philosophy forms the worldview of people, as it largely determines their behavior and approaches to decision-making in particular problem. Philosophy plays a significant role in solving global problems.

Whether it was introducing critical thinking, analyzing human nature, or questioning the moral compass, early philosophers asked and answered essential questions about life. Ancient philosophy is still relevant today, not only because it tells us how to think, but also what is important to think about in life.

COURSE OUTCOMES

SEMESTER - I

PHI-G-CC-1 Indian Epistemology and Metaphysics

A. Cārvāka Epistemology:

Charvaka, also called Lokayata (Sanskrit: “Worldly Ones”), a philosophical Indian school of materialists who rejected the notion of an afterworld, karma, liberation (moksha), the authority of the sacred scriptures, the Vedas, and the immortality of the self.

PHI-G-CC-1 Indian Epistemology and Metaphysics

B. Nyāya Epistemology

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

PHI-G-CC-1 Indian Epistemology and Metaphysics

C. Vaiśeṣika Metaphysics

a school of thought asserting the existence of a universe formed by a god out of atoms of earth, air, fire, and water, as well as out of space, time, ether, mind, and soul, all conceived as substances coexisting eternally with the god. According to the Vaisesika, substance as an entity possesses qualities and action. It is the inherent or material cause of an effect. The genus of substance (dravyatva) inheres in it. It is not mere conglomeration of qualities and actions.

PHI-G-CC-1 Indian Epistemology and Metaphysics

D. Advaita Metaphysics

Advaita Vedānta is one version of Vedānta. ... Advaita metaphysics help us to know about Brahman—the ultimate, transcendent and immanent God of the latter Vedas—appears as the world because of its creative energy (māyā). The world has no separate existence apart from Brahman.

SEMESTER 2

PHI-G-CC-2 Western Epistemology and Metaphysics

A. Different senses of 'Know'.

Philosophers tend to draw an important distinction between three different senses of "knowing" something: "knowing that" (knowing the truth of propositions), "knowing how" (understanding how to perform certain actions), and "knowing by acquaintance"

Concept Rationalism

Rationalism, in Western philosophy, the view that regards reason as the chief source and test of knowledge.

Concept Empiricism

In philosophy, empiricism is a theory that states that knowledge comes only or primarily from sensory experience.

PHI-G-CC-2 Western Epistemology and Metaphysics

B. Theories of the origin of Knowledge

Epistemology, the philosophical study of the nature, origin, and limits of human knowledge. The term is derived from the Greek epistēmē ("knowledge") and logos ("reason"), and accordingly the field is sometimes referred to as the theory of knowledge

PHI-G-CC-2 Western Epistemology and Metaphysics

C. Realism:

Realism, in philosophy, the viewpoint which accords to things which are known or perceived an existence or nature which is independent of whether anyone is thinking about or perceiving them.

PHI-G-CC-2 Western Epistemology and Metaphysics

D. Causality

Causation helps us to know about a relation that holds between two temporally simultaneous or successive events when the first event (the cause) brings about the other (the effect). ... Hume's definition of causation is an example of a "regularity" analysis. And rationalist philosopher defines entailment theory of causation.

SEMESTER 3

PHI-G-CC-3 Western Logic

A. Introductory topics:

An argument is a collection of statements or propositions, some of which are intended to provide support or evidence in favor of one of the others. A statement or proposition is something that can either be true or false. We usually think of a statement as a declarative sentence, or part of a sentence.

PHI-G-CC-3 Western Logic
B. Aristotelian classification of categorical propositions

The Ancient Greeks such as Aristotle identified four primary distinct types of categorical proposition and gave them standard forms (now often called A, E, I, and O). If, abstractly, the subject category is named S and the predicate category is named P, the four standard forms are:

All S are P. (A form)
No S are P. (E form)
Some S are P. (I form)
Some S are not P. (O form)

C. Categorical syllogism

A categorical syllogism is an argument consisting of exactly three categorical propositions (two premises and a conclusion**)** in which there appear a total of exactly three categorical terms, each of which is used exactly twice. ... The other premise, which links the middle and minor terms, we call the minor premise. It helps us to develop our reasoning capacity.

PHI-G-CC-3 Western Logic

D. Symbolic Logic:

Symbolic logic is useful for analyzing the theoretical limits of ideal digital computers. Symbolic logic techniques can be used to establish what functions a computer can and cannot compute (in principle, that is, with no limits on the size of memory or the amount of time available).

E. Tautology, Contradiction, Contingent statement forms.

A compound proposition that is always true for all possible truth values of the propositions is called a tautology. • A compound proposition that is always false is called a contradiction. • A proposition that is neither a tautology nor contradiction is called a contingency

PHI-G-CC-3 Western Logic

F. Mill's methods of experimental inquiry.

John Stuart Mill, in his System of Logic (Book III, Chapters 8–10), set forth and discussed five methods of experimental inquiry, calling them the method of agreement, the method of difference, the joint method of agreement and difference, the method of residues, and the method of concomitant variation.

SEMESTER 4

PHI-G-CC-4
Philosophy of Mind

A. Sensation

Sensation, in psychology, any concrete, conscious experience resulting from stimulation of a specific sense organ, sensory nerve, or sensory area in the brain. ... This double meaning has produced confusion about whether or not sensations are purely mental (as opposed to physical). Perception is the sensory experience of the world. It involves both recognizing environmental stimuli and actions in response to these stimuli. It help us to know about our own nerves system.

PHI-G-CC-4

Philosophy of Mind

B. Consciousness:

Consciousness refers to your individual awareness of your unique thoughts, memories, feelings, sensations, and environments. ... This awareness is subjective and unique to you. If you can describe something you are experiencing in words, then it is part of your consciousness.

Freud's theory of dream.

Freud believed dreams represented a disguised fulfillment of a repressed wish. He believed that studying dreams provided the easiest road to understanding of the unconscious activities of the mind. ... According to the idea that Freud proposed, the dream is considered the guardian of sleep.

PHI-G-CC-4

Philosophy of Mind

C. Memory

Memory is the ability to take in information, store it, and recall it at a later time. In psychology, memory is broken into three stages: encoding, storage, and retrieval. Stages of memory: The three stages of memory: encoding, storage, and retrieval. Problems can occur at any stage of the process.

PHI-G-CC-4

Philosophy of Mind

D. Intelligence:

Intelligence is the ability to think, to learn from experience, to solve problems, and to adapt to new situations. ... Psychologists believe that there is a construct, known as general intelligence (g), that accounts for the overall differences in intelligence among people.

SEMESTER 5

PHI-G-DSE-A

PHI-G-DSE-A

b)Social and Political Philosophy

A. Relation between Social Philosophy and Political Philosophy

Social Philosophy deals with the individual's Highest Good in the society. Political Philosophy is concerned with the welfare of individual in the State. ... Political Philosophy is the study of the relationship between individuals and society.

B. Primary Concepts: Society, Community, Association, Institution, Family.

Association is a group of persons collected together with some particular aim. It is, thus, a concrete group which can be seen; while at work. Thus, in contrary to society' Association is a concrete form of organization of human beings. ... Like community, association does not grow spontaneously.

The difference between community and association is that a community refers to a group of individuals living in the same geographical area sharing the same physical environment while sharing the same culture. Association refers to a group of people organize and work together to achieve a particular goal.

b)Social and Political Philosophy

C. Social Class and Caste

A caste system is one in which people are born into their social standing and remain in it their whole lives. It is based on fixed or rigid status distinctions, rather than economic classes per se. People are assigned roles regardless of their talents, interests, or potential.

D. Social Codes and Sanctions

A social sanction is a social reaction of approval or disapproval in response to someone's actions. Social sanctions enforce a standard of behavior that is deemed socially acceptable and this is essential for society to regulate itself and maintain order.

E. Social Changes: Marx and Gandhi.

According to Marx, social change occurs as a sequel to class struggle. The seeds of class struggle which generate change are found in the economic infra-structure of society. ... As such, class distinctions did not exist.

F. Political Ideals: Democracy

democracy as a system of government with four key elements: i) A system for choosing and replacing the government through free and fair elections; ii) Active participation of the people, as citizens, in politics and civic life; iii) Protection of the human rights of all citizens. Socialism helps us to know political, social, and economic philosophy encompassing a range of economic and social systems characterized by social ownership of the means of production and democratic control. It helps us to grow our political knowledge.

SEMESTER 6

PHI-G-DSE-B

B) Contemporary Indian Thought

iii)B.R. Ambedkar

Ambedkar's legacy as a socio-political reformer had a deep effect on modern India. ... His reputation as a scholar led to his appointment as free India's first law minister, and chairman of the committee for drafting the constitution. He passionately believed in individual freedom and criticized caste society.

B) Contemporary Indian Thought

i)Swami Vivekananda

Vivekananda is credited with contributing to a revival of modern Hinduism and inspiring nationalist consciousness during colonial rule. But he is best known for his famous 1893 speech where he introduced Hinduism to the Western world in Chicago.

Personally, I think, Swami Vivekananda should always be remembered for his inspiration to the mankind. Swami, without a doubt, the greatest source of achievement, pride and inspiration. He taught us unconditional love, reinforced the importance of giving back and taught us how to be a better person.

B) Contemporary Indian Thought

ii)M.K. Gandhi

Gandhism is a body of ideas that describes the inspiration, vision, and the life work of Mohandas Gandhi. It is particularly associated with his contributions to the idea of nonviolent resistance, sometimes also called civil resistance. The two pillars of Gandhism are truth and nonviolence. It help us to build up our good habit, behaviors.

SKILL ENHANCEMENT ELECTIVE COURSE

PHI-G-SEC-A (Any one from the following options either in Semester 3 or in Semester 5)

b) Business Ethics

3.Ethics in Management

Ethics in management refers to a company's social responsiveness. In other words, ethics in management can be defined as a set of moral principles. Principles that govern the actions of a person or a group. It is a norm of behavior that guides leaders and managers in their day-to-day actions

b) Business Ethics

1. Why Study Business Ethics?

i) Ethical Issues in business

Business ethics ensure that a certain basic level of trust exists between consumers and various forms of market participants with businesses. ... Business ethics are meant to ensure a certain level of trust between consumers and corporations, guaranteeing the public fair and equal treatment.

ii) Ethical principles in business

HONESTY. Be honest in all communications and actions. ...

INTEGRITY.

PROMISE-KEEPING.

b) Business Ethics

2. Environment and Business Ethics

Environmental ethics is the field dedicated to understanding human responsibilities with regard to the natural environment. ... As it applies to the world of business, environmental ethics is centrally concerned with the impact that a company's activities have upon the natural world.

2. Environment and Business Ethics

i) Business ethics and environmental values

In a business sense, environmental ethics is concerned with a company's responsibility to protect the environment in which it operates.
This definition resonates with the work of Reser and Bentrupperbäumer, who argue environmental values are beliefs held by individuals and societies about the significance, importance and well-being of the natural environment that inform how humans should treat the natural world.

ii) Ethics of conserving depletable resources

The primary consideration in the ethics of conservation is the concept of ownership. This question rests on the distinction of property rights and ethical rights. Strictly speaking, a country has land ownership of its resources as designated by laws. This (in itself) is not an issue unless the resources are depletable.

PHI-G-SEC-B (Any one from the following options either in Semester 4

or in Semester 6)

b)Value Education

c) Meaning and Characteristics of Peace education

Peace education promotes the knowledge, skills and attitudes to help people prevent conflict occurring, resolve conflicts peacefully, or create conditions for peace.

d) Aims and Objectives of Peace Education

Goals of peace educators include teaching students how to manage conflict without violence, respect all forms of life, and engage in social justice activities. They also strive to help students appreciate intercultural diversity, learn the skill set for peaceful engagements, and envision a future without war.

b)Value Education

a) Meaning, Characteristics, significance and objectives of Value education

Value Education is a process of increasing the overall character of a student, it also includes character development, personality development and spiritual development, it develops a sensible person with strong character and values.

It is an action that can take place in human society, during which the people are helped by others, who may be older. The purpose of values-based education is to make the student work with the right attitude and standards to face the outside world.

b)Value Education

c) Meaning and Characteristics of Peace education

Peace education promotes the knowledge, skills and attitudes to help people prevent conflict occurring, resolve conflicts peacefully, or create conditions for peace. ... Programmes exist at local, national, and international levels, and in times of peace, conflict, and post-conflict.

b)Value Education

b) Values in different contexts: Individual, Social, Cultural, Moral

and Global and Spiritual.

Values defined in Organizational Behavior as the collective conceptions of what is ... action made up of both individual and social responses and attitudes.

Program Outcomes, Program Specific Outcomes and Course Outcomes

Department of Hindi

UNDERGRADUATE SECTION
Model Reference: University of Calcutta, Syllabus for Honours (CBCS)

The CBCS Course curriculum is well designed and very promising where the core course would help to enrich the subject knowledge of the students and generic electives make integration among various interdisciplinary courses. The introduction of Skill Enhancement Courses (SEC) and Discipline Specific Courses (DSE) would help to gain more powerful knowledge in their core Hindi subject. In brief the student graduated with this type of curriculum would be able to accumulate the subject knowledge along with necessary skills to suffice their capabilities for academia, entrepreneurship and industry.

Program Outcomes:

PO1. Students will able to understand basic concept in different fields of Hindi.

PO2. Students will able to learn both the Hindi Language and literature.

PO3. They will learn the ancient poetry as well as the modern one and will have critical view about them.

PO 4. Students will be able to learn the source of Hindi literature from Apabhramsha.

PO 5. Students will be able to learn Adhunik Arya Bhasha and their dialects as well.

Program Specific Outcomes:

PSO1. They will develop the capacity to writer the creative writings of their own.

PSO2. These courses will introduce to them the new fields of Cinema, Anuvaad, vijnapan and all.

PSO 3. These courses will open various job opportunities for them as they will be trained in Hindi Language besides the Hindi literature.

PSO4. They will be acquainted with the literary movements prevalent in Hindi as well as in western world.

PSO5. They will learn the different genres relevant in contemporary Hindi Literature.

Course Outcomes:

Semester	Course Code	Course Outcomes
SEM 1	HIN-A-CC-1-1-TH (TU) Hindi Sahiya Ka Itihas Upto Reetikaal &	CO 1. To learn about the basic concept of the History of Hindi literature from 1050 AD to 1900 AD. CO 2. Gives an idea about different types of dialects of Hindi. CO 3. To get an idea of political, social and cultural history of India as well.
	HIN-A-CC-1-2-TH(TU) Hindi Sahitya ka Itias Adikaal	CO 1. To get some fundamental understanding of the concept of the Modern Hindi Literature. CO2.Togetsomeideasabout various genres especially the birth of prose in Hindi literature. CO 3. To get acquainted with various 'isms' within the field of poetry as well as prose.

Semester	Course Code	Course Outcomes
SEM 2	HIN-A-CC-2-3-TH(TU) Aadikaaleen evam Madhyakaleen Hindi Kavita	CO1. It provides an detailed information about the ancient poets. CO 2. Students will learn about the Bhakti Movement from the perspective of the poets. CO 3. They will come to know about Vidyapati, Kabir, Tulsi, Surdas, Bihari, Raskhan, Ghanananda and the like.
	HIN-A-CC-2-4-TH(TU) Adhunik Hindi Kavita, upto Chhayavaad	CO 1. To get an idea about the poetry during the time period from 1857 to 1936. CO 2. To develop a concept about the transitional period of poetry from Brajbhasha to khadiboli.
		CO 1. To get the idea of the poetry from 1936 onwards.

SEM 3	HINA-A-CC-3-5-TH(TU) Chhayavaadottar Hindi Kavita	**CO 2.** Will first learn the poets such as Kedarnath Agarwala, Nagarjuna, Ajneya, Raghuveer sahay, Makhanlaal Chaturvedi and more. **CO 3.** To get idea about the new 'isms' such as Pragativaad, Prayogavaad, New kavita etc.
Semester	**Course Code**	**Course Outcomes**
	HIN-A-CC-3-6-TH(TU) Bharatiya Kavya Shastra	**CO1.**Tostudyindetailaboutthe Ras Siddhanta, Dhvani Siddhanta, Riti Siddhanta, Alankar Siddhanta, Vakrokti Siddhanta. **CO 2.** To study the topics such as Kavya Lakshan, Kavya hetu, Kavya Prayojan. **CO3.**To learnabout the History of Hindi Poetics.

SEM 3	HIN-A-CC-3-7-TH(TU) Pashchatya Kavyashastra	CO1.Togetdetailedideaaboutthe western poetics. CO2.Itinformsaboutthe plato, Aristotle, Longinus, Wordsworth, Richards and so on. CO 3. To get detailed idea about various movements such as Modernism, Post-modernism, Classicism, Romanticism, Structuralism and so on.
	SEC - A	SEC-1. Vijnapan CO1.To get a basic idea of Vijnapan. CO2.Tolearnabout Upbhokta vargikaran, Vijnapan Srijana, Vijnapan Bhasha ki Vishishtatayein etc. SEC-2. Sahitya aur Hindi Cinema CO 1. To learn about the interrelationship between Cinema and Literature. CO2.To know short History of Hindi Cinema. CO3.Tolearn about the language of Cinema, the process of direction and production of Cinema and more.
Semester	**Course Code**	**Course Outcomes**
	HIN-A-CC-4-8-TH(TU) Bhasha Vijnan evam Hindi Bhasha	CO 1. It provides detailed idea about its definition, importance and its characteristics. CO 2. Students will learn Swanim Vijnan, Rupim, Vakya, Arth and the like. CO 3. This is helpful for knowing Rashtra Bhasha, Raaj Bhasha, Sampark Bhasha as three dimensions of Hindi language.

SEM 4	HIN-A-CC-4-9-TH(TU) Hindi Upanyas	**CO 1.** Will learn the different aspects of a novel. **CO 2.** To develop a concept about the social novels, psychoanalytical novels, historical novels, political novels and autobiographical novels. **CO 3.** To differentiate traditional novels from modern ones and understand their importance.
	HINA-A-CC-4-10-TH(TU) Hindi Kahani	**CO 1.** To get an idea about the gradual evolution of Hindi short stories. **CO 2.** Students will get acquainted with the origin of Short stories in Hindi and the prominent figures in each era. **CO 3.** They will learn the flashback method, the regional stories and dialects, the eternal love stories with a humanitarian moral, as well as the traditional ways of writing Short Stories.
Semester	Course Code	Course Outcomes

SEM 4	SEC – B	**SEC-3. Anuvaad : Siddhanta aur Pravidhi** **CO 1.** To learn about the meaning, concept and the nature of anuvaad. **CO2.To get idea about** the types of Anuvaad. **CO 3.** To learn the concept of Creative Writing. **SEC-4. Drishya-shravya Madhyam Lekhan** **CO1.**Tolearnaboutthe Smachar Lekhan. **CO 2.** Learn about Radio, Tv, Cinema. **CO3.**To Learn about their grammar and linguistic characteristics.
SEM 5	**HIN-A-CC-5-11-TH(TU) Hindi Natak evam Ekanki**	**CO 1.** Will learn the basic concepts of a Drama/play. **CO 2.** Will learn the main components of a Drama and will get acquainted with the conecept of Rangmanch, both old and new perspective. **CO 3.** They will learn Andher Nagari, Skandagupta, Aashad ka ek din, Madhavi. **CO 4.** Along with the plays they will study the one act play, Ekanki.
	HIN-A-CC-5-12-TH(TU) Hindi Nibandh evam Gadya vidhayein	**CO1.** It provides knowledge about the art of prose writing. **CO 2.** Various prominent prose writers will be introduced to them such as Ramchandra Shukla, Hazariprasad Dvivedi to name a few. **CO 3.** To get general idea about Lalita nibandh, Manovikar sambandhi nibandh and others.
Semester	**Course Code**	**Course Outcomes**

SEM 5	DSE	**DSE A-1. Lok Sahitya aur Rashtriya kavyadhara** **CO1.**Itintroducestothestudentswiththe concept of lok sankriti and lok sahitya. **CO 2.** Students will learn the Lok Bhasha and the Lok Geet as well. **CO 3.** Students will learn the poets such as Makhanlaal Chaturvedi, Maithilisharan Gupta, Dinkar, Sohanlaal Dwivedi and Balkrishna Sharma 'Naveen'. **DSE B-1. Ashmitamulak Vimarsh aur Hindi Sahitya and Chhayavaad** **CO 1. S**tudents will learn the important movements such as Dalit vimarsh, Stri vimarsh and aadivasi vimarsh. **CO 2.** To learn about the different genres related to these movements. **CO 3.** To learn about the poetry of Chhayavaad and the four pillars (poets) of it.
Semester	**Course Code**	**Course Outcomes**

SEM 6	HIN-A-CC-6-13-TH(TU) Hindi ki Sahityik Patrakarita	CO 1. Students get an idea about the definition, meaning and importance of Sahityik Patrakarita. CO2.To study about the Bhartenduyugeen, Dwivediyugeen and Chhayavaadi Sahityik Patrakarita and so on.
	HIN-A-CC-6-14-TH(TU) Prayojanmulak Hindi	CO 1. To get a vast knowledge of Prayojanmulak Hindi. CO 2. To learn about Manak Hindi, Sahityik Hindi, Samanya Hindi, Samvidhan mein Hindi etc. CO 3. To get information about Hindi Bhasha ka udbhav aur Vikas.
	DSE	DSE A-2. Pravasi Sahitya and Tulsidas CO 1. Students will learn the important figures of Pravasi Sahitya like Abhimanyu Anat, neena Paul to name a few. CO 2. To know about the Ayodhya Kand, Kavitavali, Geetavali and Vinaya Patrika.

SEM 6	DSE	**DSE B-2. Hindi Sant Kavya and Premchand** **CO 1.** To learn about the Great Saint-Poets such as Kabir, Raidas, Dadudayal, Paltudas and the like. **CO2.**Tostudythe works of Premchand such as Sevasadan, Karbala, Sahitya ka uddeshya and selected short stories.

Model Reference: University of Calcutta, Syllabus for Generic Elective Course in Hindi (CBCS)

Semester	Course Code HIN-G]	Course Outcomes
SEM 1	CC1/GE1	**CO 1.** To learn about the history of Hindi Literature. **CO 2.** To learn the Siddha, Nath, Jain and Raso kavya. **CO 3.** To learn about the Bhakti Andolan and Reetikaal. **CO 4.** To learn about Bhartendu yug and Dwivedi yug.
SEM 2	CC2/GE2	**CO 1.** To learn about Kabir, Surdas, Tulsidas, Meerabai, Raskhan, Bihari. **CO 2.** To learn the basic concept about the Madhyakaleen poetry.
SEM 3	CC3/GE3	**CO 1.** To understand the Adhunik Hindi Kavita. **CO 2.** To learn the poets such as Bhartendu, Maithilisharan Gupta, Prasad, Nirala, Ajneya and Nagarjuna.
	SEC (A)	**SEC-1. Vijnapan and Sahitya aur Hindi Cinema.** **CO1.**Togetabasicideaof Vijnapan and its aim, concept, importance and the importance of the Vijnapan's language. **CO 2.** To learn about the interrelationship between Cinema and Literature.
Semester	Course Code HIN-G]	Course Outcomes

SEM 4	CC4/GE4	**CO 1.** To learn about the novel, short stories and essays. **CO 2.** To learn the importance of prose.
		LCC 2(1). Hindi vyakaran aur sampreshan **CO 1.** To learn about the Hindi vyakaran evam rachna. **CO 2.** To get idea about the Vilom shad and muhavare as well as the sampreshan ke prakar and madhyam. **SEC-B-4. Anuvaad : Siddhanta aur Pravidhi and Drishya-shravya Madhyam** **CO1.**Tolearnaboutthe definition, meaning and nature of anuvaad.To learn about Radio lekhan and Drishya-shravya Madhyam.
SEM 5	DSE-1-5-TH(TU)	**DSE A-2. Lok Sahitya and Chhayavaad** **CO 1. S**tudents will learn the Lok Sahitya. **CO 2.** To learn about the poetry movement known as Chhayavaad.
Semester	Course Code HIN-G]	Course Outcomes

SEM 6	DSE-2-6-TH(TU)	**DSE-2-6. Rashtriya Kavyadhara and Premchand.** **CO 1.** Helps to learn about the National poetry of Hindi literature. **CO 2.** To study in detail the writings of Premchand.
	LCC2(2)-6-2-TH(TU)	**LCC 2(2)-6-2. Hindi Bhasha aur sampreshan.** **CO 1.** To learn the definition of Bhasha. **CO 2.** To learn the characteristics of Bhasha. **CO6.**To learn about Swara, Vyanjana and Vakya rachna.