SREE NARAYANA COLLEGE FOR WOMEN KOLLAM

COURSE OUTCOME (C0)
OF
POST GRADUATE & UNDER GRADUATE PROGRAMMES

DEPARTMENT OF HOME SCIENCE		
Programmes offered		**BSc Home Science**
		MSc Home Science
BSC HOME SCIENCE		
Couse code	**Course Title**	**Course Outcome**
HS1141	Research Methodology and Informatics	CO1:To study the fundamental characteristics of science as a human enterprise. CO2:To update and expand basic informatics skills. CO3:To equip the students to effectively utilize the digital knowledge resource. CO4:To review the basic concepts and functional knowledge in the field of informatics.
HS1221	Family Relations and Counselling	CO1: To equip the students with knowledge and skills in understanding people,families and community as a whole, and to understand human relation and to give necessary guidance and counselling at times of need. CO2:To enable the students to apply their knowledge and awareness of human relationships in the field of child care and development. CO3;To orient the students for adjustment in marriage and parenthood and to prepare them to take each role in their family efficiently and effectively.
HS 1341	Child Development and Welfare	CO 1: To introduce the student to the excitement and challenges of studying children (from conception to adolescence) CO2:To impart basic knowledge on the principles and pattern of growth and development in children from conception to old age. CO3:To provide scientific knowledge about child-development, behaviour and welfare, and to enable to improve the quality of life of the child family and community. CO4:To develop skills in the care and management of children. CO5:To help the students to understand childhood problems, the challenged children, their problems, special needs, care and management.
HS1342	Child Development and Welfare (Practical)	CO1:To know the activities of an anganwadi. Co:To experience the preparation of indigenous low cost toys. Co3:To frame vocational activities suitable for differently abled children.
HS1441	Resource Management	CO 1: To understand the principles of management and

		their application in the family context. CO2:To acquire scientific skills in the management of family resources. CO3:To recognize the significance of family resource management to enhance their qualityof life. CO4:To inculcate skills in identifying , creating , selecting and using available resource judiciously with emphasis on maximization and conservation
HS 1541	Housing and Interior Decoration	CO 1: To understand the elements and principles of design CO2: To understand the fundamentals of house planning CO 3: To gain basic knowledge of curtain styles, flower arrangement, furniture arrangement and furnishing the residential space
HS1542	Housing and Interior Decoration (practical)	CO1: To gain practical knowledge in interior designing . CO2: To initiate students into basic spatial planning.
HS1543	Extension Education	CO 1: To make the students aware of the rural /urban community and the developmental programmes in operation. CO2. To make them understand the principle of extension CO3. To understand the principles and procedure involved in programme Development.
HS1544	Textile Science	CO1: To gain knowledge about Textile fibers and their uses. CO2:To develop skill in understanding textiles available in the market. CO3: To give the students sound scientific theory concerning fibres, including their productin , properties and uses.
HS1545	Textile Science (Practical)	CO1: Identify the fibres, yarn and fabrics for its appropriate use. CO:2 Develop the skills of different dyeing and printing of textiles for specific use.
HS1546	Basic Food Science	CO1: Impart Knowledge regarding the composition of various food stuffs. CO2:Familiarize students with changes occurring during processing and cooking. CO3: Assess adulterants and food standards in foods CO4: List the principles that make a food product safe for consumption
HS1547	Basic Food Science(Practical)	CO1: To familiarize the students with the changes occurring to the foods as a result of cooking and processing. CO2:Enable the students to get practical knowledge in

		various applications and preparations of foods.
HS1551.1	Open Course: For Others Principles And Practice Of Counselling And Guidance	CO1:To know the need for counseling and guidance . CO: To get an idea about the types of stress and their management practices. CO3:To impart knowledge on the types,charcteristics and skills needed for counseling.
HS1551.8	Open Course: For Others Nutrition For Health	CO1: To understand the role of nutrition in health.
HS1551.	Open Course: For Others Personality And Soft Skill Development	CO1: To develop all round personalities with a mature outlook to function effectively indifferent circumstances. CO2:To develop effective communication (Spoken and written) and presentation skills. CO3:To develop self effectiveness by mastering interpersonal skills and leadership skills. CO4:To get acquainted with the need, competencies, skills and motivation of self empowerment and enhancement.
HS1641	Human Nutrition and Dietetics	CO1: Understand the components of health and fitness and the role of nutrition in these. CO2:Understand the requirements for energy and other nutrients through life cycle. CO3:To gain knowledge on the meaning and methods of nutrition education. CO4:To gain knowledge about the principles of Epidemiology, Nutritional Epidemiology and its importance in community and public health.
HS1642	Apparel Designing	CO1:To enable the students to develop skills in apparel designing and constructing Garments. CO2:To gain knowledge in fundamentals of fashion. CO3:To recognize the terms and theories related to fashion.
HS1643	Communication in Extension Education	CO1:Understand the process of communication in Home Science Education CO2. Develop skills in preparing and using audio – visual aids in extension work. CO3. Familiarize with the latest technologies in communication.
HS1644	Human Nutrition and Dietetics(Practical)	CO1:To familiarize the students with the changes occurring to the foods as a result of cooking and processing. CO2:Enable the students to get practical knowledge in various applications and preparations of foods. CO3:Enable the students to get practical knowledge into use various sensory methods for evaluating variety foods.
HS1645	Apparel Designing(Practical)	CO1: To help develop the skills in pattern making and construction CO:To gain practical knowledge in illustrating on croquis

		and illustrate details on croquis CO3:To enable the students to develop skills in apparel designing and construction
HS1646	Communication In Extension Education(Practical)	CO1: To develop skill in communication with the people in the community. CO2:To familiarize the students with extension teaching methods CO3:To prepare and use audio visual aids CO4:To prepare lesson plan and use for extension programmes.
HS1648	Project	CO1:To enable the students to understand Basic principles of Research Design CO: To enable the students develop interest in Home science research and to develop project plan. CO3: To enable the students to identify the problem of the community
HS 1661.1	Human Physiology and Food Microbiology	CO1:Enable the students to understand Structure and functions of various organs of the body. CO2:Obtain a better understanding of the principles of nutrition through the study of physiology. CO3:Understand alterations of structure and functions in various organs and systems in disease condition.

MSC HOME SCIENCE- Family Resource Management		
Programme outcome	PO1: To introduce students to resources principles and skill of management PO2: To impart knowledge on the organizational and procedural aspects of front office and housekeeping department of various institutions. PO3: To acquire knowledge on the functions of various areas in a food service institution. PO4: To construct a research design and to formulate research reports PO5: To accomplish effective communication etiquettes and manners in dealing with guests, colleagues and management. PO6: To gain knowledge on landscape gardening. PO7: To learn aesthetic skills in applying principles of interior decoration. PO8: To apply practical knowledge and skill in treating home decoration and commercial centres. PO9: To enlighten students about the duties and responsibilities of a wise consumer. PO10: To make students aware of the role of ergonomics in improving work efficiency. PO11: To impart information on the various sources of finance and also on the process of setting up small enterprise. PO12: To apply excel and SPSS in data analysis. PO13: To enable students to learn about e types and importance of furniture and furnishings. PO14: To acquaint the students with the need of energy conservation. PO15: To understand about the prevalence and extend malnutrition in India, as well as the nutritional status of the community.	
Couse code	**Course Title**	**Course Outcome**
HS 211B	ADVANCED HUMAN RESOURCE MANAGEMENT	CO1: To understand the significance and scope of management. CO2 :Toknow about the managerial functions, importance of decision making and communication. CO3: To understand about HR planning CO4: To know about recruitment and selection. CO 5: To understand about job analysis, job evaluation and job design and disciplinary procedures.
HS212B	HOSPITALITY MANAGEMENT	CO1 : To understand the type of hotel and other hospitality institutions. CO 2: To know about the structure and function of front office department. CO3: To analyse the functions of housekeeping department.
HS 213B	FOOD SERVICE MANAGEMENT	CO 1:Toknow about the types of food service establishments , their characteristic and departments in food service operation. CO 2: To understand about the organisational structure and management of food service establishment. CO 3: To know about large quantity cooking and standardisation of recipes
HS214B	RESEARCH METHODOLOGY	CO 1: To identify appropriate research problems and methodologies CO 2: To construct a research design and to formulate

		research reports CO3: To recognize the ethics in Home science research
HS 221 B	HOSPITALITY MANAGEMENT-INTERNSHIP	CO 1:To have practical experience on check in , check out procedures and other duties of front office staff. CO2: To gain insight into aspects of hospitality for guest satisfaction. CO 3: To have practical experience in the various duties of housekeeping staff.
HS222B	ADVANCED LANDSCAPE DESIGNING	CO 1:To Understand the components of landscaping. CO2:To know about the styles and types of garden. CO3:To gain insight into garden preparation and care of garden. CO4: To create an idea about plant propagation, bonsai & topiary, lawn making and ornamental plants.
HS223B	HOUSING AND INTERIOR DESIGNING	CO1: To interpolate the concepts of life space planning CO2:To understand about the types of design, elements and principles of design and colour concepts. CO3:To identify the various building materials available- its merits and demerits CO4 : To analyse about the space saving techniques, home lighting and accessories in interiors. CO 5 : To understand about the Architecture.
HS224B	HOUSING AND INTERIOR DESIGNING - PRACTICALS	CO1:To explore about the various building materials available in the market. CO2: To gain practical knowledge in interior designing . CO3: To design multi purpose furniture as well as usage of proper colours in different rooms.
HS231B	CONSUMERISM	CO 1:To identify the role of consumers in economy. CO2: To know about the consumer problems, consumer co-operatives and consumer acts. CO3: To examine the importance of consumer education CO4: To understand about adulteration hazards and its detection. CO5: To recognise the classification, objectives and importance of advertisement
HS232B	ERGONOMICS	CO1:Toknow the importance of time and motion studies and scope of ergonomics in modern society. CO2: To examine the basic principles for work station design. CO3:To recognise the anthropometry and its application CO 4: To design work environment.
HS233B	ENTREPRENEURSHIP DEVELOPMENT	CO1: To recognisecharacteristic and importance of entrepreneurship CO2: To ascertain the need for training and methods of building entrepreneurship. CO3: To know about the challenges of women entrepreneurs and the institutional support for start ups. CO4: To identify the different small scale industries and also to identify the need ,significance and objectives of project formulation.

HS234B	STATISTICS AND COMPUTER APPLICATION	CO1: To identify popular concepts in data management and statistical analysis CO2: To calculate measures of central tendency and dispersion CO3:To compute large and small sample test and interpretations CO4:To estimate parametric and non-parametric tests in data analysis CO5: To apply excel and SPSS in data analysis
HS241B	FURNITURE AND FURNISHING	CO1:To know about the history of furniture and its classification. CO2: To identify the guidelines for the selection and arrangement of furniture. CO3: To familiarize with the furniture material and finishes. CO 4: To explore the soft furnishings as well as the types of furnishings and designs.
HS242B	ENERGY AND ENVIRONMENT	CO1: To identify the dimensions of environment. CO2: To explore the energy sources, both renewable and non-renewable. CO3: To implement the action needed for checking environmental threats.
HS 243B	APPLIED NUTRITION AND EXTENSION	CO1: To implement the nutrition educational programmes for the community CO2: To compute low cost balanced diets CO3: To assess the nutritional problem of the community. CO4 : To know about the causes and prevention of deficiency diseases,
HS 244 C	WOMEN'S STUDIES	CO1: To create awareness about the status of women in India. CO2: To explore the special issues and problems faced by women and girl children. CO3: To assess the developmental programmes for women. CO4 : To know about women and law.

DEPARTMENT OF PHYSICS		
Programmes offered	**BSc Physics (Core & Complimentary)** **MSc Physics**	
BSC PHYSICS		
Programme outcome	PO1: To acquire a solid foundation in all aspects of Physics PO2: To Expand the basic knowledge of Physics acquired from the Plus- Two classes PO3: To create a logical framework in assimilating the higher levels. PO4: To familiarize a broad spectrum of modern trends in Physics. PO5: To develop experimental, mathematical &computational skills. PO6: To develop experimental and data analysis skills through a wide range of experiments in the practical laboratories. PO7: To acquire skills for gathering information from various resources and to understand its effective uses. PO8: To transform students as graduates of the calibre sought by technologies, industries and public service as well as academic teachers and researchers of the future.	
Couse code	**Course Title**	**Course Outcome**
PY1141	BASIC MECHANICS & PROPERTIES OF MATTER	• To develop knowledge and understanding of the historical development of mechanics, some implications of the principle of mechanics and the scope of mechanics • To apply knowledge of the dynamics of rigid bodies, conservation of energy, oscillations, waves and mechanical properties of matter such as elasticity, fluid dynamics and surface tension to explain natural physical processes and related technological advances. • To work on the experimental design and studies on project topics such as Young's modulus for different types of wood, variation of surface tension for different detergents, viscosity of different types of ink and to arrive at knowledge of its fluidity, wide applications of Bernoulli's equation and variation of surface tension with temperature by Jaeger's method. • T0 use elementary mathematics along with physical principles to effectively solve problems encountered in everyday life and, apply that in the advanced and further study in science.
PY1241	HEAT AND THERMODYNAMICS	• To develop knowledge of the laws of thermal conductivity and thermodynamics, and understand its implications. • To develop skills in the problem solving using the concepts of heat an d thermodynamics. ▪ Introduce applications of thermodynamics to heat engines

		such as Carnot engine, Otto engine and Diesel engine and the principle of refrigerator. • To develop an appreciation of the concepts of order, disorder and entropy and an understanding of heat as an energy.
PY 1341	ELECTRODYNAMICS	• To understand the principles and the dynamic as well as the static phenomena of electromagnetism. • To make a mathematical description of electromagnetic phenomena based on basic physical quantities through the fundamental equations of electromagnetism. • To solve electrodynamics problems using the fundamental equations through advanced mathematical steps tools like vector calculus. • To draw qualitative and quantitative conclusions about electrostatic and magneto static phenomena • To equip with the necessary mathematical knowledge for a detailed and accurate description of propagation of electromagnetic waves and for solving related problems.
PY 1441	CLASSICAL AND RELATIVISTIC MECHANICS	• To understand the concepts of Newtonian mechanics, Lagrangian dynamics, Hamiltonian mechanics, Lorentz transformations and special theory of relativity. • To understand phenomena of length contraction, time dilation, twin paradox and mass-energy equivalence. • To apply their classical mechanical understanding to a variety of dynamical simple configurations and systems for solving its problems. • To equip with the necessary mathematical concepts to be able to solve relativistic problems.
PY1541	QUANTUM MECHANICS	• To understand the limitations of classical physics and the emergence, and the mathematical foundations of quantum mechanics. • To solve the Schrödinger equation for simple configurations • To understand that quantum mechanics is a mathematical model the solutions of which yield wave functions and energies. • To understand the general formalism of quantum mechanics.
PY1542	STATISTICAL PHYSICS, RESEARCH METHODOLOGY AND DISASTER MANAGEMENT	• To solve statistical mechanics problems for simple systems. • To perform basic experiments in physics and to perform a statistical and systematic analysis of experimental data. • To write the results of an experiment in the style of a scientific paper. • To get an awareness of the research thesis writing

		and have a feeling of what it means to do independent research. • To equip the students a deep awareness about natural disasters and natural hazards • To take actions for emergency response when disasters occur, prepare others to resolve the problems for disasters by imparting the acquired knowledge and skills
PY1543	ELECTRONICS	• To understand the basic circuit theorems and apply them to solve circuit problems • To understand the characteristics of a PN junction diode, Zener diode and bipolar junction transistor and analyze its working in different electronic circuits • To Know about the working of different types of power amplifiers. • To Know the concepts of feedback principles and Barkhausen criterion for oscillations. • To Design and analyze oscillator circuits to determine the frequency of oscillations. • To understand the fundamentals of AM and FM modulations, and demodulations. • To design and analyze the basic operations of MOSFET and UJT. And the fundamentals of operational amplifiers.
PY1544	ATOMIC & MOLECULAR PHYSICS	• To be familiar with the phenomena in several areas atomic and molecular physics. • To understand the interaction between atoms, molecules and electromagnetic fields. • To be able to account for the effect of nucleus on the electron structure including concepts like mass dependency, and hyperfine structure • To explain the basic principles of molecular rotational, vibrational and electronic spectroscopies. • To know the fundamental principles of NMR, ESR and Mossbauer spectroscopies and be able to outline the applications of resonance spectroscopies. • To perform quantitative calculations based on the relationship between wavelength, energy, speed of light, and the other optical and spectroscopic terms for atomic and molecular properties.
PY1551.5	ENERGY PHYSICS (OPEN COURSE)	• To understand various energy systems, related energy technologies, their availability, merits, and demerits in relation to natural and human aspects of the environment and energy applications. • To know about solar, wind, biomass, tidal, wave and chemical energies. • To know the effective energy management, energy storage, energy crisis and possible solutions.

		• To suggest and design energy options for the developing countries. • To understand the impact due to non-conventional energy sources like global warming. • To gain a solid foundation for developing the use of renewable and conventional energy systems in society.
PY 1641	SOLID STATE PHYSICS	• To know how to explain the fundamental features of crystalline solids, metallic conduction through free electron model, Properties of insulators and semiconductors, band theory of solids, dielectric and magnetic properties of materials. • To understand the physics underlying superconductivity and its applications. • To be familiar with the basic theoretical and conceptual models in solid state physics • To acquire the capability of elementary problem solving in solid state physics, relating theoretical prediction and analysing the results. • To gain basic knowledge of solid state physics so as to build a foundation for further study of solid state systems and their application in electronic devices and modern technologies in material sciences. • To be able to outline the relevance of solid state physics in the modern society
PY 1642	NUCLEAR AND PARTICLE PHYSICS	• To understand and explain the general properties of nuclei, nuclear structure and nuclear models. • To explain different forms of radioactivity and account for their occurrence. • To account for the nuclear fission and fusion processes. • To understand elementary nuclear particles, and their families, symmetries and conservation laws. • To know and understand various elementary particle interactions and their basic features, and interrelations. • To classify elementary particles. • To master the knowledge of particle detectors and accelerators. • To acquire the capability of elementary problem solving skills
PY 1643	CLASSICAL AND MODERN OPTICS	• To develop basic knowledge of physics behind interference, diffraction, polarization and dispersion. • To understand the fundamentals of modern optics like lasers, Fiber optics and holography. • To solve problems in optics by selecting the appropriate equations and performing numerical or analytical calculations.
PY 1644	DIGITAL	• To understand different number systems,

	ELECTRONICS AND COMPUTER SCIENCE	• To analyze, design and implement combinational logic gate circuits. • To be able to explain Boolean expressions for different logic gate circuits and simplify various Boolean expressions for different inputs using the Boolean algebra and with Karnaugh Map. • To explain principle of operations for various arithmetic and sequential electronic circuits. • To understand the basic components, and operational concepts of computers as well as the basic concepts, and the role of memory systems in computers. • To develop programming skills for solving problems in Physics using C++. • To understand the fundamentals of microprocessors and microcontrollers
	(ELECTIVE COURSE)	
PY1645	ADVANCED PHYSICS LAB 2	• To engage effectively in advanced experiments • To evaluate critically and analyze the results of the experimental measurements • To design and practice related experiments and acquire data in order to explore physical principles in optics, electricity and magnetism, effectively communicate results, and critically evaluate related scientific studies.
PY1646	ADVANCED PHYSICS LAB 3	• To engage effectively in electronics experiments using and execute computer programs in physical science problems. • To critically evaluate and analyze the results of the experimental measurements. • To design and practice related experiments and acquire data in order to explore electronic principles, effectively. communicate results, and critically evaluate related scientific studies.
PY1647	PROJECT	• To get an introduction to research methodology. • To bring out the talents of students in experimental, theoretical or computational researches. • To maintain novelty in approaching any research problem through their first hand experiences. • To adapt to new situations. • To develop their oral and verbal presentation skills. • To get an opportunity to communicate with experts in the project/research field so as to share, and clarify their doubts and to seek their opinions and advices • To search for, analysis and synthesis of data and information, with the use of the necessary technology.
	STUDY TOUR	• To get an opportunity to visit and to familiar with

		scientific institutions, and its experts as well as to identify, and understand the essential components and parts of a scientific system and its working. • To develop and integrate their skills in observation, reflection, reasoning, induction, deduction and creative thinking, analysis, concept making and problem solving on specific physical science problem • To analyze the scientific practices critically and suggest alternate methods for experimentation and its implementation.
COMPLIMENTARY COURSE		
PY1131.1	MECHANICS AND PROPERTIES OF MATTER	• To apply knowledge of the dynamics of rigid bodies, conservation of energy, oscillations, waves and mechanical properties of matter such as elasticity, fluid dynamics and surface tension to explain natural physical processes and related technological advances. • To understand elementary mathematics along with physical principles to effectively solve problems encountered in everyday life and, apply that in the advanced and further study in science. • To do experiments on topics such as Young's modulus for different types of wood, variation of surface tension for different liquids, viscosity of different types of liquids and to arrive at knowledge of its fluidity and variation of surface tension
PY1231.1	THERMAL PHYSICS AND STATISTICAL MECHANICS	• To differentiate thermal conductivity and thermometric conductivity. • To perform Lee's disc experiment in Physics lab. • To know qualitative ideas about different radiation laws about transmission of heat. • to Know about black body radiation spectrum and be able to estimate the solar constant and temperature of the sun. • To get ideas about heat engines and their efficiencies as well as the laws of thermodynamics. • To understand the concept of entropy, and disorder and have a clear understanding about the changes irreversible and irreversible cycles. • To familiarize the fundamental concepts of statistical mechanics. • To solve problems in thermal physics and statistical mechanics by selecting appropriate equations.
PY1331.1	OPTICS, MAGNETISM AND ELECTRICITY	• To develop basic knowledge of the physics behind interference, diffraction and polarization. • To understand the principle of operation of laser and the light propagation in optical fibres. • To be able to outline the important applications of

		lasers and optical fibres in the modern society. • To be able to define magnetism and magnetic properties of matter, derive the relation between magnetic vectors and explain the electron theory of magnetism. • To study in depth the alternating current response which is essential in understanding the working of electronic circuits. • To be able to solve problems relating to optics, electricity and magnetism.
PY1431.1	MODERN PHYSICS AND ELECTRONICS	• To have a deep understanding of models in atomic physics such as Bohr atom model and vector atom model. • To explain Bohr's correspondence principle, coupling mechanisms and Pauli's exclusion principle. • To understand the basic properties of nucleus and nuclear forces • To know the fundamental principles absorption and emission spectroscopies. • To know the mathematical foundations of quantum mechanics. • To develop an understanding of how to measure radioactivity. • To analyze, Design and implement combinational logic gate circuits.
PY1432	PRACTICAL	• To be able to perform basic hands on experiments in some areas physics • To develop an in depth understanding of theories what they have learned from the classrooms and other knowledge resources. • To acquire the capability for suggesting alternate experimental methods for verifying the theories.
COMPLIMENTARY(CHEMISTRY)		
PY1131.2	ROTATIONAL DYNAMICS AND PROPERTIES OF MATTER	• To apply knowledge of the dynamics of rigid bodies, oscillations, waves and properties of matter to explain natural physical processes and related technological advances. ▪To understand elementary mathematics along with physical principles to effectively solve problems encountered in everyday life and, apply that in the advanced and further study in science. ▪To do hands-on-experiments in topics such as Young's modulus for different types of wood, rigidity modulus of wires, surface tension of liquids, variation of surface tension with temperature
PY1231.2	THERMAL PHYSICS	• To make comparison between liquid diffusion and heat conduction. • To get ideas about fundamental laws of diffusion. • To understand what diffusion is and be able to

		estimate concentrations and coefficient of diffusivity. • To get ideas about heat engines and their efficiencies as well as the laws of thermodynamics. • To understand the concept of entropy, and disorder and have a clear understanding about the changes irreversible and irreversible cycles. ▪ To Solve problems in thermal physics and statistical mechanics by selecting appropriate equations.
PY1331.2	OPTICS, MAGNETISM AND ELECTRICITY	• To develop basic knowledge of the physics behind interference, diffraction and polarization. • To understand the principle of operation of laser and the light propagation in optical fibres. • To outline the important applications of lasers and optical fibres in the modern society. • To define magnetism and magnetic properties of matter, derive the relation between magnetic vectors and explain the electron theory of magnetism. • To solve problems relating to optics, electricity and magnetism.
PY1431.2	ATOMIC PHYSICS, QUANTUM MECHANICS AND ELECTRONICS	• To have a deep understanding of models in atomic physics such as Bohr atom model and vector atom model. • To explain Bohr's correspondence principle, coupling mechanisms and Pauli's exclusion principle. • To understand the basic properties of nucleus and nuclear forces • To know the fundamental principles absorption and emission spectroscopies. • To know the mathematical foundations of quantum mechanics. • To develop an understanding of how to measure radioactivity. • To analyze, Design and implement combinational logic gate circuits.
PY1432	PRACTICAL	• To be able to perform basic hands on experiments in some areas physics • To develop an in depth understanding of theories what they have learned from the classrooms and other knowledge resources. • To acquire the capability for suggesting alternate experimental methods for verifying the theories.

M.SC PHYSICS		
Programme outcome	**PO1:** Define and explain fundamental ideas and mathematical formalism of theoretical and applied physics. **PO2:** Identify, classify and extrapolate the physical concepts and related mathematical methods to formulate and solve real physical problems. **PO3:** Identify and solve interdisciplinary problems that require simultaneous implementation of concepts from different branches of physics and other related areas. **PO4:** To define a research problem, translate ideas into working models, interpret the data collected draw the conclusions and report scientific data in the form of dissertation. **PO5:** To disseminate scientific knowledge and scientific temper in the society to contribute towards greater human cause.	
Couse code	**Titles of Courses**	**Course Outcome**
PH 211	Classical Mechanics	CO1: Students are able to learn the concepts of Lagrangian and Hamiltonian mechanics and use them to solve problems in mechanics. Able to learn concepts of generating functions, Poisson brackets Hamilton Jacobi equations and action angle variables. CO2: To equip the students to deal with central force problem and analyzing Kepler's laws. CO3: To inculcate the students the concepts of special and general theory of relativity and related problems. CO4: To acquaint the students about the theory of small oscillations and Euler's equations of motions of rigid bodies. CO5: To analyze nonlinear dynamical systems and to explain the concepts of classical chaos.
PH 212	Mathematical Physics	CO1: To apply and analyze the various vector and matrix operations and to perform complex analysis for solving physical problems. CO2: To demonstrate and utilize the concepts of Fourier series and its transforms. CO3: To explain and differentiate different probabilistic distributions. CO4: To apply partial differential equations and special functions for solving mathematical problems. CO5: To illustrate and apply concepts of group theoretical operations and tensors.
PH 213	Basic Electronics	CO1: To equip the students design and analyze different analogue and digital circuits. CO2: To summarize the knowledge of basic arithmetic and data processing circuits and memory devices.

		CO3: To equip the students to explain various components in optical communications systems and microwave devices. CO4: To measure and analyze the different electronic signals.
PH 221	Modern Optics & Electromagnetic theory	CO1 : To demonstrate the linear and nonlinear optical phenomena. CO2 : To explain and discuss propagation of electromagnetic waves through different media. CO3 : To restate formulations and relativistic effects in electrodynamics. CO4 : To analyse the propagation of electromagnetic waves through waveguides. CO5 : To use radiation theory in developing different antennas.
PH 222	Thermodynamics, Statistical Physics & Basic Quantum Mechanics	CO1 : To explain the basic thermodynamic relations, Maxwell's equations and its consequences. CO2 : To equip the students to demonstrate and apply classical and quantum statistics in different physical phenomena. CO3 : To distinguish the different phase transitions using Ising model. CO4 : Outline and apply foundations of quantum mechanics.
PH 223	Computer Science & Numerical Techniques	CO 1: To summarize computer hardware and its operating systems CO2 : Explain internal architecture of microprocessors 8085 and create assembly language programing. CO3 :To develop and compile programs in python and C++. CO4 : Apply numerical methods to solve physical problems.
PH 251	General Physics Practicals	Demonstrate and understand various general physics experiments for acquiring fundamental concepts. CO1: To measure and analyze various physical quantities. CO2: To calculate error in various general physics experiments. CO3: To develop experimental skills
PH 252	Electronics & Computer Science Practicals	Design, construct and verify various electronics circuits and object oriented programing using C++ to solve numerical problems. CO1: To design and construct various electronic circuits and its validation. CO2: To calculate error in various electronics experiments. CO3: To develop experimental and programming skills
PH 231	Advanced Quantum Mechanics	CO1 : To extend the use of approximation methods viz variation, WKB, time dependent and time independent perturbations. CO 2: To summarize different types of symmetry, conservation laws and quantum theory of scattering. CO3 : To distinguish different approximation methods, to

		study the structure and properties of many electron systems. CO4 : To compute eigen values of angular momentum and evaluation of CG coefficients. CO5 : Infer the requirements of relativistic quantum mechanics.
PH 232	Atomic and Molecular Spectroscopy	CO 1: Explain different symmetry operations and deduction of molecular structure. CO 2 : Distinguish and classify the different spectra shown by atoms and molecules CO 3: Illustrate the various spectroscopic experimental techniques.
PH 233 E	Advance Electronics	CO1: To summarize various techniques of digital and analog communication systems. CO2:Generalize the idea of information theory CO3: Illustrate various techniques for digital signal processing based Fourier and Z transform.
PH 241	Condensed Matter Physics	CO1: Discuss crystal physics, lattice vibrations, models of thermal properties and band theory of solids. CO2: Explain the theoretical concepts of semiconductors, dielectric, magnetic and superconducting materials. CO3: To describe the synthesis and characterization techniques of nanomaterials. CO4: To apply the concepts in condensed matter physics to meet the challenges.
PH 242	Nuclear & Particle Physics	CO1: To describe and analyze nuclear structure, models and reactions. CO2: To illustrate the mechanisms of nuclear fission and fusion reactions. CO3:Discuss various nuclear detectors and particle accelerators. CO4: To classify elementary particles and discuss their interactions.
PH 243 E	Advance Electronics	CO1: Demonstrate microprocessor architecture, programing and interfacing devices. Co2: Outline the basic concepts of embedded systems, artificial intelligence and neural networks. CO3: Illustrate fundamental data communications codes, radar and satellite communication systems.
PH 261	Advanced Physics Practicals	Demonstrate and understand various advanced physics experiments for acquiring fundamental concepts and analyze various experimental data. CO1: To measure and analyze various physical quantities. CO2: To calculate error in various advanced physics experiments. CO3: To develop experimental skills CO4: To analyze and point out results of experimental data.

PH 262	Advanced Electronics Practicals	Design, construct and study various electronics circuits and programing using microprocessor. CO1: To design and construct various electronic circuits and its validation. CO2: To calculate error in various electronics experiments. CO3: To develop and test assembly language programs using microprocessors

DEPARTMENT OF MATHEMATICS		
Programme offered	**BSc Mathematics (Core & Complimentary), Statistics Complementary**	
Programme outcome	PO1: To acquire a solid foundation in all aspects of Mathematics PO2: To Expand the basic knowledge of Mathematics that they have already learned. PO3: To create a logical frame work in assimilating the higher levels. PO4: To familiarize a broad spectrum of modern trends in Mathematics PO5: To develop mathematical and computational skills. PO6: To acquire skills for gathering information from various resources and to understand its effective uses. PO7: To transform students as graduates of the calibres ought by technologies, industries and public service as well as academic teachers and researchers of the future.	
Couse code	**Title of Courses**	**Course Outcome**
MM 1141	Methods of Mathematics	• To understand the development of calculus • To acquire basic knowledge of differential calculus its origin and development • To acquire knowledge about limits, derivatives, maxima, minima, critical points concavity and points of inflection • To develop understanding about differentiations and its applications • To apply these ideas in sketching of curves • To acquire basic knowledge of differential calculus its origin and development • To acquire basic knowledge of differential calculus its origin and development • To acquire knowledge in finding the area and volume • To apply these basic ideas in practical situations
MM 1221	Foundations of Mathematics	• To acquire basic knowledge in logics and proofs • To develop the idea of sets relations and functions • To develop the foundations of geometry • To acquire basic knowledge in polar coordinate system • To acquire basic knowledge in vector calculus
MM 1341	Elementary Number Theory and Calculus - I	• To develop the idea of abstract algebra • To develop the idea of divisibility in integers • To acquire basic knowledge in division algorithm, pigeon hole principle

		• To acquire basic knowledge in LCM and GCD • To develop the idea of functions of more than one variable • To acquire basic knowledge in sketching of graphs in two and three variables • To develop the basic idea of limits, differentiability, tangent planes, maxima and minima of functions of several variables
MM 1441	Elementary Number Theory and Calculus - II	• To develop the idea of congruence class in ***Z.*** • To develop the idea of congruence classes, modular arithmetic and their applications. • To understand Chinese reminder theorem, Wilson's theorem, Fermat's little theorem, Eulers theorem. • To introduce the idea of multiple integrals. • To apply multiple integrals to find the volume and area • To develop the idea of vector differentiation, evaluating surface integrals and their applications
MM 1541	Real Analysis - I	• To understand the idea of real numbers • To develop the idea of sequences and their limits and to acquire knowledge in the related theorems • To understand the idea of topology in the set of real numbers
MM 1542	Complex Analysis - I	• To develop the idea of complex numbers • To understand the idea of analytic functions, functions of one complex variable, exponential functions and their properties • To develop the idea of complex integration and their applications
TMM 1543	Abstract Algebra - Group Theory	• To provide a very strong foundation in groups • To understand the concept of symmetries of a square • To develop the concept of permutation groups • To understand Lagrange's theorem of finite groups and their applications • To understand the concept of homomorphisms
MM 1544	Differential Equations	• To understand the development of differential equations

		• To acquire knowledge in ordinary differential equations • To understand first order and second order differential equations
MM 1545	Mathematics Software - LATEX & SageMath	• To familiarise and acquire skill in the typesetting software LATEX by practical • To enable students to see how the computational techniques they have learned in the previous semesters can be put into action with the help of software so as to reduce human effort.
MM 1551.3	Open Course - Basic Mathematics	• To acquire and develop the basic idea of arithmetic to a student of any discipline • To acquire basic knowledge in ratio, proportions, percentages and the relations among them • To acquire basic knowledge in statistics
MM 1641	Real Analysis - II	• To develop the idea of limits of functions, continuity and their relations • To understand the rigorous concepts of differentiability of functions and their applications • To understand the concept of Riemann integrations and their properties
MM 1642	Complex Analysis - II	• To understand the concept of series representation of analytic functions • To acquire knowledge in power series Laurent series, zeros and singularities • To understand the concept of Residue theory and their applications • To understand the concept of Conformal mapping
MM 1643	Abstract Algebra - Ring Theory	• To understand the concept of Rings, field and integral domains • To acquire basic knowledge in polynomial ring and PIDs • To understand the concept of UFD and ED and their uses
MM 1644	Linear Algebra	• To acquire knowledge in linear equations and their geometry • To understand the concept of vector spaces, system of equations their matrix representations and their associated spaces • To acquire knowledge in determinants its value and its use in solving system of equations • To acquire knowledge in diagonalising matrices
MM 1645	Integral	• To develop the ideas acquired in integral

	Transforms	calculus and differential equations to use in application level • To understand the basic idea of Laplace transform • To develop the idea of Laplace transform in solving differential equations • To acquire basic knowledge in Fourier series and their applications
MM 1651.1	Elective Course - Graph Theory	• To introduce the basic idea of Graphs • To develop these ideas in solving real life problems
MM 1646	Project	• To get an introduction to research methodology. • To bring out the talents of students in theoretical or computational researches. • To maintain novelty in approaching any Research problem through their first hand experiences. • To adapt to new situations. • To develop their oral and verbal Presentation skills. • To get an opportunity to communicate with experts in the project/research field so as to share, and clarify their doubts and to seek their opinions and advices • To search for, analysis and synthesis of data and information, with the use of the necessary technology.
Complementary Courses to Physics		
MM 1131.1	Calculus with applications in Physics - I	• To acquire knowledge in the basic ideas and developments of differential calculus • To acquire knowledge in integral calculus • To acquire skills to use these ideas in physical problems • To understand the concept of infinite series their limits and applications • To understand the concept of vector algebra
MM 1231.1	Calculus with applications in Physics - II	• To understand the concept of complex numbers and hyperbolic functions • To understand the concept of partial differential equations • To understand the concept of multiple integrals and their use to find areas and volumes
MM 1331.1	Calculus and Linear Algebra	• To understand the concept of ordinary differential equations and their solutions • To acquire knowledge in higher order equations their solutions and applications • To understand the concept of vector

		integration and their applications • To understand the concept of Fourier series and their applications • To understand the basic idea of linear algebra, the use of matrices and determinants to solve system of equations
MM 1431.1	Complex Analysis, Special Functions, and Probability Theory	• To understand the concept of functions of one complex variables, analytic functions • To acquire knowledge in Laurent series, residue theorem and their applications • To acquire basic knowledge in probability and statistics
Complementary Courses to Chemistry		
MM 1131.2	Calculus with applications in Chemistry - I	• To acquire knowledge in the basic ideas and developments of differential calculus • To acquire knowledge in integral calculus • To acquire skills to use these ideas in l problems in chemistry • To understand the concept of complex numbers and hyperbolic functions • To understand the concept of vector algebra
MM 1231.2	Calculus with applications in Chemistry - II	• To understand the concept of partial differential equations • To understand the concept of infinite series their limits and applications • To acquire knowledge in vector differentiation • To understand the concept of multiple integrals and their use to find areas and volumes
MM 1331.2	Linear Algebra, Probability Theory & Numerical Method	• To understand the basic idea of linear algebra, the use of matrices and determinants to solve system of equations • To acquire basic knowledge in probability and statistics • To acquire basic knowledge in numerical methods to solve system of equations, differential equations, roots of equations
MM 1431.2	Differential Equations, Vector Calculus, and Abstract Algebra	• To understand the concept of differential equations their solutions and to acquire knowledge in solving the equations • To acquire basic knowledge in vector integration and their applications • To understand the basic concepts of groups and representation theory
Complementary courses (Statistics for Mathematics)		
ST1131.1	Descriptive Statistics	• To understand the characteristics of data and will get acquainted with describing data through illustrating examples and

		exercises • To collect, organize and summarize data, create and interpret simple graphs and compute appropriate summary statistics
ST 1231.1	Probability and Random variables	• To acquire basic knowledge in probability and their applications • To understand the ideas of random variables ad their applications
ST 1331.1	Statistical Distributions	• To understand the concepts of distributions – discrete and continuous • To acquire basic knowledge in Law of large numbers, central limit theorem • To acquire basic knowledge in Sampling distributions and their applications
ST 1431.1	Statistical Inference	• To understand the methods of Statistical Inference • To acquire knowledge in testing of hypothesis • To understand the use of Large sample test, small sample test and their applications • To acquire knowledge in design of experiments, AOVA table
ST 1432.1	Practical Using Excel	• To use statistical tools available in Excel and have hands on training in data analysis
Complementary courses (Statistics for Mathematics)		
ST 1131.3	Descriptive Statistics	• To understand the characteristics of data and will get acquainted with describing data through illustrating examples and exercises • To collect, organize and summarize data, create and interpret simple graphs and compute appropriate summary statistics
ST 1231.3	Sampling and Probability Distributions	• To understand the concepts of data collection and their use • To understand the concepts of probability • To acquire basic knowledge in random variables and standard distributions
ST 1331.3	Statistical Inference	• To understand the methods of Statistical Inference • To acquire knowledge in testing of hypothesis • To understand the use of Large sample test, small sample test and their applications
ST 1431.3	Statistical Techniques for Geography	• To understand the concepts of nano parametric inference • To acquire knowledge in one sample non-parametric and two sample non-

		parametric tests • To acquire knowledge in design of experiments, AOVA table • To understand the basic concepts of point parameters like random and systematic point parameters, concept of spatial data and autocorrelation structure
ST 1432.3	Practical Using Excel	• To use statistical tools available in Excel and have hands on training in data analysis

DEPARTMENT OF ECONOMICS		
Programmes offered	**BA Economics** **MA Behavioural Economics and Data Science**	
BA ECONOMICS		
Programme outcome	• To enable students to acquire the necessary skills for analyzing basic economic issues at the micro and macro levels. • To equip students with basic knowledge of Economics & development aspects of Indian Economy in general and Kerala Economy in particular. • To acquaint the students with the essential mathematical and statistical methods and tools to be applied in the analytical aspects of Economics. • To apprise the learners about the fiscal framework of the Government for assessing its performance. • To expose the students to the origin and development of money and modern banking. • To acquaint the students to the basic methodology of research • To familiarize the students with the basic concepts and functioning of the financial markets and services • To provide the students an understanding of the basic international trade and financial system. • To appraise the students about the important issues in economic development and the tools for measuring economic growth and development	
CORE COURSE 1- EC1141	INTRODUCTORY MICROECONOMICS	CO1- To develop a conceptual foundation and identify analytical methods used in Microeconomics CO2- To identify concepts of scarcity, work and choice CO3- To understand the basic concepts in microeconomics like demand, supply, utility, production and cost CO4- To have a broad understanding of all the market structures like perfect competition, monopoly, oligopoly and monopolistic competition
CORE COURSE 2- EC 1241-	INTERMEDIATE MICROECONOMICS	CO1- the course gives an understanding of the major concepts in microeconomics CO2- to evaluate the markets for factor inputs CO3- To analyze the theories with regard to risk and uncertainty CO4- To study the basic and advanced topics in game theory CO5- TO understand important concepts like market failure and externalities
FOUNDATION COURSE 2- EC1321 –	INFORMATICS FOR APPLIED ECONOMETRICS	CO1- This course introduces a plethora of online resources which will help students improve their teaching-learning experience. The students will also be able to utilize these web resources to enhance their career and academics. CO2- The course also provides an exposition to

		econometric concepts and techniques. This is to enable the students to conduct and criticize empirical studies in economics and related fields. CO3- It covers estimation, prediction and diagnostic testing of simple regression models
CORE COURSE 3- EC1341	INTRODUCTORY MACROECONOMICS	CO1- To introduce the basic concepts in macroeconomics CO2- To analyse the role played by banks, money and credit market in the macro economy CO3- To understand the core theories in consumption and investment CO4- To elucidate the equilibrium in goods market and money market through the ISLM model
CORE COURSE 4 – EC1441-	MATHEMATICAL METHODS FOR ECONOMICS	CO1- The key objective of this paper is to provide the students an insight into the importance of mathematical methods in Economics and also to familiarize them with the basic mathematical techniques used in economic analysis CO2- to introduce the basic mathematical tools like equations and functions CO3- To thoroughly understand theory and practice of matrix algebra CO4- To apply differential and integral calculus to mathematical and economic theory
CORE COURSE 5- EC1442-	INTERMEDIATE MACROECONOMICS	CO1- To introduce students to the micro foundations of macroeconomics, inflation and unemployment, economic growth and fiscal and monetary policies in an open economy CO2- to initiate open economy macroeconomics by way of balance of payments, trade and exchange rate CO3- To analyse supply side economics and theories on expectations CO4- To understand basic growth models and concepts of demand for money
CORE COURSE 6- EC1541-	METHODOLOGY AND PERSPECTIVES OF SOCIAL SCIENCES	CO1- The course intends to familiarize the students with the broad contours of Social Sciences, specifically Economics and its methodologies, tools and analysis procedures. CO2- The course also aims to create an enthusiasm among students, incorporating various basic concepts and issues in economics CO3- To create awareness among students regarding global economic events and contemporary issues
CORE COURSE 7- EC 1542-	STATISTICAL METHODS FOR ECONOMICS	CO1- The course is intended to familiarize the students with statistical tools and techniques and enable them to apply these tools in Economics CO2- To get a detailed understanding of measures of central tendency, dispersion, correlation and regression C03- to calculate index numbers and analyse time series data CO4- to study the theories and practices involved in

		probability distribution
CORE COURSE 8-EC 1543-	READINGS IN POLITICAL ECONOMY	CO1- to have a first hand knowledge on the classical political economy CO2- to understand the importance of historical processes and institutions in shaping economic outcomes. CO3- to give a broader view of economic enquiry, its social purpose and its political application CO4- To build a firm foundation of the key theoretical approaches involved in studying the economy. CO5- To examine the issues in political economy and development thinking
CORE COURSE 9-EC 1544-	ECONOMIC GROWTH AND DEVELOPMENT	CO1- To ensure that students begin to understand basic concepts of Economic Growth and Development CO2- to enable students to acquire multi dimensional aspects of developmental issues CO3- To convey knowledge about theoretical framework of Growth and Development under different Schools of economic thought CO4- To impart knowledge about Political institutions, the role of the state in Economic Development and problems that affect state governance
CORE COURSE 10-EC1545-	INTERNATIONAL ECONOMICS	CO1- To understand the basic concepts and theories of international trade and enable students to have a basic understanding of the emerging trends, issues and policies in the field of international economic system CO2- to study the classical and modern theories of trade CO3- to understand the theories and concepts in balance of payments and foreign exchange CO4- To examine the theories in commercial policy
OPEN COURSE-EC1551.2-	HUMAN RESOURCE MANAGEMENT	CO1- Keeping in view the broad objective of an open course in providing the basis for life enrichment and career orientation, a course in Human Resource Management is offered.The course is aimed at providing basis for understanding the significance of human resource in the growth of our economy and society and to learn the ways for integrating HRM strategies in organisations CO2- To study the characteristics if human resource planning and the meaning importance and need of recruitment, selection and training
CORE COURSE 11- EC 1641-	INDIAN ECONOMY	CO1- The course intends to provide an understanding about growth process in Indian economy, sectoral aspects of the economy by focusing agriculture, industry and service sectors, relations of India with external sector and economic reforms CO2- To understand the growth process of Indian economy since independence in terms of demography, poverty, unemployment, agriculture, industry etc. CO3- to analyse the importance and composition of service sector and foreign trade in India

		CO4- to study the Indian Economic Reforms since 1991
CORE COURSE 12- EC 1642-	BANKING AND FINANCE	CO1- The course intends to familiarize the students with the basic concepts in Banking and Finance and develop a comprehensive knowledge on the role of banks in the operation of an economy. C02- It also enables them to know the operation of the Indian Financial System and activities in the financial markets CO3- to understand the nature and role of financial systems in india with special reference to money markets and capital markets.
CORE COURSE13- EC1643	PUBLIC ECONOMICS	CO1- Introducing the subject matter and scope of public economics, role of government, types of market failures and the concept of public good CO2- Providing a general understanding on the basic fiscal policy instruments CP3- Generating awareness on public economics in India, with special focus on budgetary system and fiscal federalism
CORE COURSE 14-	ENVIRONMENT ECONOMICS AND DISASTER MANAGEMENT	CO1- The course intends to create environmental awareness among students and provide exposure to disaster management CO2- To understand the basic concepts in environment economics Co3- To examine the theories of market failure and externalities CO4- to pinpoint the global environment issues and disaster management activites done in India
ELECTIVE COURSE- EC1661.1-	KERALA ECONOMY	CO1- To understand the structural changes, Sector-wise contribution and features of the Kerala Economy since the formation of the state and enable the students to have a basic understanding of the emerging trends and issues of Kerala Economy CO2- to analyse the demographic changes in India CO3- to explain Kerala's economic development by taking into consideration a sector wise analysis
EC1645-	PROJECT	As part of the requirements for BA Programme , every student must do a project either individually or as a group under the supervision of a teacher. The project is expected to equip the student to identify an issue or topic and conduct the study in a systematic and scientific way. Students will get the opportunity to apply various tools they have learned and present the report in a structured manner

M.A. BEHAVIOURAL ECONOMICS & DATA SCIENCE		
Programme outcome	• To equip students with basic and advanced knowledge in Economic theories, Behavioural Economics and Data Science • To familiarise the students with various aspects of applied econometrics, data management and cognitive economics • To equip the students in machine learning in R and basic data analytics using R. • To make the students capable of addressing and solving the issues in the society and the economy by acquiring greater insight in the behaviour of economic agents and data management they have acquired • To create academic excellence through holistic education • To develop right skills in students catering to the needs of the industry and policy makers	
Sem 1	MICRO ECONOMIC THEORY	• Familiarise with various consumer theories and apply them to analyse and predict the behaviour of individuals • Understands theconcept of production and cost • Familiarise with different market structures – Perfect and imperfectly • competitive • Understand about general equilibrium andconcept of economic welfare. • To have greaterinsight into market failure and related aspects
	MACRO ECONOMIC THEORY	• Familiarise with various schools of macroeconomic thoughts • Understands the concept of ISLM approach • Understands the concept of Demand & supply of money • To analyse the behavioural foundations of macro economics • To familiarise with open economy macro economics
	QUANTITATIVE TOOLS FOR BEHAVIOUR ECONOMICS	• Familiarise with averages, dispersion and probability distributions • Understands the concept ofexponents, polynomials, functions, limits, continuity etc. • Familiarise with optimisation –maxima and minima • To understand about linear algebra – vectors – matrix etc. • To familiarisewith vectors and quadratic forms

	PRINCIPLES OF COGNITIVE ECONOMICS	• Familiarise with economics of psychology & behavioural mental economics • Understands the concept of motivation & personality • Familiarise with perception& condoning • To understandabout information processing • To familiarise with expectation, emotions & well being
Sem 2	FOUNDATIONS IN BEHAVIOURAL MICRO-ECONOMICS	• Familiarise with the discipline behavioural economics • Understandsthe concept preference, risk etc. • Familiarisewith inter temporal choice • To understand about strategic interaction& behavioural game theory • To familiarisewith nudges, policy & happiness
	FOUNDATIONS IN BEHAVIOURAL MACRO-ECONOMICS	• Familiarise with the discipline behavioural macro economics • Understands the new approaches to macro economic • modelling • To understand about Inertia in macroeconomic • variables and non-normality • To familiarise with transmission ofshocks • To familiarisewith nudges, policy & happiness
	FOUNDATIONS OF DATA SCIENCE	• Familiarise with the area of Data Science • Understands about data processing • Familiarise with machine learning • To understand about clustering • To familiarize with Data Visualization
	BASIC ECONOMETRICS AND RESEARCH METHODOLOGY	• To create an understanding among the students on basic econometric methodology • To train the students in applying economic theories to real economic data by means of empirical models, • To train the students in applying economic theories to real economic data by means of empirical models • To Familiarize about time series data • To have basic understanding about research methodology
Semester III	APPLIED BEHAVIOURAL ECONOMICS	• To conceptualising welfare and measuring welfare • To familiarize with behaviour economics and development economics • To understand about behavioural economics & labour market • To Familiarize about behavioural economics and health economics • To have basic understanding behavioural economics

		and organisational behaviour
	EXPERIMENTAL ECONOMICS : METHODS AND APPLICATION	• To familiarize with history and emergence of experiments in economics • To understand Need for experiments in economics • To understand how to design an experiment • To familiarize with econometrics of experimental data • To understand the external validity of an experiment
	GAME THEORY	• To familiarize the concept of theory of games • To understand about strategic games & Nash equilibrium • To understand about the illustrations of Nash Equilibrium • To Familiarize with mixed Strategy Nash Equilibrium • To understand about extensive Games and Nash Equilibrium
	OPTIONAL - ADVANCED ECONOMETRICS	• To develop analytical skills needed to work successfully with real economic data • To understand about of simultaneous equation models • To understand about to non- stationary Time Series • To familiarize with Time Series Econometrics: Forecasting • To understand about panel data models
	OPTIONAL- DATA ANALYTICS FOR BUSINESS	• To familiarize data analytic thinking and learning methods • To understand about fitting a model to data • To understand about similarity- neighbours, clusters and visualising model performance • To familiarize with evidence and probabilities • To understand with representing and mining text
Sem IV	OPTIONAL - BEHAVIOURAL ECONOMICS AND PUBLIC HEALTH	• To familiarize link between behavioural economics and public health • To understand about health behaviour • To understand about social norms, belief and action • To familiarize with nudging individuals • To understand with deciding better health policies
	BASICS OF BEHAVIOURAL FINANCE	• To familiarize with basic aspects of behavioural finance • To understand about building block of behavioural finance • To understand about rationality from an economics and evolutionary prospective • To familiarize with external factors and investor behaviour • To familiarize with behavioural corporate finance
	BEHAVIOURAL	• To familiarize with basic aspects of behavioural policy design

	ECONOMICS AND POLICY DESIGN	• To understand about incentives and norms for public policy • To understand about nudge and policy design • To familiarize with government policy –taxation • To familiarize with behaviour and environment
	FOUNDATIONS OF DATA ANALYSIS USING RAND PYTHON	• To familiarize with introduction to Data Science • To understand about Basics of Coding in Python • To understand about Basic coding in R • To familiarize with Exploratory data analysis • To familiarize with Regression modelling
	OPTIONAL BEHAVIOURAL ECONOMICS AND TOURISM	• To familiarize with tourism and traditional thinking • To understand about behavioural perspectives in tourism • To understand about smart thinking for destination • To familiarize with behaviour of smart thinking for companies • To understand best practices and approach using smart thinking

DEPARTMENT OF COMMERCE	
Programme offered	**B.COM FINANCE**
B.COM FINANCE	
Programme Outcome	The First Degree Programme in Commerce is designed with the objective of equipping the students to cope with the emerging trends and challenges in the industrial and business world
Programme Specific Outcome	The students will be ready for employment in functional areas like accounting, taxation, banking, insurance and corporate law and also will develop an attitude for working effectively and efficiently in a business environment.
Course	**Outcome**
METHODOLOGY & PERSPECTIVES OF BUSINESS EDUCATION	1. Basic awareness about the business environment and the role of business in economic development. 2. Holistic, comprehensive and integrated perspective to business education 3. Fundamental understanding about ethical practices in business.
ENVIRONMENTAL STUDIES	Develop knowledge and understanding of the environment and enable the students to contribute towards maintaining and improving the quality of the environment
MANAGEMENT CONCEPTS AND THOUGHT	1) To equip learners with knowledge of management concepts and their application in contemporary organizations 2) To facilitate overall understanding of the different dimensions of the management process.
MANAGERIAL ECONOMICS	1. Familiarise students with the economic principles and theories underlying various business decisions. 2. Equip the students to apply the economic theories in different business situations.
INFORMATICS AND CYBER LAWS	1. Review the basic concepts and fundamental knowledge in the field of informatics and to create an awareness about the nature of the emerging digital knowledge society and the impact of informatics on business decisions. 2. Awareness about the cyber world and cyber regulations
FINANCIAL ACCOUNTING	Familiarize the students with different methods of depreciation and equip the students to prepare the accounts of specialized business enterprises and areas
BUSINESS REGULATORY FRAMEWORK	Enable the students to apply the provisions of business laws in business activities
BUSINESS	Enable students to acquire knowledge in applying basic

MATHEMATICS	mathematical tools in practical business decisions
ENTREPRENEURSHIP DEVELOPMENT	Equip the students to have a practical insight for becoming an entrepreneur
COMPANY ADMINISTRATION	Acquaint the students with Management and Administration of Companies, Compliance requirements, investigation into the affairs of the company and Winding up procedure.
FINANCIAL MANAGEMENT	Enable the students to understand the practical application of financial management, conceptual and analytical insights to make financial decisions
E-Business	Expose the students to e- business and its potentialities.
INDIAN FINANCIAL MARKET	A clear-cut ideaabout the functioning of Indian Financial Market in general and Capital market operations in particular
BANKING AND INSURANCE	Gain knowledge about the theory and practice of banking & Insurance business also familiarize the students with the changing scenario of Indian Banking and Insurance
CORPORATE ACCOUNTING	Awareness about corporate accounting in conformity with the provisions of Companies Act, IAS and IFRS. Students will be able to prepare accounts of banking and insurance companies also enable them to prepare and interpret financial statements of joint stock companies.
PROJECT FINANCE	Students understand the process and issues relating to project preparation, appraisal, administration, review and monitoring of projects.
BUSINESS STATISTICS	Develop the skill for applying appropriate statistical tools and techniques in different business situations.
FUNDAMENTALS OF INCOME TAX	Enable the students to acquire the basic skills required to compute the tax liability of individual assessee with more emphasis on Income from Salaries and Income from House property.
COST ACCOUNTING	Knowledge of cost accounting system and acquaint the students with the measures of cost control.
MARKETING MANAGEMENT	Knowledge of various conceptsof modern marketing management
FINANCIAL SERVICES IN INDIA	General awareness about the financial services
AUDITING	Knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards also the audit of Companies and the liabilities of the auditor.
APPLIED COSTING	Students will be able to apply the costing methods and techniques in different types of industries
MANAGEMENT ACCOUNTING	Develop professional competence and skill in applying accounting information for decision making.
MANAGEMENT OF	Familiarize the students with international trade and

FOREIGN TRADE	services.
TAXATION LAW AND ACCOUNTS	Equip the students with the practical skill and knowledge of Income Tax and fundamentals of GST

DEPARTMENT OF ENGLISH		
Programmes offered	**BA ENGLISH LANGUAGE AND LITERATURE**	
	MA ENGLISH LANGUAGE AND LITERATURE	
BA ENGLISH LANGUAGE AND LITERATURE (OLD SCHEME)		
PROGRAMME OUTCOME	PO1: Address the requirements of the language use in a globalized context PO2: Ensure the importance of study of the English language in relation to the study of language and literature of the mother tongue. PO3: Have improved competence in translation and to view the same not only as a tool for cultural transmission but also as skill acquisition. PO4: Comprehended the current modes of writings – that which encompasses the issues related to race, gender, ethnicity, climate change etc. and realize the role of literature in inculcating social sensitiveness PO5: The competence to identify the literary voices of dissent from diverse parts of the globe and to reflect on the popular culture and literature. PO6: Enable students to engage critically and creatively with wide range of selected text. PO7: It helps To develop an interest in them to appreciate the nuances of literary language and understanding the way of English language functions. PO8: This program also helps them to understand the relationship between art and life in order to comprehend the social, emotional, psychological cultural values of literary texts. PO9: It helps in familiarizing them with the current trends in literary research as it provides an insight into the basic pedagogical principles and praxis related to the teaching of both English language and literature in English. PO10: It also gives them the confidence to use their communication skills in English in a wide range of professional and practical context.	
Course Code	**Course Title**	**Course Outcome**
Core Course I - EN 1141	READING POETRY	CO1: To sensitize students to the language, forms and types of poetry. CO2: To make them aware of the diverse poetic devices and strategies. CO3: To help them read, analyse and appreciate poetry. CO4: To enhance the level of literary and aesthetic experience and to help them respond creatively.
Complementary Course -1 Common for EN 1131	HISTORY OF ENGLISH LITERATURE I	CO1: To understand how people lived during various ages in Britain. CO2: To understand what sort of social and political organisations evolved there. CO3: To understand what the beliefs and practices of the

		people were ie. how the culture of Britain evolved. CO4: To understand what kind of literature emerged out of these conditions.
Core Course II –: EN 1241	READING DRAMA	CO1: To enable the students to read, analyse and appreciate drama CO2: To sensitize them to the verbal and visual language of drama CO3: To help them watch, write about, and perform plays
Core Course III: EN 1341	READING FICTION	CO1: To make students aware of the diverse fictional forms in prose. CO2: . To enable them to analyse and appreciate various fictional writings. CO3: To give them an insight into other cultures. CO4: To help them think and write imaginatively.
Complementary Course 3–EN 1231	HISTORY OF ENGLISH LITERATURE - II	CO 1: Sensitize students to the changing trends in English literature in the 18th and 19th centuries and connect it with the sociocultural and political developments. CO 2: Develop the critical thinking necessary to discern literary merit CO 3: Be able to recognize paradigm shifts in literature CO 4: Be able to identify techniques, themes and concerns CO 5: Connect literature to the historical developments that shaped the English history.
Core Course IV –EN 1342	20th CENTURY MALAYALAM LITERATURE IN ENGLISH TRANSLATION	CO1: To introduce the students to the richness of twentieth century Malayalam writing CO2: To provide the students a basic understanding of twentieth century Malayalam Writing CO3: To introduce to them some of the major twentieth century Malayalam writers CO4: To help them analyse and appreciate twentieth century Malayalam literature.
Core Course V –: EN 1441	READING PROSE	CO1: To help students understand and appreciate different types of prose writing. CO2: To introduce to them the basics concepts of style and literary devices in prose. CO3: To acquaint them with cultural diversity and divergence in perspectives. CO4: To enable them to write creatively and critically.
Complementary Course 5 –EN 1331	HISTORY OF ENGLISH LITERATURE - III	CO1: To understand how people lived during various ages in Britain. CO2: To understand what sort of social and political organisations evolved there. CO3: To understand what the beliefs and practices of the people were ie. how the culture of Britain evolved. CO4: To understand what kind of literature emerged out of these conditions.
Foundation Course II –: EN	INFORMATICS	CO1: To update and expand basic informatics skill and attitudes relevant to the emerging knowledge

1421		society CO2: To equip students to utilize the digital knowledge resources effectively for their chosen fields of study
Complementary Course7 - EN 1431	HISTORY OF ENGLISH LANGUAGE	CO1: To familiarize students with the origin and development of the English Language CO2: To make them aware of the changes in different areas of the language.
Core Course - EN 1541	LITERARY CRITICISM	CO1: To give the students a historical overview of the critical practices from classical period to the present. CO2: To introduce to them some of the significant concepts that had a seminal influence on the development of critical thought. CO3: To develop in them a critical perspective and capacity to relate and compare various critical practices and schools. CO4: To help them read and analyze literary texts from different perspectives.
Core Course VII: EN 1542	INDIAN LITERATURE IN ENGLISH	CO1: To introduce students to Indian writing in English. CO2: To broaden and sharpen their aesthetic and analytical skills.
Core Course VIII -: EN 1543	FILM STUDIES	CO1: To give the students basic knowledge in the history, art and culture of motion picture. CO2: To introduce to them the key concepts in film studies. CO3: To help them analyze and appreciate films. CO4: To enable them pursue higher studies and careers in film.
Core Course IX - EN 1544	LINGUISTICS AND PHONETICS	CO1: To equip students with a thorough knowledge of the various aspects of the English language CO2: To sensitize them to the nuances of spoken and written forms of English CO3: To help them overcome specific problems resulting from mother tongue interference. CO4: It explain the key concepts in linguistics CO5: They develop a neutral accent and improve their general standard of pronunciation CO6: They speak globally intelligible English
Core Course 10 - EN 1545	POST COLONIAL LITERATURES IN ENGLISH –	CO1: To introduce students to Post Colonial literature, life and culture CO2: To broaden their aesthetic and intellectual faculties
Open Course I -: EN 1551.1	COMMUNICATIVE APPLICATIONS IN ENGLISH	CO1: To help the students attain high level proficiency in all the four language skills. CO2: To equip them for competitive examinations and various International English Language Tests. CO3: To enhance their career prospects and

		employability. CO4: To help them develop their personality by fine tuning their communication and presentation skills. CO5: They may be able to use English for international communication. CO6: They can engage in all kinds of communication activities – informal, formal/business related and academic. CO7: Able to perform well in language tests and competitive examinations.
Core Course 11 -: EN 1641	WORLD CLASSICS	CO1: To introduce students to the world of the classics in literature. CO2: To broaden their outlook and sensibility. CO3: Able to read and appreciate classical works. CO4: Able to evaluate classical texts critically. CO5: Able to place and assess their own culture and classics.
Core Course 12- EN 1642	METHODOLOGY AND PERSPECTIVES OF HUMANITIES	CO1: explain the key concepts in literary theory and criticism CO2: the students should be able to make sense of literature CO3: the students should be able to read literature critically from a theoretical perspective
Core Course XIII -: EN 1643	ENGLISH FOR THE MEDIA	CO1: Able to explain the nature and scope of the communication media. CO2: Able to write headlines and articles for newspapers and magazines and design their content. CO3: Able to produce and present scripts and programmes for Radio and TV. CO4: Able to design and write webs, blogs and advertisements
Core Course XIV: EN 1644	WOMEN'S WRITING	CO1: The students will have an awareness of class, race and gender as social constructs and about how they influence women's lives. CO2: The students will have acquired the skill to understand feminism as a social movement and a critical tool. CO3: They will be able to explore the plurality of female experiences. CO4: They will be equipped with analytical, critical and creative skills to interrogate the biases in the construction of gender and patriarchal norms.
Elective Course –EN 1661.1	TRANSLATION STUDIES	CO1: explain the concepts and theories of translation. CO2: undertake various translation works. CO3: find employment as translators.
LANGUAGE COURSES		
B.A/BSc[EN1111.1], B.Com [EN1111.2] &2(a) [EN	Listening, Speaking and Reading	CO1: The general objective of the course is to make the students proficient communicators in English. CO2: It aims to develop in the learners the ability to understand English in a wide range of contexts.

1111.3]		CO3: The main thrust is on understanding the nuances of listening, speaking and reading English. CO4: The course is a step towards preparing the learners to face situations with confidence and to seek employment in the modern globalized world. CO5: As knowledge of English phonetics will help the students to listen and to speak English better, they would be given rudimentary training in English phonetics. CO6: It also enhances the student's general standard of spoken English. CO7: The knowledge of the phonetic alphabets/symbols will help the students to refer the dictionary for correct pronunciation.
Foundation Course I for BA/BSc - ISSUES: EN 1121	WRITINGS ON CONTEMPORARY	CO1: Have overall understanding of some of the major issues in the contemporary world. CO2: Able to respond empathetically to the issues of the society. CO3: Can. read literary texts critically.
B.A/B Sc [EN1211.1] & 2(a) [CG1271]	ENVIRONMENTAL STUDIES	CO1: To aware students about various environmental issues
EN 1212.1, BCom: 1211.2 & Career related 2(a):1211.3	MODERN ENGLISH GRAMMAR AND USAGE	CO1: To help students have a good understanding of modern English grammar. CO2: To enable them produce grammatically and idiomatically correct language. CO3: To help them improve their verbal communication skills.
B. A, B. Sc EN: 1311.1 & Language Course V (English III): for Career related 2(a) EN: 1311.3	WRITING AND PRESENTATION SKILLS	CO1: They can understand the mechanism of general and academic writing. CO2: Help recognize the different modes of writing. CO3: It improve their reference skills, take notes, refer and document data and materials. CO4: Helps to prepare and present seminar papers and project reports effectively.
BA/BSc: EN 1411.1 & Career related 2(a): EN 1411.3	READINGS IN LITERATURE	CO1: They can understand and appreciate literary discourse. CO2: Able to look at the best pieces of literary writing critically. Can analyze literature as a cultural and interactive phenomenon.

BA ENGLISH LANGUAGE AND LITERATURE (REVISED)

Programme outcome	PO 1: A comprehensive understanding of the discipline of literary studies PO 2: Realize the divergent and plural voices that come in to the making of the corpus of literary studies. PO 3: Understand literature as one of the many arts that seeks literary expression and its close connection with other art forms like painting, music, dance, movie and so on down the ages. PO 4: Imbibe the importance of multidisciplinary approach to understand the nuances of literary expressions.

	PO 5: Understand the specific socio-cultural backdrop of the formation of literary representations. PO 6: Form an awareness of the multiplicities of such socio-cultural realities that shape literary representations and to critique the inherent hegemony. PO 7: The ability to trace the development of the English language from the early writings to its present day use in specific contexts. PO 8: Address the requirements of the language use in a globalized context PO 9: Ensure the importance of study of the English language in relation to the study of language and literature of the mother tongue. PO 10: Have improved competence in translation and to view the same not only as a tool for cultural transmission but also as skill acquisition. PO 11: Comprehended the current modes of writings – that which encompasses the issues related to race, gender, ethnicity, climate change etc. and realize the role of literature in inculcating social sensitiveness PO 12: The competence to identify the literary voices of dissent from diverse parts of the globe and to reflect on the popular culture and literature. PO 13: A basic knowledge of research methodology and other areas related to the faculty of research. PO 14: Imbibe a research-oriented approach to the study of humanities in connection with the basic understanding of social sciences to initiate a multidisciplinary approach of study. PO 15: Contribute to the realm of knowledge production with an increased intellectual, creative, critical and multidisciplinary capability.
Course Code	**Titles of Courses**	**Course Outcome**
Core Course 1: EN 1141	Introduction to Literary Studies I	CO 1: Introduce varied literary representations. CO 2: Familiarize students with the nature and characteristics of literature. CO 3: Discuss the nature and characteristics of literature CO 4: Introduce two key genres of literature, poetry and drama. CO 5: Possess a foundational understanding of poetry and drama.
Complementary Course 1: EN 1131	Popular Literature and Culture	CO 1: Encourage the student to think critically about popular literature. CO 2: Understand the categories of the —popular and the —canonical CO 3: Identify the conventions, formulas, themes and styles of popular genres such as detective fiction, the science fiction and fantasy, and children‘s literature. CO 4: An assessment of the literary and cultural value of popular texts C O 5: Sensitize students to the ways in which popular fiction reflects and engages with questions of gender, identity, ethics and education.

Core Course 2: EN 1241	Introduction to Literary Studies II	CO 1: Cherish a taste for the literary among students CO 2: Comprehend the nature and characteristics of different genres of literature. CO 3: Detailed awareness of the two key genres of literature- fiction and non-fiction. CO 4: Imbibe the representational possibilities of the respective genres. CO 5: Instill a creative and critical aptitude.
Complementary Course 3: EN 1231	Art and Literary Aesthetics	CO 1: The student will be able to engage with literature in a broader, educated perspective. CO 2: The student will be able to think with greater originality and independence about the complex interrelationship between different art forms. CO 3: The student will be trained to engage sensitively and intelligently in new readings of literature. CO 4:The course develops an understanding of the co-relation between literature, film, music and painting and encourages ways of reading and seeing which deliver insights into literary texts. CO 5: Initiate students to implement the multidisciplinary scope of art and literary studies.
Core Course 3: EN 1341	British Literature I	CO 1: Comprehend the origins of English literature CO 2: Understand the specific features of the particular periods CO 3: Understand themes, structure and style adopted by early British writers CO 4: Gain knowledge of growth and development of British Literature in relation to the historical developments CO 5: Understand how writers use language and creativity to capture human experience through different literary forms
Foundation Course 2: EN 1321	Evolution of the English Language	CO 1: Knowledge of the paradigm shifts in the development of English. CO 2: Well aware of the historical paradigm shifts in the history of English Language CO 3: Imbibe the plural socio cultural factors that went in to the shaping of the English Language. CO 4: Place English language in a global context. CO 5: Recognize the politics of many _Englishes‘
Complementary Course 5: EN 1331	Narratives of Resistance	CO 1: Be able to identify themes of resistance in different forms and genres of literature. CO 2: Have a sense of the various kinds of injustice related to race, ethnicity, gender etc. prevalent in society. CO 3: Develop an idea of literature as a form of resistance to all forms of totalitarian authority. CO 4: Understand the inter connection between various genres in manifesting resistance CO 5: How resistance is an undeniable presence in the everyday narratives of literary and other artistic expressions.
Core Course 4:EN 1441	British Literature II	CO 1: Sensitize students to the changing trends in English literature in the 18th and 19th

		centuries and connect it with the sociocultural and political developments. CO 2: Develop the critical thinking necessary to discern literary merit CO 3: Be able to recognize paradigm shifts in literature CO 4: Be able to identify techniques, themes and concerns CO 5: Connect literature to the historical developments that shaped the English history.
Core Course 5: EN 1442	Literature of the 20th Century	CO 1: Understand social, political, aesthetic and cultural transformations of early twentieth century in relation to literary texts with their specific formal features. CO 2: Know the stylistic features of Modernism and its various literary and aesthetic movements CO 3: Critically engage the ideas that characterise the period, especially the crisis of modernity CO 4: Understand contemporary responses to the historical incidents that mark the period CO 5: Understand and use critical strategies that emerged in the early twentieth century.
Complementary Course 7: EN1431	Philosophy for Literature	CO 1: Have a diachronic understanding of the evolution of philosophy from the time of Greek masters to 20th century CO 2: Have an awareness of the major schools of thought in western philosophy. CO 3: Have a healthy epistemological foundation at undergraduate level that ensures scholarship at advanced levels of learning. CO 4: Talk about some of the key figures in Philosophy. CO 5: Analyze and appreciate texts critically, from different philosophical perspectives.
Core Course 6: EN 1541	Literature of Late 20th Century and 21st Century	CO 1:Identify the various socio-cultural changes that evolved in the late modernist period CO 2: Relate to the diverse currents of postmodern literature and its reflections in the contemporary ethos CO 3: Assimilate the inherent multiplicities and fluidity of societal perspectives CO 4: Develop an innate sympathy for the tragedies of Holocaust and an awareness regarding the environmental impasses threatening the modern world CO 5: Empathise with the marginalised and comprehend their predicament.
Core Course 7: EN 1542	Postcolonial Literatures	CO 1: Ability to critique colonial history CO 2: Awareness of the socio-political contexts of colonialism and postcolonialism CO 3: Understanding of the effects of colonialism in various nations CO 4: Knowledge of the key terms in post-colonial thought CO 5: Study of the race and gender dynamics in postcolonial literature
Core Course 8: EN 1543	20th Century Malayalam Literature in Translation	CO 1: Generate knowledge about the varied milieu of the development and growth of Malayalam literature and be sensitive to its socio cultural and political implications. CO 2: Get a basic knowledge of the literary and the non-

		literary works produced inMalayalam CO 3: Discern the vibrancy of Malayalam literature CO 4: Sense the distinctness of the socio-cultural arena in which Malayalam literature isproduced CO 5: Know the value of literature produced in regional languages and key role oftranslation in the growth of language and literature
Core Course 9: EN 1544	Linguistics and Structure of the English Language	CO 1: Understand the phonological and grammatical structure of English Language CO 2: Be able to analyse actual speech in terms of the principle of linguistics CO 3: Improve the accent and pronunciation of the language CO 4: Introduce the students to internationally accepted forms of speech and writing in English. CO 5: Explore the ancient linguistic tradition of India
Core Course 10: EN 1545	Criticism and Theory	CO 1: Analyze and appreciate texts critically, from different perspectives. CO 2: Appreciate Indian Aesthetics and find linkages between Western thought and Indian critical tradition. CO 3: Show an appreciation of the relevance and value of multidisciplinary theoretical models in literary study. CO 4: Demonstrate an understanding of important theoretical methodologies and develop an aptitude for critical analysis of literary works. CO 5: Gain a critical and pluralistic understanding and perspective of life
Open Course: 1 EN 1551.1	Communicative Applications in English	CO 1: Learners majoring in some subject other than English will have a working knowledge of the type of English that is required in real life situations, especially the globalized workplace. CO 2: Well trained to write clear, well-framed, polite but concise formal letters and e-mails for a variety of purposes CO 3: Acquire some of the soft-skills that go hand in hand with English –namely, the ability to prepare for an interview and face it confidently, the ability to participate boldly a group discussion and contribute meaningfully to it, the ability to make a simple and interesting presentation of 5-10 minutes before a mixed audience on anything that they have learnt in the previous semesters of the UG programme
Core Course 11: EN 1641	Gender Studies	CO 1: Recognize the patriarchal bias in the formation of history and knowledge. CO 2: Analyse the ways in which gender, race, ethnicity class, caste and sexuality construct the social, cultural and biological experience of both men and women in all societies. CO 3: Recognize and use the major theoretical frames of analysis in gender studies CO 4: CO 5: Interrogate the social constructions of gender and the limiting of the same in to the male-female binary in its intersections with culture, power,

		sexualities and nationalities CO 5: Examine gender issues in relation to the sustainable goals of development
Core Course 12: EN 1642	Indian Writing in English	CO 1: Make students aware of different aspects of colonization like cultural colonization. CO 2: Trace the historical and literary genesis and development of Indian Writing in English CO 3:Acquaint them with the major movements in Indian Writing in English across varied period and genres CO 4: Address the plurality of literary and socio-cultural representations within Indian life as well as letters. CO 5:Enhance the literary and linguistic competence of students by making them aware of how language works through literature written in the subcontinent.
Core Course 13: EN 1643	Film Studies	CO 1: Recognize the language of films and use it creatively. CO 2: Analyze films from both technical and non-technical perspectives CO 3: Engage questions of social justice and gender justice by critiquing representations of culture. CO 4: Use film as a medium of communication CO 5: Derive an interest in various careers related to film
Core Course 14: EN 1644	World Classics	CO 1: Understand the study of Classics as a means of discovery and enquiry into the formations of great literary works and how the rich imagery of these classical works continues beyond the twentieth century. CO 2: Recognize the diversity of cultures and the commonalities of human experience reflected in the literature of the world. CO 3: Imbibe a fair knowledge in the various Classical works from different parts of the world, at different time periods, across cultures. CO 4: Examine oneself and one‘s culture through multiple frames of reference, including the perception of others from around the world. CO 5: Develop and aesthetic sense to appreciate and understand the various literary works with a strong foundation in the World Classics.
Elective Course1: EN 1661.1	Translation Studies	CO 1: Comprehend and practise the skills required to become a professional translator CO 2: Help learners recognize the art involved in translation and encourage translation as a profession CO 3: Acquire clarity regarding problems of translation CO 4: Procure and improve language and vocabulary skills CO 5: undertake an independent translation project.
Elective Course 2: EN 1661.2	American Literature	CO 1. Instill a sense of the —Americanness that characterizes American literature CO 2. Enable the students to place American literature within the corpus of world literature even while identifying its uniqueness. CO 3. Identify the themes and narratives particular to

		American literary expressions CO 4. Generate interest in a field of specialization CO 5. Enquire about the recent and more popular forms of literature.
Language Courses		
B.A/BSc[EN1111.1], B.Com [EN1111.2] &2(a) [EN 1111.3]	Listening, Speaking and Reading	The general objective of the course is to make the students proficient communicators in English. It aims to develop in the learners the ability to understand English in a wide range of contexts. The main thrust is on understanding the nuances of listening, speaking and reading English. The course is a step towards preparing the learners to face situations with confidence and to seek employment in the modern globalized world. As knowledge of English phonetics will help the students to listen and to speak English better, they would be given rudimentary training in English phonetics. It also enhances the student's general standard of spoken English. The knowledge of the phonetic alphabets/symbols will help the students to refer the dictionary for correct pronunciation.
Foundation Course I for BA/BSc EN 1121	WRITINGS ON CONTEMPORARY ISSUES	1. Have an overall understanding of some of the major issues in the contemporary world. 2. Respond empathetically to the issues of the society. 3. Read literary texts critically
Common for B.A/B Sc [EN1211.1] & 2(a) [CG1271]	ENVIRONMENTAL STUDIES	1.To make the students aware about various environmental issues
Common for BA/BSc: EN 1212.1, BCom: 1211.2 & Career related 2(a):1211.3	MODERN ENGLISH GRAMMAR AND USAGE	1. To help students have a good understanding of modern English grammar. 2. To enable them produce grammatically and idiomatically correct language. 3. To help them improve their verbal communication skills. 4. To help them minimise mother tongue influence.
Common for B. A, B. Sc EN: 1311.1 & Language Course V (English III): for Career related 2(a) EN: 1311.3	WRITING AND PRESENTATION SKILLS	To familiarize students with different modes of general and academic writing. 2. To help them master writing techniques to meet academic and professional needs. 3. To introduce them to the basics of academic presentation 4. To sharpen their accuracy in writing.
EN 1411.2 for B.A, B.Sc and BCom	READINGS IN LITERATURE	To sensitize students to the aesthetic, cultural and social aspects of literature. 2. To help them analyze and appreciate literary texts.

MA ENGLISH LANGUAGE AND LITERATURE		
Programme outcome	The Programme Outcomes at the end of the M.A Degree Programme in English Language and Literature will be: • to demonstrate the ability to engage critically with a wide range of selected texts byoffering interpretations and evaluations from multiple perspectives • to demonstrate an understanding of the formal structure of the various genres • to show an awareness of the literariness of literary language • to demonstrate the ability to analyse and explain the complexities and subtleties of human experience • to be able to relate the socio-politico-historical context to the evolution of the forms,styles, and themes of texts • to demonstrate the research and language skills necessary to do independent,innovative research • to show they have understood contemporary pedagogic principles and practices in teaching both language and literature • to demonstrate an ability to communicate effectively in a variety of language situations	
Course title	**Titles of Courses**	**Course Outcome**
EL 211	Chaucer to the Elizabethan Age	At the end of the course, students will be able to: 1.display an awareness of the major historical events and the socio-cultural context which shaped the medieval and early Renaissance period and literature 2.explain the impact of the Renaissance on the thought and literature of the period 3.explain how socio-historical factors have influenced individual texts and how individual texts are representative of their age 4.identify and explain the formal and literary features of each genre and text, and how they contribute to the complexity of values and emotions represented in the texts 5. analyze and explain the similarities and differences between various types of the drama of the age 6.demonstrate how different critical perspectives have resulted in various readings of selected texts
EL 212	Shakespeare Studies	At the end of this course, students will be able to: 1.evaluate the significance of the socio- political and historical events which shaped the perspective of the Elizabethan Age 2.relate the texts selected for study to the genres/ subgenres they belong to and identify and explain their formal/ stylistic/ literary features 3.identify discourses addressed in the plays and critically evaluate them 4.analyze the similarities and differences between the various types of drama 5.attempt critical reviews of Shakespearean plays

		based on contemporary theoretical perspectives and their reworking/ adaptations.
EL 213	The Augustan Age	At the end of the course, students will be able to 1.gain a comprehensive understanding of Puritanism, its aftermath and subsequent fall and the restoration of the monarchy in England 2.display an awareness of specific features of Neo-Classicism in English literature 3.acquire a critical understanding of the emergence and popularity of prose and novel in England, during the period 4.assess critically the conflicting trends in the literature of the age
EL 214	Romantics and Victorians	At the end of the course, students will be able to: 1.relate the texts selected for study to the genres they belong to and identify and explain the structural, formal, stylistic and literary features. 2.display an awareness of the contributions of the poets, novelists and prose writers 3. explain and analyze the smilarities and differences between the different types of novels of the Romantic and Victorian ages 4.understand the social and literary changes that influenced drama in the century 5.evaluate the implications of the critical responses of the period
EL 221:	From Modernism to the Present	At the end of this course, students will be able to: 1.demonstrate an understanding of how the age affected the literature and the various genres 2.demonstrate a knowledge of the major movements that influenced British and European literature 3.analyze critically and explain the features of modernism 4.evaluate critically the texts in terms of its stylistic and formal features
EL 222:	Indian Writing in English	At the end of the course, the students will be able to: 1.display an in-depth awareness of the major historical events and the socio-cultural contexts which moulded the various genres in Indian Writing in English 2.analyze how the sociological, historical, cultural and political context impacted the texts selected for study 3.evaluate critically the contributions of major Indian English poets, dramatists, prose writers, novelists and short story writers 4.develop a literary sensibility and display an emotional response to the literary texts and cultivate a sense of appreciation for them 5.apply the ideas encapsulated in Indian Aesthetics to literary texts
EL223:	American Literature	At the end of this course, the students will be able to: 1.demonstrate an awareness of the socio-political and cultural history of America 2.identify key ideas and characteristic perspectives or

		attitudes as expressed in American literature 3.demonstrate knowledge of the contributions of major literary periods, works and persons in American literature and recognize their continuing significance 4.evaluate the thoughts, beliefs, customs, struggles, and visions of African American writers 5.compare/contrast literary works through an analysis of genre, theme, character, and other literary devices
EL224	Critical Studies I	At the end of the course it is expected that the students 1.would sharpen their analytical and critical faculties drawing inspiration from the readings provided. 2.gain an idea of the evolution of critical thinking in Europe and India in the 20th and 21st century. 3.understand the function of language in the construction and analysis of literary and cultural phenomena. 4.gain an insight into the interconnected nature of these major schools of thought leading to a shift from the paradigmatic to the syntagmatic.
EL 231:	Linguistics and Structure of the English Language	At the end of this course, students will: 1.have developed an awareness of the basic nature, branches, and history of linguistics 2.have become familiar with contrastive linguistics 3.be able to analyse language units based on their phonological, morphological and syntactical features 4.have developed an awareness of the principles and limitations of ICA and PSG 5.be able to explain the transformation of sentences based on TG grammar
EL232	Critical Studies II	At the end of the course it is expected that the students 1.would sharpen their analytical and critical faculties drawing inspiration from the readings provided. 2.gain an idea of the evolution of critical thinking in Europe and India in the 20th and 21st century. 3.understand the function of language in the construction and analysis of literary and cultural phenomena. 4.gain an insight into the interconnected nature of these major schools of thought leading to a shift from the paradigmatic to the syntagmatic.
EL 241:	English Language Teaching	At the end of this course, students should: 1.have acquired knowledge of the historical and current theories in ELT 2.be able to assess critically the implications of the various approaches, methods, techniques 3.have developed the ability to critically evaluate syllabi, teaching materials, and evaluation procedures.
EL 242	Cultural Studies	This course will try to develop theoretical tools and

		critical perspective to interrogate the advertisement, film, television, newspaper and internet texts that saturate our lives.
EL 233.2 - Elective Course:	Canadian and Australian Literatures	At the end of the course students will be able to: 1.demonstrate an awareness of the spread and reach of literatures from Canada and Australia 2.explain the politics and ideology in canon formation 3.display an awareness of how socio-cultural contexts shape literary experiences 4.conceptualize concepts like ethnicity, diversity, national culture, and multiculturalism 5.engage critically with decolonization
EL 233.5 – Elective Course:	Women's Writing	At the end of this course, students will be able to: 1.describe and evaluate the roles of such categories as race, gender and sexuality, disability, class, ethnicity, and religion 2.demonstrate an advanced critical understanding of the cultural history of women's writing 3.demonstrate the ability to use and respond to historicist, feminist and other critical approaches to women writers
EL 243.1 – Elective Course:	Comparative Literature	At the end of the course, the students will be able to: 1.display an awareness of the major transformations in the concept of comparative literature 2.assess the cultural similarities and dissimilarities represented in the literature of different languages 3.demonstrate the ability to analyze texts across languages and cultures 4.assess the flow of forms and concepts across language and national boundaries 5.appreciate the universal character of literature and arts
EL 244.4 – Elective Course:	Dalit Writing	At the end of the course, students will be able to: 1.come into contact with key modern Dalit writers and thinkers and their varied concepts 2.enhance their understanding of the issues at stake in the contemporary Dalit movement 3.evolve an in-depth grasp of the field at the levels of experience as well as concept 4.extend their awareness of the social and aesthetic questions being raised in the writing.

DEPARTMENT OF CHEMISTRY

Programmes offered	**BSc CHEMISTRY**
	MSc CHEMISTRY

BSc CHEMISTRY

Programme Outcome	• Develop scientific outlook scientific attitude and scientific temper • Develop skill in experimenting , analyzing and interpreting data • Develop research attitude and adopt scientific method of identifying, analyzing and solving research problems in an innovative way • Apply physical and mathematical theories and principles in the context of chemical science • Use chemistry related soft wares for drawing structure and plotting graphs • Use instruments- potentiometer, conductometer, pH meter and • colorimeter. • Acquire skill in safe handling of chemicals including hazardous materials. • Identify the ingredients in household chemicals, use them in a critical way • Predict analytical procedures, compare experimental, theoretical and graphical methods of analysis • Predict reaction mechanism in organic reactions • Understand the terms, concepts, methods, principles and experimental techniques of physical, organic, inorganic and analytical chemistry • Develop critical thinking and adopt healthier attitudes towards individual, community and culture through the course of Chemistry • Become cautious about environmental aspects and impact of chemicals in soil, water and air and adopt ecofriendly approach in all frontiers of life • Become responsible in consumption of natural resources and adopt measures for sustainable development. • Visit Chemical factories and industries with scientific curiosity • Develop writing skills and presentation skills using audio visual aids • Compare and share knowledge in an interdisciplinary manner • Inculcate spirit of originality, novelty, and necessity in scientific research • Contribute to the academic and industrial requirements of the society • Get motivated to higher studies - PG Degree in different branches of Chemistry, BEd Degree in Physical Science, and job opportunities in industrial and non industrial sectors • Adopt safer life skills in a human friendly and ecofriendly way

Course code	Title Of Course	Course Outcome
CH 1141	**INORGANIC CHEMISTRY I**	• Upon completion of this course, the students • Discuss the course of development of structure of atom. • Apply rules for filling electrons in classifying elements into s, p,d and f blocks • Define various scales of electronegativities and their • applications • Define Effective nuclear charge and Slater's rules

		• Discuss about diagonal relationship and anomalous behaviour of hydrogen and other first element in each group. • Correlate and predict general properties of s and p block elements based on their electronic configuration. • Realise applications of s and p block elements in sustainable and renewable energy sources. • Define various concepts of acids and bases. • Understand reactions in non aqueous solvents. • Realise various causes, effects and control measures of environmental pollution. • Review national movements for environmental protection.
CH 1221	CHEMISTRY – ITS ORIGIN, METHODOLOGY AND IMPACTS	• Appreciate the development of scientific theories through years with specific examples • Develop curiosity and scientific attitude towards the application of chemistry in daily life • Outline a procedure for experimentation • Appraise the current development in Chemistry • Identify the common ingredients of house hold synthetic products • Discriminate and classify chemicals used as drugs,explosives, • Get motivated in visiting chemical Industries • Adopt safety measures in handling chemicals • Draw titration curves and explain theory of volumetric titrations • Select suitable indicators for acid base titration knowing the theories of acid base titration and indicators • Develop computational skills • Discuss separation techniques of filtration and chromatographic techniques
CH 1341	INORGANIC CHEMISTRY II	• Understand various theories of chemical bonding and their limitations. • Predict stability of atoms and the nature of bonding between atoms. • Discuss various applications of intermolecular interactions • Understand chemistry of glass, silicates and silicones • Discuss chemistry of Boron compounds, oxyacids and oxides of Phosphorous • Understand refractory carbides, nitrides, borides and silicides. • Describe various types of halogen compounds. • Understand chemistry of noble gas • Understand inorganic polymers and their applications. • Distinguish between types of nuclear reactions. • Describe measurement of radioactivity. • Discuss applications of radioactivity in various fields. • Understand introductory concepts of nanochemistry

		• Suggest methods of synthesizing nano materials. • Appreciate the variety of applications of nanomaterials.
CH 1441	ORGANIC CHEMISTRY – I	• Recall the fundamentals of organic chemistry. • Apply the electron displacement effects to compare acidity, basicity and stability of organic compounds/intermediates. • Judge the reaction mechanism of substitution and elimination on the basis of the structure of alkyl halides. • Summarise the chemistry of reaction intermediates. • Discuss optical, geometrical and conformational isomerism of organic compounds. • Use CIP rules to predict the configuration of organic compounds • Differentiate photochemical and thermal reactions. • Discuss theory of colour and constitution and the method of synthesis of dyes • Explain aromaticity, orientation effect and mechanism of aromatic electrophilic substitution. • Demonstrate the method of determination of reaction mechanism.
CH 1541	PHYSICAL CHEMISTRY I	• Identify, compare and explain the properties and behaviourof ideal and real gases, knowing kinetic theory of gases and different types of molecular velocities and • collision properties. • Perform numerical problems of gases under a set of conditions • Differentiate between amorphous and crystalline solids, Understandanisotropy, symmetry and types of crystals, X- ray diffraction methods of study of crystal structure, identify the imperfections in crystals • understand the physical aspects of surface tension and viscosity of liquids and the basics of liquid crystals and • their applications representation of lattice planes and calculation of interplanar spacing, draw the crystal structures of NaCl and CsCl • Recalling the basic concepts of solutions, concentration terms, Raoult's law and colligative properties • Determination of colligative properties and molecular mass of solute • Understand the working principle Electro-Chemical cells • Design and Determine the potentials ofelectrochemical systems • Assess the nature of electrolytes in terms of dissociation and ionic conductance of electrolytes in terms of mobility of ions • Integrate the theory into practical applications of conductometric titrations
CH 1542	INORGANIC CHEMISTRY III	• Discuss the electronic configuration and related properties of transition elements and inner transition

		elements • Understand preparation of selected transition metal compounds,lanthanides and actinides • Compare lanthanide and actinide contraction and their consequences. • Name coordination complexes,organometallics, discuss their properties and bonding • Understand stability of complexes and factors affecting stability • Discribe isomerism in coordination compounds • Discuss spectrochemical series, CFSE and their consequences • Correlate geometry , stability and Jahn Teller effect and its causes • Discuss reaction mechanisms and applications of coordination compounds • Name and Classify organometallic compounds • Discuss preparation and properties and bonding of carbonyls • Identify the role of organometallic compounds in organic synthesis • Discuss the role of inorganic ions in biological systems and biochemistry of haemoglobin, myoglobin, cytochromes, iron sulphur proteins • Discuss various bioinorganic processes like photosynthesis, working of sodium potassium pump, etc • Discribe various aspects of metallurgy,and instrumental methods of analyses viz., spectrophotometric methods, thermal methods and tools available to measure nanomaterials
CH 1543	ORGANIC CHEMISTRY II	• Describe the preparation of hydroxy, carbonyl & amino compounds, carboxylic acids and organo Mg, Li & Zn compounds. • Distinguish primary, secondary & tertiary alocohols and amines. • Write reaction steps in ascending & descending of alcohol and aliphatic acid series, interconversion of aldose and ketose, chain lengthening and shortening of aldoses. • Explain the structure of glucose, fructose, sucrose, starch and cellulose. • Predict the outcome and mechanism of simple organic reactions, using a basic understanding of the reactivity of functional groups • Illustrate the use of organic reagents in synthesis. • Discuss fundamental principles of supramolecular and green chemistry
CH 1641	PHYSICAL CHEMISTRY II	• Understand basic concepts oF thermodynamics, spectroscopy and group theory • Apply laws of thermodynamics in physical and chemical

		processes and real system • Classify processes, thermodynamic basis properties and systems • Discuss the second law of thermodynamics and Assess • thermodynamic applications using second law of thermodynamics. • Discuss basic concepts of statistical thermodynamics • Solve numerical problems based on thermodynamics and thermochemistry • Understand the basics of spectroscopic techniques- Rotational, Vibrational and Raman Spectroscopy • Compare NMR and ESR spectroscopy and their applications • Evaluate physical and chemical quantities using non-spectroscopic techniques. • Identify the elements of symmetry and Determine the point groups of simple molecules • Differentiate diamagnetism and paramagnetism, measurement of magnetic susceptibility • Correlate dipole moment with geometry of molecules
CH 1642	ORGANIC CHEMISTRY III	• Outline the chemistry of simple heterocyclic compounds • Classify amino acids, proteins, nucleic acids, drugs, terpenes, vitamins, lipids and polymers. • Discuss the synthesis of amino acids, peptides, drugs and polymers. • Describe the isolation and structure of terpenes and alkaloids. • Explain the mechanism and techniques of polymerisation. • Discuss the principle of UV, IR, NMR and Mass spectroscopy. • Interpret spectroscopic data to elucidate the structure of simple organic compounds. • Use the simple organic reactions to elucidate the structure of quinoline, piperine and conine.
CH 1643	PHYSICAL CHEMISTRY III	• Recall the basic physical concepts in quantum mechanics, colloids, adsorption, Chemical Kinetics, catalysis, chemical and ionic equilibria, phase equilibria, binary liquid systems and photochemistry • Understand the basic concepts involved in quantum mechanics, colloids, adsorption, Chemical Kinetics, catalysis, chemical and ionic equilibria, phase equilibria, binary liquid systems and photochemistry • Derive and Interpret important theories and equations involved in physical chemistry • Demonstrate the origin of quantum numbers by correlating the Cartesian and spherical polar coordinates of hydrogen atom. • Identify and recognize the applications of various principles, equations and physical processes • Perform calculations involving physical concepts and equations • Analyze` graphical representations (phase diagrams, two and three components, vapour pressure – composition and boiling point –composition, temperature-composition) present in physical chemistry.
CH1442	Inorganic Qualitative	• Obey Lab safety instructions, develop qualities of punctuality, regularity and scientific attitude, out look and scientific

	Analysis	temper (GOOD LAB PRACTICES) • Develop skill in safe handling of chemicals, take precaution against accidents and follow safety measures • Use glass wares ,electric oven, burners and weighing balance • Develop skill in observation , prediction and interpretation of reactions • Detect solubility, and classify compounds according to their solubility
CH1544	INORGANIC VOLUMETRIC ANALYSIS	• Develop skill in selecting, primary and secondary • standards • Develop skill in weight calculation of primary standards weighing by electronic balance, making of solutions of definite strength (standard solutions) • Use sophisticated glass wares, calibrate apparatus and develop skill in keen observation , prediction and interpretation of results • Perform volumetric titrations under acidimetry- alkalimetry, permanganometry, dichrometry, iodimetry-iodometry,cerimetry, argentometry and complexometry • Compare the advantages and disadvantages of different volumetric techniques • Practice Punctuality and regularity in doing experiments and submitting Lab records
CH1545	PHYSICAL CHEMISTRY EXPERIMENTS	• Upon completion of this course, the students • Develop Scientific outlook and approach in • applying principles of physical chemistry in chemical systems/reactions • Use computational methods for plotting graph • Desribe systematic procedures for physical experiments • Acquire Instrumentation skill in using conductometer, potentiometer, refractometer, stalagmometer and Ostwald's viscometer. • Compare theory with experimental findings • Practice Punctuality and regularity in doing experiments and submitting Lab records
CH1644	ORGANIC CHEMISTRY EXPERIMENTS	• Develop curiosity in systematically analyzing organic compounds • Differentiate and identify organic compounds by their characteristic reactions towards standard reagents • Confirm their findings by preparing solid derivatives, and thus understand reliability of experimental results • Determine physical constants of organic compounds • Separate organic compounds by TLC/paper/column chromatographic techniques • Prepare soaps • Apply the principles and techniques in organic chemistry, thereby developing skill in designing an experiment to synthesize and purify organic compounds • Practice systematic scientific procedure and prepare adequate report of them • Understand the chemistry behind organic reactions
CH1645	GRAVIMETRIC EXPERIMENTS	• Upon completion of this course, the students • Understand precipitation techniques in quantitative context • Appreciate the application of silica crucible and sintered crucible in gravimetry • Practice technique of making, diluting solutions on

		quantitative basis • Realise the factors affecting precipitation/crystallisation • Take precautionary measures in filtration , drying and incineration of precipitates • Understand the principle of colorimetry to estimate Fe3+ and ammonia
CH1646	PROJECT	• Develop an aptitude for research in chemistry • Practice research methodology and literature search • Critically choose appropriate research topic and presentation
CH 1551.1	CHEMISTRY AND ITS APPLICATIONS	• Appreciate the history of evolution of science • Develop curiosity and scientific attitude towards the application of chemistry in daily life • Appraise the current development in Chemistry and contribution of chemistry for sustainable development • Identify the common ingredients of house hold synthetic products • Classify chemicals according to their uses • Critically choose cosmetics and cleansing agents for daily use • Adopt safer and healthier life skills in harmony with nature
CH 1551.2	FUNDAMENTALS OF CHEMISTRY AND ITS APPLICATION TO EVERYDAY LIFE	• Appreciate the evolution of Science and Chemistry and the early form of chemistry • Understand the dvelopement of Chemistry as a discipline and the role of chemistry as a central science • Discuss the fundamental properties of atom, structure of atom, classification of elements in to a periodic table • Differentiate between simple molecules and giant molecules and the bonding nature • Explain different types of bonding and predict stability • Compare properties of graphite and diamond and their structural differences • Identify house hold chemicals, their advantages and disadvantages • Become aware of chemical hazards and the precautions in handling chemicals • Beware of food adulterants • Critically select chemical fertilizers,artificial sweeteners, beverages, and food preservatives
CH1651.3	POLYMER CHEMISTRY	• Differentiate between Natural and synthetic polymers • Understand polymerization process of monomeric units • Critically analyse the advantages and disadvantages of polymers • Analyse different Applications of Polymers • Identify the properties of polymers. • Realize the necessity of biodegradable substitutes for a sustainable development

MSC CHEMISTRY		
Programme Outcome	• Develop a better understanding of the current chemical principles, methods and theories with the ability to critically analyse at an advanced level. • Acquire solid knowledge of classical and modern experimental techniques and interpretation of results; thereby acquire the ability to plan and carry out independent projects. • Develop the qualities of time management and organization, planning and executing experiments. • Have a good level of awareness of the problems associated with health, safety and environment. • Understand how chemistry relates to the real world and be able to communicate their understanding of chemical principles to a lay audience and as well apply the knowledge when situation warrants. • Learn to search scientific literature and databases, extract and retrieve the required information and apply it in an appropriate manner. • Demonstrate proficiency in undertaking individual and/or team-based laboratory investigations using appropriate apparatus and safe laboratory practices. • Develop analytical solutions to a diversity of chemical problems identified from application contexts; critically analyse and interpret qualitative & quantitative chemical information's. • Set the scene to make use of the wide range of career options open to chemistry graduates.	
CH 211	INORGANIC CHEMISTRY I	• Upon completion of this course, the students will be able to employ crystal field theory in analysing the splitting of d orbitals in octahedral, tetragonal, square planar, tetrahedral, trigonal bipyramidal and square pyramidal fields, calculate Crystal Field Stabilization Energy and Interpret Octahedral Site Stabilization Energy. • Apply Jahn-Teller theorem and demonstrate evidence for JT effect, static and dynamic JT effect. • Illustrate MOT for octahedral and tetrahedral complexes with and without pi bonds and construct MO diagrams. • Critically evaluate data from a variety of analytical chemistry techniques and apply knowledge of the statistical analysis of data. • Interpret complexometric titration redoX titrations, gravimetric titrimetric and titrations in non-aqueous solvents. • Apply TG, DTA and DSC in the study of metal complexes. • Explain the functioning of the frontier materials in inorganic chemistry like Solid Electrolytes, Solid oxide fuel cells, Rechargeable battery materials, Molecular materials and fullerides. • Explain the preparation, properties and structure

		of isopoly acids of Mo, W and V and heteropoly acids of Mo and W. • Explain preparation and properties of xenon fluorides, and noble gas compounds, aluminosilicates, zeolites and silicones and identify the importance of shape selectivity. • Identify the chemical processes occurring naturally in earth's atmospheric, aquatic and soil environments and evaluates the impacts of human perturbations to these processes.
CH 212	ORGANIC CHEMISTRY I	• write down the IUPAC name of polycyclic, spirocyclic and heterocyclic compounds and draw the structures from the IUPAC name of these compounds. • determine R and S, P and M, E and Z configuration of compounds with chiral centres, biphenyls, allenes, spiranes and draw the configurations in dash and wedge formula, or zig –zag configurations. • detect prochirality in a compound and explain relevance of prochirality . • explain chiral centre, chiral axis and chiral plane with examples, stability of conformations, stereoselective and stereospecific reactions. • calculate Cotton effect of a compound from its structure and configuration. • explain different methods for generation of free radical and different types of free radical reactions- Predict the products in a free radical reaction. • describe different types mechanism of substitution, elimination, hydrolysis and addition reactions. • differentiate the rate, mechanism and stereochemistry influenced by solvent, substrate structure, intermediate stability. • predict the products or reactants or reagents in selected types of reaction • design the mechanism of selected reactions.
CH 213	PHYSICAL CHEMISTRY I	• Upon completion of this course, the students will be able to outline the development of quantum mechanics and its tools and apply them in determining the wave functions and energies of moving particles. • recognize the nature of adsorption and propose theories and choose theoretical and instrumental methods of measurements of surface property. • understand theory and mechanism of catalytic action. • correlate thermodynamic properties and apply

		them in systems. • understand theories, mechanism and, kinetics of reactions and solve numerical problems • identify point groups and construct character table and predict hybridisation and spectral properties of molecules.
CH 214	INORGANIC CHEMISTRY PRACTICALS – I	• Upon completion of this course, the students will be able to interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors. • estimate volumetrically the concentration of Zn, Mg and Ni using EDTA and the volumetric estimation of Fe. • estimate volumetrically the hardness of water and concentration of Ca in water samples using EDTA. • estimate colorimetrically the concentration of Chromium – (using Diphenyl carbazide), Iron (using thioglycollic acid), Iron (using thiocyanate), Manganese (using potassium periodate), Nickel (using dimethyl glyoxime). • carry out the preparation of the metal complexes Potassium trioxalatochromate (III), Tetraammoniumcopper (II) sulphate, Hexamminecobalt (III) chloride. • record the UV spectra, IR spectra, magnetic susceptibility, TG, DTA and XRD of the complexes prepared.
CH 215	ORGANIC CHEMISTRY PRACTICALS – I	• interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors. • determine the correct method for separation of a binary mixture and make the separated compounds in pure form. • develop thin layer chromatogram of a compound and determine its purity. • separate two compounds by column chromatography. • utilize the synthetic procedures and reagents to convert a compound into another. Differentiate the products by spectroscopic methods. • use green chemical principles in the synthesis. • solve GC MS and LC MS of a compound to ascertain purity and identity, apply the basic principles
CH 216	PHYSICAL CHEMISTRY PRACTICALS – I	• interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors. • construct the Freundlich and Langmuir isotherms for adsorption of acetic/oxalic acid on active

		charcoal/ alumina and determine the concentration of acetic/ oxalic acid • determine the rate constant, Arrhenius parameters, rate constant and concentration using kinetics • construct the phase diagram and determine the composition of an unknown mixture • construct the ternary phase diagram of acetic acid chloroform-water system and out the procedure in an • unfamiliar situation to find out the composition of given homogeneous mixture. • construct the tie-line in the ternary phase diagram of acetic acid chloroform-water system • determine distribution coefficient using distribution law. • determine the distribution law. equilibrium constant employing the coordination number of Cu2+ in copper ammonia complex
CH 221	INORGANIC CHEMISTRY II	• obtain the term symbols of dn system and determine the splitting of terms in weak and strong octahedral and tetrahedral fields. • explain the correlation diagrams for dn and d10-n ions in octahedral and tetrahedral fields and interprets electronic spectra of complexes. • applies magnetic measurements in the determination of structure of transition metal complexes. • relates crystalline structure to X-ray diffraction data and the reciprocal lattice and explains the diffraction methods • explains crystal defects . • elaborates the structure of selected compounds of AX, AX2, AmX2, ABX3 and spinels. • explains the electronic structure of solids using free electron theory and band theory. • explain the structure and reactions of S–N, P–N, B–N, S– P compounds and boron hydrides. • analyse the topological approach to boron hydride • structure and estimates styx numbers and apply Wade's rules in borane and carboranes. • identify the electronic configurations and term symbols of lanthanides and actinides. • sketches the shapes of f orbital and shows their splitting in cubic ligand field. • elaborates the importance of the beach sands of Kerala and their important components.
CH 222	ORGANIC CHEMISTRY II	• discuss the fundamentals, operating principles and instrumentation of separation

		techniques. • differentiate the principle and applications of phase transfer catalysis with examples. • describe the various methods of determining reaction mechanisms and basic thermodynamic principles of organic reactions. • explain the Hammet parameters of reaction and design an experiment to confirm the mechanism of a reaction. • identify different types of rearrangement reactions, determine the product of the reaction applying migratory aptitude, and reproduce the evidences for the mechanism of the reaction. • understand that the outcomes of pericyclic reactions may be understood in terms of frontier orbital interactions, correlation diagram, Mobius and Huckel approach. • recall and define the various types of pericyclic reaction; define such terms as 'conrotatory', 'suprafacial'. • predict and rationalise the outcomes of pericyclic reactions including stereospecificity, regioselectivity, and stereoselectivity. • state the synthetic importance of the above cycloaddition and rearrangement reactions, and give disconnections of target compounds corresponding to these reactions. • describe the fate of excited molecule based on Jabolonoski diagram, predict the course of an organic photochemical reaction and identify the product with the type of functional group. • propose synthetic routes to a variety of molecules, starting from simple precursors with correct stereochemistry and reagents of selected reactions.
• CH 223	PHYSICAL CHEMISTRY II	• apply quantum mechanical principles in solving both real and imaginary spherical harmonics systems-multi electron systems and analyse spectral lines. • describe and explain the physical and chemical principles that underlie molecular structure determination techniques like microwave, vibrational, Raman and electronic spectroscopy. • predict likely spectral characteristics of given molecular species, and be able to rationalise those characteristics on the basis of structural and electronic arguments. • acquire knowledge of basics of statistical mechanics and compare statistical methods. • understand and apply of theories of heat capacity.

		• understand theories of electrolytes and electrochemical reactions. • ascertain the application of electrochemistry in industrial fields. • understand the theories and applications behind various types of analytical techniques in electrochemistry. • acquire skill in solving numerical problems.
• CH 231	INORGANIC CHEMISTRY III	• demonstrate knowledge of advanced content in the areas of inorganic chemistry such as in organometallic compounds, bioinorganic compounds, spectroscopic methods in inorganic Chemistry and nuclear chemistry. • examine the bonding in simple and polynuclear • carbonyls with and without bridging and complexes with linear π donor ligands. • explain the structure and bonding of ferrocene and dibenzenechromium with the help of MO theory. • understand fundamental reaction types and mechanisms in organometallics and to employ them to understand selected catalytic processes in industry. • contrasts the thermodynamic and kinetic stability of complexes, analyses the factors affecting stability of complexes and explains the methods of determining stability constants. • classifies ligand substitution reactions and explains its kinetics and various mechanisms. • analyze the chemical and physical properties of metal ions responsible for their biochemical action as well as the techniques frequently used in bioinorganic chemistry such as oxygen transport, e-transfer, communication, catalysis, transport, storage etc. • explain the principles of spectroscopic methods employed in inorganic chemistry and their applications in the study of metal complexes. • demonstrate a knowledge of fundamental aspects of the structure of the nucleus, radioactive decay, nuclear reactions, counting techniques. • evaluate the role of nuclear chemistry to find the most suitable measures, administrative methods and industrial solutions to ensure sustainable use of the world's nuclear resources.
• CH 232	ORGANIC CHEMISTRY III	• describe and explain the physical and chemical principles • that underlie molecular structure determination techniques such as UV-visible, IR, mass and NMR

		spectroscopy. • apply knowledge of molecular structure determination using UV-visible, IR, mass and NMR spectroscopic techniques to identify and/or characterise chemical compounds from experimental data. • calculate λmax of a compound, apply IR frequency table to determine the functional groups present in the molecule, interpret mass spectrum of compound from fragmentation. • predict likely spectral characteristics of given molecular species; solve the structures of unknown molecules using appropriate spectroscopic techniques. • devise a 2 D NMR of a compound based on learned principles and solve the structure of a compound based on • NMR data. • Discuss organic transformations with organometallic compounds and predict the products of the reactions. • propose the retro synthetic pathways to a variety of molecules propose mechanisms for chemical reactions, given starting materials, reagents, conditions, and/or products. • compare the reactions and mechanism and determine the products of a selected set of reactions; identify protecting group strategies. • devise combinatorial compounds. • method to create a library of give examples of stereoselective, regioselective and chemo-selective reductions and oxidations.
CH 233	PHYSICAL CHEMISTRY III	• understand the theories of chemical bonding and their application with help of approximate methods predict the • nature of orbitals and molecular spectra. • compare MO and VBT. • understand the properties of gases and liquids and the nature of the intermolecular forces in them. • describe the principle behind the determination of surface tension and coefficient of viscosity. • describe and explain the physical and chemical principles that underlie molecular structure determination techniques like NMR, ESR, Mossbauer, NQR and PES spectroscopy. • judge the degrees of freedom of systems and understand theories of irreversible thermodynamic systems. • understand the quantum mechanical and non-quantum mechanical methods in computational

		chemistry, potential energy surface and basis functions. • write the Z matrix of simple molecules. • acquire skill in solving numerical problems.
CH 234	INORGANIC CHEMISTRY PRACTICALS – II	• estimate a simple mixture of ions (involving quantitative separation) by volumetric and gravimetric methods. • perform COD, BOD, DO, TDS analysis. • predict likely spectral characteristics of given metal compexes solve the structures of unknown metal compexes using appropriate spectroscopic techniques • and magnetic measurements . • analyse the XRD of simple substances. • interpret TG and DTA curves.
CH 235	ORGANIC CHEMISTRY PRACTICALS – II	• predict likely spectral characteristics of given molecular species; solve the structures of unknown molecules using appropriate spectroscopic techniques • estimate quantitatively the Aniline, Phenol, glucose, • Ascorbic acid and Aspirin in a sample • estimate colorimetricaly paracetamol, protein and ascorbic acid • use green chemical principles in the synthesis
CH 236	PHYSICAL CHEMISTRY PRACTICALS – II	• construction of appropriate graphs and the evaluation of errors. • verify Onsager equation and Kohlraush's law conduct metrically . • determine electrolyte. • determine the concentration of a liquid mixture using a refractometer . • determine the unknown concentration of a given glucose solution.
CH 241	CHEMISTRY OF ADVANCED MATERIALS	• properties of nanomaterials and its applications. • understand and apply characterization tools for analysing nano structures. • outline and recognize the types of polymerization, kinetics and mechanisms. • understand the stereochemical aspects and methods for the determination of molecular weights of polymers. • discuss the synthesis and applications of selected classes of speciality polymers. • distinguish the types and important applications of smart materials.
CH 242 (a)	INORGANIC CHEMISTRY IV	• explain MO and Ligand field theory with the support of group theory and construct the MO diagram of octahedral complexes. • apply character tables to find out the Infrared and Raman active modes for C2v, C3v and D4h.

		• assimilate the concepts of molecular recognition, self- assembly, dynamic combinatorial chemistry and supramolecular chirality, and be aware of the most important work in the field. • understand the nature of bonding in metal atom clusters and distinguish Low nuclearity and High nuclearity carbonyl clusters. • perform the electron counting schemes in cluster compounds. • differentiate the different types of cluster molecules and understand their utility in catalysis. • understand and explain the role of metal ions in biological systems and give examples for the use of metals in medicine. • differentiate the defects arising due to deficiency and excess presence of metal ions in the body. • explain the acid base concept in non aqueous media and identify the reactions taking place in selected non aqueous solvents.
CH 243 (a)	Dissertation	• demonstrate an advanced theoretical and technical knowledge of chemistry as a creative endeavour; analyse, • interpret and critically evaluate scientific information. • present information, articulate arguments and conclusions, • in a variety of modes, to audiences in their field of research. • as part of a team or individually, design, conduct, analyse and interpret results of an experiment, and effectively • communicate these in written reports and other formats. • develop an understanding of the requirements to undertake independent research in a chemistry field. • demonstrate an understanding of the relationship between scientific research and the progress of new knowledge in a global scenario.
CH 243 (b)	Visit to R & D Centre	• Understand the relevance of independent supervised research in a chemistry field and the need of well- • developed judgement, adaptability and accountability as a practitioner or learner

DEPARTMENT OF ZOOLOGY	
Programmes offered	**BSc ZOOLOGY**
BSC ZOOLOGY	
Programme Outcome	Sree Narayana College for Women which is an arts and science college uses direct and indirect method of assessments for course outcome. In direct method we should assess the knowledge and skills. Direct measures of student learning require students to demonstrate their subject knowledge and various types of skills especially in practical. Some examples of direct measures includes objective tests, writing of essays, various presentations, assignments and case and/or project study. The different courses and their outcomes are enlisted.
Course	**Outcomes of course**
Animal Diversity I Course code – ZO1141	• To provide the students with an in-depth knowledge of the diversity in form, structure and habits of invertebrates. • To learn the basics of systematic and understand the hierarchy of different categories. • To learn the diagnostic characters of different phyla through brief studies of examples. • To obtain an overview of economically important invertebrate fauna.
Animal Diversity II	• To provide the students with an in-depth knowledge of the diversity in form, structure and habits of invertebrates. • • To learn the basics of systematic and understand the hierarchy of different categories. • • To learn the diagnostic characters of different phyla through brief studies of examples. • • To obtain an overview of economically important invertebrate fauna.
Methodology and Perspectives of Zoology	• To introduce the methodology and perspectives of Science in general so as to enable the students to systematically pursue Zoology in relation to other disciplines that come under the rubric of science. • • To learn the fundamental characteristics of science as a human enterprise • • To understand how science works • • To study to apply scientific methods independently
Cell Biology	• To educate the student on the fundamental structure, biochemistry and function of the cell. • • To study the ultra-structure of prokaryotic and eukaryotic cells
Practical I - Methodology and Perspectives of Zoology, Animal Diversity I and II Course Code	• To provide a hands on training experience in anatomy through simple dissection and mountings • • To familiarize students with conventional organ system in common, easily available animals. • • To emphasize the adage that 'seeing is believing' typical examples and economically important specimen (preserved) to be studied.
Genetics and Biotechnology Course Code	• To educate the students on the underlying genetic mechanism operating in man and state of the art bio-techniques • • To learn the mechanism of crossing over and inheritance patterns in man. • • To understand the principles and techniques involved in DNA technology and get an overview of modern techniques like PCR, Hybridoma technology, gene therapy and human cloning
Immunology and Microbiology	• To update the student on the scope and importance of clinical immunology and create an awareness about the inherent dangers of microbes • • To enable the student to understand the principles and mechanisms of

	immunology • • To learn the malfunctioning and disorders of the immune system • • To get a broad understanding of microbes and their economic importance with special reference to pathogenic forms
Physiology and Biological chemistry	• To improve the student's perspective of health and biology through in-depth study of human physiology • • To study the different systems and the inherent disorders/ deficiencies involved therein. • • To learn the structure and functions of bio-molecules and their role in metabolism
General Informatics, Bioinformatics and Molecular Biology	• To expand basic informatics skill and attitudes relevant to the emerging society and also to equip the student to effectively utilize the digital knowledge resources for the study of Zoology • • To review the basic concepts and functional knowledge in the field of informatics • • To create awareness about nature of the emerging digital knowledge society • • To create awareness about social issues and concerns in the use of digital technology • • To learn the nature, application and scope of Bioinformatics
Developmental Biology and Experimental Embryology	• To familiarize the student with the principle of developmental biology and provide him a bird's eye view of sophisticated embryological techniques • • To study the various stages involved in the developing embryo • • To study the initial developmental procedures involved in Amphioxus, Frog and chick • • To procure information on state- of- the art experimental procedures in embryology.
Ecology, Ethology, Evolution and Zoogeography	• To enhance the student's concept of nature and her resources and appreciating the process and product of organic evolution • • To learn the principles, applications and management of environmental science. • • To study the inherent morphological and physiological bases of behavioural pattern exhibited by vertebrates. • • To get an exhaustive knowledge of organic evolution with special reference to man.
Biotechnology, Immunology and Microbiology	• To expertise the student to carry out routine hematological and microbiological techniques • 1) To prepare and observe chromosomal arrangements during cell division • 2) To study chromosomal aberrations in man • 3) To gain of broad knowledge of conventional biotechnological procedures • 4) To perform routine blood analysis.
Physiology and Biological Chemistry, Molecular Biology and Bioinformatics.	• To demonstrate basic principles in physiology • • To learn clinical procedures for blood & urine analysis • • To make the student skillful in simple biochemical laboratory procedures.
Human Health and Sex Education	• To redress problem associated with health and sex thereby promoting fitness and well being. • • To make the student understand the importance of good health. • • To educate the student on clean sexual habits thereby warding off sexually transmitted diseases.
Zoology Project and Field study	• To develop an aptitude for research in Zoology • To inculcate proficiency to identify appropriate research topic and

	presentation
Zoology Complementary Course I Animal Diversity I	• To inculcate in the student a love and understanding of the fascinating world of invertebrates • •Impart to the student a concrete idea of the evolution, hierarchy and classification of invertebrate phyla • •Understanding the basics of systematics by learning the diagnostic and general characters of various groups • • Getting an overview of typical examples in each phyla • •To study the economic importance of invertebrates with the special reference to insect pests
Zoology Complementary Course II Animal Diversity II	• To inculcate in the student a fascination for nature and learn the bionomics of vertebrates. • • Learn the evolution, hierarchy and classification of different classes of chordates • • To get an overview of the morphology and physiology of typical examples. • • To study the adaptations and economic importance of specific vertebrates.
Zoology Complementary Course III Functional Zoology	• To familiarize students on the physiology of their own body and urge them to take precautionary measures to safeguard their health. • •To study the structure and function of each system in the human body. •To study the etiology of common physiological disorders, syndromes and diseases.
Zoology Complementary Course IV Applied Zoology	• To introduce the methodology and perspectives of applied branches of zoology with a view of educating youngsters on the possibilities of self employment • To learn the basic principles involved in the culture and breeding of common edible and ornamental fishes of Kerala and the art of aquarium keeping. • To get a basic understanding of human genomics and reproductive biology including stem cell research and prenatal diagnostic techniques
Practical I -Animal Diversity I &II, Functional Zoology and Applied Zoology	• To provide an hands- on training experience in anatomy through simple dissections and mountings • To familiarize students with conventional organ system in common, easily available animals. • · To emphasize the adage that 'seeing is believing' typical examples and economically important specimen (preserved) to be studied. • · To study and carry out routine clinical analysis of blood and urine

DEPARTMENT OF MALAYALAM

PROGRAMME OFFERED: BA MALAYALAM (CORE,COMPLEMENTARY, LANGUAGE COURSES)

BA MALAYALAM

PROGRAMME OUTCOME	PO1 – TO ACQUIRE A SOLID FOUNDATION IN MALAYALAM LANGUAGE, LITERATURE AND CULTURE. PO2- TO EXTEND THE ASIC KNOWLEDGE OF MOTHER TONGUE-MALAYALM FROM THE 12 LEVEL PO3- TO CREATE A LOGICAL FRAMEWORK ON USING LANGUAGE AND LITERATURE PO4- TO FAMILARIZE THE BROAD SPECTRUM OF NEW TRENDS IN MALAYALAM LITERATURE PO5- TO ACQUIRE SKILLS FOR GATHERING INFORMATION FROM VARIOUS RESOURCES AND TO UNDERSTAND ITS EFFECTIVE USES PO5- TO TRANSFORM STUDENTS AS GRADUTES WITH CALIBRE AND CONTENT IN MALAYALM LITERATURE AS TEACHERS AND RESEARCHERS WHO ARE ABLE TO TRANSFROM THE SOCIETY FOR THE BEST.

Course		Outcome
ML 1111.1	MALAYALA KAVITHA LANGUAGE COURSE	CO1 – UNDERSTAND THE AESTHETIC SENSE OF MALAYALAM POETRY CO2 – UNDERSTAND THE BASIC CONCEPTS IN POETRY OF DIFFERENT TIME PERIODS INCLUDING CLASSISM, NEO CLASSISM, ROMATICISM, REALISM, MODERNISM AND POST- MODERNISM CO3 – UNDERSTAND SPECIAL TERMS INCLUDING FEMINISM, ECO CRITICISM, MODERNITY AND MODERNISM IN CONNECTION WITH MALAYALAM POETRY CO4 – RECOGNISE 'BHAVA', 'RASA' IN POETIC SENSE CO5 – IDENTIFY THE 'VRITHAM' AND 'ALANKARAM' IN POETRY C06 – CREATE AN AESTHETIC SENSE TO APPROACH NEEW LITERARY WORKS IN MALAYALAM LANGUAGE
ML 1141	NOVEL – CHARITHRAVUM PADAVUM	CO1 – UNDERSTAND THE AESTHETICS SENSE OF NOVEL FROM ANCIENT PERIOD TO CONTEMPORARY TIMES. CO2 – UNDERSTAND THE TERMS CLASSISM,ROMATICISM, REALISM, MODERNISM AND POST MODERNISM IN CONNECTION WITH MALAYALAM NOVEL. CO3 – RECOGNISE THE CULTURAL DIFFERENCE DURING PERIODS IN CONNECTION WITH MALAYALAM NOVELS. CO4 – CREATE AN AESTHETIC SENSE TO APPROACH NEW WORKS ON NOVEL.
ML 1131.1	KERALA CULTURE	CO1 – UNDERSTAND THE STRONG INTERVENTIONS BETWEEN CULTURE AND LITERATURE CO2 - UNDERSTAND THE EVOLUTION IN CULTURE DUE TO THE INTERFERENCE OF FOREIGN INVADERS. C03- RECOGNISE THE SPECIALITIES IN THE CULTURE OF

		KERALA SUCH AS FOOD, DRESS, RELIGION AND HERIDITY CO4- INDENTIFY AND ANALYSE THE CHANGES IN LITERATURE IN ACCORDANCE WITH THE FAST CHANGING CULTURE
ML 1211.1	GADHYA SAHITHYAM	CO1– UNDERSTAND THE AESTHETICS SENSE OF MALAYALAM PROSE CO2 – UNDERSTAND THE DIFFERENCE OF SHORT STORIES , NOVELS AND ESSAYS CO3- RECOGNISE THE LINGUISTIC AND ASTHETIC CHANGES IN DIFFERENT PERIODS CO4- IDENTIFY THE DIFFERENCE ETWEEN CLASSISM, NEO CLASSISM,ROMATICISM,REALISM,MODERNISM AND POST MODERNISM ON THE BASIS OF MALAYALM PROSE
ML 1241	NADAKAM CHARITHRAM PADAM PRAYOGAM	CO1- – UNDERSTAND THE AESTHETICS SENSE OF DRAMA CO2- UNDERSTAND THE TERMS COMEDY AND TRAGEDY IN CONNECTION WITH MALAYALAM DRAMA CO3- UNDERSTAND THE THORY OF'RASA' CO4- RECOGNISE 'RASA' THE STATE OF MIND ARE CREATED BY 'BHAVAS' CO5- IDENTIFY THE DIFFERENCE ON FAMOUS WORKS 'MALAYALA SHAKUNTHALAM','KALI','BHAGNABHAVANAM' AND 'AVANAVANK KADAMBA'
ML 1231.1	KERALA CULTURE	CO1- UNDERSTAND THE MODERNITY IN KERALA CO2- UNDERSTAND THE BASIC CONCEPTS OF EVOLUTIION OF PRINTING TECHNOLOGY, EDUCATION, PUBLIC HEALTH AND PUBLIC TRANSPORATATION IN KERALA CO3-IDENTIFY DIFFERNET TYPES OF STAKE HOLDERS IN KERALA CO4- RECOGNISE AND ANALYSE THE DIFFERENT RULING DYNASTIES IN THE SUB CONTINENT, THEIR DEMOCRATICAL IDEOLOGIES AND PROS AND CONS IN THEIR RULING PERIOD
ML 1311.1	DRISHYA KALA SAHITHYAM	CO1- UNDERSTAND THE ASIC DIFFERNECE IN LITERATURE OF PERFORMING ART FORMS CO2- UNDERSTAND THE AESTHETIC SENSE OF TRANSLATED MALAYALAM DRAMA ' MALAYALA SHAKUNTHALAM' CO 3- RECOGNISE THE DIFFERENCE BETWEEN ' ATTAKADHA','THULAL','DRAMA' AND 'SCRIPT'.
ML 1341	SAHITHYA SIDHANDANGAL , POURASTYAVUM PASHCHATHYAVUM	CO1– UNDERSTAND THE AESTHETICS SENSE OF EASTERN AND WESTERN APPROACHES CO2- UNDERSTAND THE ASIC CONCEPTS OF EASTERN AND WESTERN CRITICISM INCLUDING 'KAVI', 'KAVYAM','SAHRIDHAYAM','RASA','BHAVA','CLASSISM', 'R OMATICISM' AND 'MPDERNISM' CO3 – UNDERSTAND THE BASIC CONCVEPTS OF 'ALANKARA' AND ' VRITHASHASTRA' INCLUDING ' UPAMA', 'ROOPAKAM' , 'SWAHAVOKTHI' , ' VASANTHATHILAKAM' CO4- UNDERSTAND THE THEORY OF 'RASA' AND ' DHWANI' CO5- RECOGNISE THE WESTERN LITERARY TERMS INCLUDING SYMBOLISM , EXPRESSIONISM AND EXTENSIONALISM C06- IDENTIFY THE DIFFERNET EASTERN AND WESTERN METHODS OF APPROACH INTO MALAYALAM LITERATURE.
ML 1321	ATHUNIKA SANKETHIKA VIDHYAYUM MALAYALA	CO1- UNDERSTAND THE CONNECTION BETWEEN INFORMATION TECHNOLOGY AND LITERATURE

	BHASA PADANAVUM	CO2- UNDERSTAND THE UNICODE FOND USED IN MALAYALAM LANGUAGE CO3- INDENTIFY THE OPPORTUNITIES OF MALAYALAM COMPUTING
ML 1331	PARISTHITHI SIDHANTHAVUM AVISHKARAVUM	CO1- UNDERSTAND THE BASIC CONCEPTS OF ECOLOGY AND ECO CRITICISM CO2- UNDERSTAND THE NEVER DYING RELATION BETWEEN THE HUMAN RACE AND MOTHER NATURE IN LITERATURE CO3- IDENTIFY THE ECOLOGY IN MALAYALAM LITERATURE INCLUDING NOVEL,POETRY , SHORT STORY AND DRAMA
ML 1411.1	VINIMAYAM ,SARGHATH MAKA RACHANA, BHASHAAVABHOTHAM	CO1- UNDERSTAND THE BASIC CONCEPTS OF COMMUNICATION INCLUDING INTER PERSONNEL, SOCIALISING, LINGUISTICS INCLUDING TRANSLATION CO2- UNDERSTAND THE OPPORTUNITIES IN TRANSLATION FIELD CO3- INDENTIFY TH CULTURAL SIMILIARITIES IN DIFFERENT LANUAGES CO4- IDENTIFY THE PROLEMS AND POSSILITIES IN TRANSLATION
ML1441	MALAYALA KAVITHA	CO1 – UNDERSTAND THE AESTHETIC SENSE OF MALAYALAM POETRY CO2 – UNDERSTAND THE BASIC CONCEPTS IN POETRY OF DIFFERENT TIME PERIODS INCLUDING CLASSISM, NEO CLASSISM, ROMATICISM, REALISM, MODERNISM AND POST- MODERNISM CO3 – UNDERSTAND SPECIAL TERMS INCLUDING FEMINISM, ECO CRITICISM, MODERNITY AND MODERNISM IN CONNECTION WITH MALAYALAM POETRY CO4 – RECOGNISE ‘BHAVA’, ‘RASA’ IN POETIC SENSE CO5 – IDENTIFY THE ‘VRITHAM’ AND ‘ALANKARAM’ IN POETRY C06 – CREATE AN AESTHETIC SENSE TO APPROACH NEEW LITERARY WORKS IN MALAYALAM LANGUAGE
ML 1431	DALIT EZHUTH PENN EZHUTH SITHANDHAVUM AVISHVARAVUM	CO1- UNDERSTAND THE BASIC CONCEPTS OF DALIT LITERATURE AND FEMINISM CO2- UNDERSTAND THE THEORIES OF DALIT LITERAUTURE IN DIFFERENT COUNTRIES CO3- UNDERSTAND THE ASIC CONCEPTS OF FEMINISM CO4- IDENTIFY THE THEORIES OF FEMININE LITERATURE AND DALIT LITERATURE IN DRAMA, POETRY, NOVEL, SHORT STORIES.
ML 1541	BHASHA SHASTRAM , BHASHA CHARITHRAM	CO1- UNDERSTAND THE IMPORTANCE OF MALAYALAM LINGUISTICS CO2- UNDERSTAND THE ASIC CONCEPTS INCLUDING ‘SWANIMUM’, ‘SWANAM’, ‘ROOPAM’, ‘ROOPIMAM’. CO3- UNDERSTAND THE EVOLUTION OF MODERN MALAYALAM LANGUAGE CO4- IDENTIFY THE CULTURAL , SOCIAL AND RELIGIOUS BASIS OF DIALECT IN KERALA
ML 1542	CHERU KADHA PADANAM	CO1– UNDERSTAND THE AESTHETICS SENSE OF MALAYALAM PROSE CO2 – UNDERSTAND THE DIFFERENCE OF SHORT STORIES , NOVELS AND ESSAYS CO3- RECOGNISE THE LINGUISTIC AND ASTHETIC CHANGES IN DIFFERENT PERIODS

		CO4- IDENTIFY THE DIFFERENCE ETWEEN CLASSISM, NEO CLASSISM,ROMATICISM,REALISM,MODERNISM AND POST MODERNISM ON THE BASIS OF MALAYALM PROSE
ML 1543	NADODI VIJNJANEEYAM	CO1- UNDERSTAND THE BASIC CONCEPTS OF FOLKLORE CO2- UNDERSTAND THE RELATION ETWEEN FOLKLORE AND CULTURE CO3- IDENTIFY THE FOLK FORMS OF KERALA INCLUDING FOLK DANCE FORMS AND FOLK MUSIC
ML 1544	JEEVA CHARITHRAM ATHMAKADHA YATRA ANUBHAVAM	CO1- UNDERSTAND THE ASIC CONCEPTS SUCH AS BIOGRAPHY, AUTO BIOGRAPHY AND TRAVELLOGUE CO2- UNDERSTAND THE DIFFERENCE IN BIOGRAPHY AND AUTO BIOGRAPHY CO3- IDENTIFY THE BIOGRPHY , AUTO BIOGRAPHY AND TRAVELOGUE AS LITERATURE
ML 1545	CHALACHITHRAPADANAM	CO1 – UNDERSTAND THE AESTHETIC SENSE OF SCRIPTS IN MALAYALAM CO2- UNDERSTAND THE CHANGES MADE TO SCRIPT WHILE REALISATION INTO FILMS CO3- UNDERSTAND THE BASIC CONCEPTS SUCH AS PRE PRODUCTION, PRODUCTION AND POST PRODUCTION
ML 1641	MADHYAMA LOKAM	CO1- UNDERSTAND THE BASIC CONCEPTS IN MEDIA INCLUDING PRINT MEDIA, RADIO, TELEVISION AND SOCIAL MEDIA. CO2- UNDERSTAND THE EVOLUTION IN THE FIELD OF MEDIA CO3- INDENTIFY THE BASIC CONCEPTS INCLUDING EDITORIAL, NEWS STORY , DAILY , WEEKLY AND MAGAZINE. CO4- IDENTIFY THE DEVELOPMENT OF MEDIA IN KERALA
ML 1643	MALAYALA KAVITHA	CO1 – UNDERSTAND THE AESTHETIC SENSE OF MALAYALAM POETRY CO2 – UNDERSTAND THE BASIC CONCEPTS IN POETRY OF DIFFERENT TIME PERIODS INCLUDING CLASSISM, NEO CLASSISM, ROMATICISM, REALISM, MODERNISM AND POST- MODERNISM CO3 – UNDERSTAND SPECIAL TERMS INCLUDING FEMINISM, ECO CRITICISM, MODERNITY AND MODERNISM IN CONNECTION WITH MALAYALAM POETRY CO4 – RECOGNISE ‘BHAVA’, ‘RASA’ IN POETIC SENSE
ML1642	MALAYALA NIRUPANAM	CO1- UNDERSTAND THE BASIC CONCEPTS IN MALAYALAM GRAMMAR INCLUDING ‘PADHAM’, ‘VAIKYAM’, ‘VACHAKAM’ CO2- UNDERSTAND THE EVOLUTION OF MALAYALAM GRAMMAR FROM SANSKRIT AND TAMIL CO3- IDENTIFY THE DISPARITY IN MALAYALAM GRAMMAR FROM OTHER LANGUAGES
ML 1644	VIVARTHANAM SIDHANTHAVUM PRAYOGAVUM	CO1- UNDERSTAND THE BASIC CONCEPTS OF COMMUNICATION INCLUDING INTER PERSONNEL, SOCIALISING, LINGUISTICS INCLUDING TRANSLATION CO2- UNDERSTAND THE OPPORTUNITIES IN TRANSLATION FIELD CO3- INDENTIFY TH CULTURAL SIMILIARITIES IN DIFFERENT LANUAGES CO4- IDENTIFY THE PROLEMS AND POSSILITIES IN TRANSLATION

DEPARTMENT OF BOTANY		
Programme Offered	**BSc. Botany (Core andComplementary)**	
BSc BOTANY		
Programme outcome	To impart knowledge of Science is the basic objective of education. •To develop scientific attitude is the major objective to make the students open minded, critical,curious. •To develop skill in practical work, experiments and laboratory materials and equipments along with the collection and interpretation of scientific data to contribute the science. •To understand scientific terms, concepts, facts, phenomenon and their relationships. •To make the students aware of natural resources and environment. •To provide practical experience to the students as a part of the course to develop scientific ability to work in the field of research and other fields of their own interest and to make them fit for society. •The students are expected to acquire knowledge of plant and related subjects so as to understand natural phenomenon, manipulation of nature and environment for the benefit of human beings. •To develop ability for the application of the acquired knowledge to improve agriculture and other related fields to make the country self reliant and sufficient. •Understand and appreciate the role of biology in societal issues, such as the environment and biological resources, biodiversity, ethics and human health and diseases. •To enrich the students with the latest developments in the field of Information technology, Biotechnology, Bio informatics and other related fields of research and development. •To create enthusiasm to understand more about the beautiful planet Earth and to give awareness to the public the need to protect the planet from all kinds of exploitation. •To keep the scientific temper which the student acquired from school level.	
Course code	**Title Of Course**	**Course Outcome**
BO 1141	Angiosperm Anatomy, Reproductive Botany And Palynology	• Develop skills for identification of microscopic structures • Distinguish various tissue systems and internal structure aquaire knowledge about embryo development and pollen grains
BO 1221	Methodology And Perspectives In Plant Sciences	• To familiarize the students with the fundamental characteristics of science and significance of scientific studies • To apply scientific methods independently and familiarize instruments in biological labs • To interpret scientific data using basic statistical methods • To develop skills for microscopic

		specimen preparation.
BO 1341	Microbiology, Phycology, Mycology, Lichenology And Plant Pathology	• Familiarize characteristic features of microbes and their significance • Create awareness about importance of microbes in environment • Generate idea about types of algae, fungi, lichen and their economic as well as evolutionary significance
BO 1441	Bryology, Pteridology, Gymnosperms And Palaeobotany	• Familiarize the students characteristic features and evolutionary significance of bryophytes, pteridophytes and gymnosperms. • Generate awareness about lifecycle of bryophytes, pteridophytes and gymnosperms. Impart knowledge about fossil formation and its significance
BO1541	Angiosperm Morphology, Systematic Botany, Economic Botany, Ethno Botany And Pharmacognosy	• Introduce importance of morphological characters in classification and plant Identification. • Develop skill for herbarium preparation. • Acquire knowledge about economic, ethnobotanical significance and pharmacognosy of plants
BO 1542	Environmental Studies And Phytogeography	• Create awareness about ecosystem and Natural resources. • Generate knowledge about importance of Biodiversity conservation • Understand the need to mitigate pollution and strategies for disaster management • Impart knowledge about phytogeographical regions
BO 1543	Cell Biology, Genetics And Evolutionary Biology	• Create awareness about cellular organelles. • Develop skills to identify cell stages and workout problems in classical genetics. • Introduce different theories of evolution
BO 1641	Plant Physiology And Biochemistry	• Students get a clear understanding of the basic concepts of Physiology and Biochemistry. • Understands photosynthesis, respiration, plant growth regulators, nitrogen metabolism and stress physiology • Familiarization of basic physiological practical procedures. • Students get the basic knowledge about the macromolecules and their overall role in cell metabolism; and secondary

		plant products. • Identification of protein, reducing and non reducing sugar by qualitative tests.
BO 1642	Molecular Biology, General Informatics & Bioinformatics	• Understands DNA as genetic material, develops awareness about chemical composition and different types of DNA including their replication method. • Students understand various molecular aspects of gene expression and regulation of genes • Develops awareness about various academic services applied for their studies • Awareness about features of a computer, different application and system software. • Recognizes the need for safe use of internet and also become aware about health issues related to over usage of computers and mobile phones as well as cyber crimes and cyber laws. • Students will be familiarized to molecular phylogeney, Biological Databases, Sequence analysis, Genomics, Proteomics & Comparative genomics
BO 1643	Horticulture, Plant Breeding & Research Methodology	• Students able to identify and use various horticultural implements • Can propagate plants through grafting, budding and layering &can prepare manures, fungicides etc • Can effectively do plant breeding methods and understands ttheir practical application in betterment of food crops • Can devise an experimental design and carry out a project • Students trained about various steps for the conduct of a research project and write a project report
OPEN COURSE -I (B)		
BO1551.2	Mushroom Cultivation And Marketing	• Identify mushrooms, structure and mode of propagation • Understand commercial mushroom cultivation, marketing and their nutritional value • Better understanding of methods of processing and storage of mushrooms
OPEN COURSE-II		
		• Students are familiarized in preparation

BO1651	Elective Biotechnology And Nano Biotechnology	of culture solutions, sterilization,inoculation of explants, induction of callus and morphogenesis • They are familiarized in biotechnological tools like RFLP, RAPD and PCR techniques • Use of equipments and tools in biotechnology • Understanding of ethical and legal issues in biotechnology and basic knowledge about IPR. • Better understanding of nanosystems, biosensors and application of nanotechnologyin biological systems
BO1646	Study Tour, Project, Viva	• Field trip to a place of plant diversity within or outside Kerala with a minimumduration of 3 days is compulsory. (Field trips are to be conducted for three dayseither as continuous or one day trips). • A brief report of the trip has to be submitted at the time of Practical Examination Project work/Dissertation is compulsory. Students have to begin the project in the 5 thSemester and submit the project report for valuation at the end of 6 thSemester. Viva-Voce may be conducted for each student at the time of Project evaluation.
COMPLEMENTARY COURSE: BOTANY		
BO 1131	Microtechnique, Angiosperm Anatomy And Reproductive Botany	• To develop skills for preparation and identification of microscopic structures • To distinguish various tissue systems and internal structure • To acquire basic knowledge about embryo development and pollen grains
BO 1231	Phycology, Mycology, Lichenology, Bryology, Pteridology, Gymnosperms And Plant Pathology	• To familiarize characteristic features of microbes and their significance in environment • To generate idea about types of algae, fungi, lichen and their economic as well as evolutionary significance • To familiarize the students the characteristic features, life cycle and evolutionary significance of Bryophytes, Pteridophytes and Gymnosperms. • To impart knowledge about diseases in plants

BO 1331	Systematic Botany, Economic Botany, Ethno Botany, Plant Breeding	• To introduce importance of morphological characters in classification and plant identification. • To develop skill in identification of plants. • To acquire knowledge about economic, ethnobotanical significance and pharmacognosy of plants • To get knowledge about plant breeding techniques
BO 1431	Plant Physiology, Plant Ecology, Horticulture And Plant Biotechnology	• To understand physiology of absorption, photosynthesis and respiration. • To study ecosystem and ecological modifications • To generate awareness about horticultural techniques. • To familiarize plant tissue culture techniques
BO1432 (Complementary)	Practical BO1131, BO1231, BO1331 & BO1431	• To develop skill in practical work, experiments and laboratory materials and equipments along with the collection and interpretation of scientific data to contribute the science.
BO1644 (core)	Practical-III (BO1541 & BO1542)	• To develop skill in practical work, experiments and laboratory materials and equipments along with the collection and interpretation of scientific data to contribute the science.
BO1645 (core)	Practical-IV (BO 1543, BO1642, BO1642 & BO1643)	• To develop skill in practical work, experiments and laboratory materials and equipments along with the collection and interpretation of scientific data to contribute the science.

DEPARTMENT OF HINDI		
PROGRAMME OFFERED	**B.A.HINDI LANGUAGE & LITERATURE (CORE & COMPLIMENTARY)**	
COURSE CODE	**Title of the Course**	**Course Outcome**
HN 1321	Information and Computer	The aim of the course is to update and expand basic informatics skills. To review the basic concepts and functional knowledge in the field of informatics. To give theoretical and practical experience in computing. To realize the possibilities of computer and Hindi.
HN 1131	Complementary Course I Secretarial Practice and Official Correspondence in Hindi	The aim of the course is to familiarize official correspondence in Hindi and secretarial practice. To enrich the knowledge of office procedures in Hindi. To update and expand basic secretarial skills and attitudes.
HN 1132	History of India Medieval and Modern Period	The aim of the course is to enrich the knowledge of History and to familiarize with the important events of Indian History from the age of sultanate. To enrich the knowledge of Freedom struggle in India and the historical developments of post independence period.
HN 1231	Complementary Course III Special Author Kabeer Das	The aim of the course is to enrich the knowledge of the famous ancient poet Kabeer Das. To understand the distinct features of Kabeer and the Contemporariness of Kabeer.
HN 1232	Complementary Course IV Literary Creation and Transformation	The aim of the course is to understand the creation of Literature and the elements of different types of Literary theme and craft. To familiarize the Transformation and its formation. To understand the relation between Literature and Transformation.
HN 1331	Complementary Course V – Comparative Literature with Special Reference to Hindi and Malayalam or Sanskrit	The aim of the course is to understand comparative Literature and the use and nature of comparative literature. To know about the similarities between Hindi and Malayalam Literature. To get general awareness of Malayalam and Hindi Literature and to introduce major writers of each literature and their thought and philosophy.
HN 1332	Complementary Course VI - Development of Hindi as Official Language and Communicative Hindi	The aim of the course is to understand different forms of Hindi and the power of Hindi Language. To develop the communication skills in Hindi Language and inculcating values of communication among

		the students.
HN 1431	Complementary Course VII Women's Literature in Hindi	The aim of the course is to show light on the efforts done by women writers in Hindi with special reference to modern Hindi women writers and evaluate their vision about women. To study the growth of women's writing in Hindi – To evaluate the peculiarities of women writers.
HN 1141	Core Course I Hindi Prose	The aim of the course is to enrich the knowledge of prose. To appreciate and criticize prose.
HN 1241	Core Course II History of Hindi Literature upto Ritikal	The aim of the course is to understand the origin and development of the ancient Hindi Literature and different trends of each 'Kal.' To be familiar with great poets like Kabeer, Jayasi, Thulasi, Soor, Bihari and their thought and Philosophy.
HN 1341	Core Course III History of Hindi Literature: Modern period	The aim of the course is to understand the modern trends of Hindi Literature. To realize the development of Prose, Novel, Story, Drama, Sketch, Diary, Report, Auto Biography etc. To appreciate different trends of Hindi Poetry. To understand modern and post modern trends. To familiar with prominent Hindi writers and their major works. To realize the Difference between modernism and Post modernism.
HN 1441	Core Course IV Hindi Drama and One Act plays	The aim of the course is to appreciate and analyze the dramatic elements in literature. To understand the distinct features of Hindi drama. To enrich the knowledge of the art of Drama. To understand the difference between Drama and One Act Plays. To appreciate dramatic efficiency of Mohan Rakesh. To understand the trends in drama since 1960.
HN 1442	Core Course V Premchand's Fiction	The aim of the course is to enrich the knowledge of world famous Hindi writer Premchand. To understand Premchand's Novel and Short stories. To realize the theme, problems and style of Premchand's Fiction. To understand Premchand's pilot age to Hindi Fiction and his vision about Indian Society; and his genius in the Portrayal of miseries of Indian peasantry and the struggle of middle class and the tragedy of poor people. To appreciate the art of painting the rural world and the truth of Indian life. To estimate ever green existence of Premchand.
HN 1541	Core Course VI - Ancient Poetry	The aim of the course is to understand the Ancient Poetry, the theme, thought and

		philosophy of Ancient poets. To realize the difference between the poetries of Aadikal, Bhakthikal and Ritikal. To introduce the different dialects of Ancient Poetry. To understand the prominent writers like Kabeer, Jayasi, Thulasi and Soordas.
HN 1542	Core Course VII - Modern Poetry	The aim of the course is to enrich the knowledge of Modern Hindi Poetry and to familiarize with prominent modern poets and poems.
HN 1543	Core Course VIII - Hindi Fiction up to 1980	The aim of the course is to enrich the knowledge of Hindi Fiction up to 1980.
HN 1544	Core Course IX Hindi Grammar: Theory & Practice	The aim of the course is to understand the grammar of Hindi. Language and the structure of Hindi language. To know the grammatical rules of Hindi Language. To develop the use of Language without errors
HN 1545	Core Course X History of Hindi Language and Linguistics	The aim of the course is to understand the classification of Language and the development of Hindi Language and Lipi. To know the linguistics – Phonology, Wordology, Morphology, Semantics and Syntax.
HN 1641	Core Course XI Post Modern Hindi Fiction Since 1980	The aim of the course is to familiarize the post modernism, post modern culture and the theme and form of post modern Hindi Fiction. To know the prominent writers and their works since 1980. To up to date the knowledge of contemporary Hindi Fiction.
HN 1642	Core Course XII - Literary Criticism	The aim of the course is to understand the theories of Aesthetic pleasure and different schools of Indian Literary theories like Rasa, Alankara etc. To familiarize modern Hindi Literary thoughts and poetics and prosody. To sensitize the student to the western criticism. To know the literary thoughts, Ancient and Modern of western criticism.
HN 1643	Core Course XIII - Translation: Theory & Practice	The aim of the course is to familiarize the theory and practice of Translation and the use of translation. To understand the process of translation and the qualities of a translator. To familiarizes the translation of English to Hindi and Hindi to English.
HN 1644	Core Course XIV - Film: History and Production	The aim of the course is to explain the history of Indian Film special Reference to Malayalam, Hindi and Tamil. To understand the genius, Directors, Actors etc., of Indian Film. To realize the processing of film production like screen play, photography, editing, music etc.

HN 1661	Journalism And Hindi Journalism in Kerala	The aim of the course is to introduce the origin and development of journalism in India. To understand the development of journalism in Hindi. To introduce the student the theory and types of journalism. To develop the skill of journalism. To understand the development of Hindi journalism in Kerala.

DEPARTMENT OF HISTORY		
Programme offered	**B A History (Core and Complementary)**	
B A HISTORY		
Programme Outcome	Po.1.An understanding of the past and in depth of knowledge concerned with specific historical periods. Po.2.Giving an aid to the students for knowing an understanding about the cultures and traditions of the societies. Po.3.Show students familiarities with major events, personalities and issues related to the period being taught and studied. Po.4.Understanding the Students an elementary awareness about the chronological sequence of World and Indian events it's social and cultural interaction with the humans through ages. Po.5.Understand any social problem relevant to the study of History. Po.6.Understand the original and development of Historical writings. Po.7.Understand the basic themes, concepts, chronology and the scope of Indian History. Po.8.Acquiant with range of issues related to Indian History that span distinct eras. Po.9.Understand the history of countries other than India with comparative approach. Po.10.Think and argue historically and critically in writing and discussion. Po.11.Prepare for various types of Competitive Examinations. Po.12.Critically recognize the Social, Political, Economic and Cultural aspects of History.	
Course Code	**Course Title**	**Course Outcome**
HY 1141	Methodology and Perspectives of Social Sciences	• The course intends to familiarize the students with the broad contours of Social Sciences and its methodology • To familiarize the main concerns of Social Science discipline • To articulate the basic terminologies and the theories prevalent in concerned discipline • Critically read popular and periodical literature from a Social Science perspective
HY 1241	Cultural Formation of the Pre-Modern World	• To enable students to engage with conceptual and general issues regarding culture and civilization of ancient period • To inculcate an awareness among the students about the cultural heritage of mankind • To have a sound knowledge about the changes that took place among the major cultures of world civilizations • To give an idea about the harmonious existence of the different sections of the people
HY 1341	Evolution of Early Indian Society and Culture	• To analyse the salient features of Prehistoric and Protohistoric cultures in India • To trace the evolution of Indian culture with special reference to society and polity of ancient period • To familiarize students with the heritage of India
HY 1441	Medieval India: Socio-Cultural Processes	• Equip the students to have an idea on the Social, Cultural and administrative features during the Medieval period • To familiarize the students the processes that

		made the socio-cultural specificities possible • To make the students aware of the linkage effect of this period in subsequent centuries • Thematic aspects are to be introduced to the students
HY 1442	History of Modern World- Part I	• To familiarize the students about the changes in the history of the modern world • To analyse the agenda of the imperialistic powers in Latin America and Africa • To create an understanding among students about the liberal ideas and freedom struggle
HY1541CoreVI	Major Trends in historical thoughts and writings	• Enable the students to understand the historical writing. • Give new trends in historical writings. • Know the new theories and concepts in history.
HY1542CorseVII	Colonialism and Resistance Movements in India	• Understand the economic and political transformation of modern India. • Understand the concept of Colonialism in India. • .Understand the process of Transformation from 19th to 20th Century.
HY1543CoreVIII	History of Modern World Part II	• Understand the political development in the world. • .Understand the cotemporary world from historical perspective. • .Developed and understanding of new military and political ideas and different dictatorships in the world.
HY1544CoreIX	History of Pre Modern Kerala	• Understand the early developments in Kerala. • Hilights the social changes and important earlier dynasties in Kerala. • Understand the political developments in Kerala.
HY1545CoreX	Making of Indian Nation	• Understand the process of healthy Nationalism and Secularism in India. • Familiar with makers of India. • Understand the Gandian Era to the students.
HY1551.3 Open Course	History of Human Rights Movements	• Enable the Changing role of Human Rights and Historical importance of Human Rights. • Understand the Human rights and its values in present senario. • Understand the basic human rights in different countries.
HY 1641	Making of Modern Kerala	• Describe early resistance against British East India company. • Classify socio-religious movements of Kerala • To understand the importance of Kerala model Developments.
HY 1642	Major Trends in Indian Historical Thought and Writings	• To enable the students to understand the origin and development of historical writings in India • To locate major historical works in Indian history • To create an awareness among the students about the influence of ideas and theories ,trends and concepts in Indian historical writings

HY 1643	Contemporary India	• To provides the students with a graphic account of the circumstances that led to the formation of India Union. • To understand the challenges faced by independent India and the bold measures initiated after independence. • To evaluate the achievements of contemporary India with special reference to science ,Information technology
HY 1644	The Twentieth Century Revolutions	• To introduce the students four major revolutions of the 20th century i e , Russia ,Chinese ,Vietnamese and Cuban • To acquaint the students about the legacy of the above revolutions. • To familiarize the students about the nature ,Scope and significance of the revolutions in the present context
HY 1645	Project work	• Specification of the project work • The project work may be on any social problems relevant to the study of History • It should be based on both primary and secondary sources of data • It should be 20-25 pages typed spiral bound one(12 font size –times new roman,1.5 space) • The project work shall contain the following items A) Introduction & Review of literature. B)Methodology C)Analysis D)Conclusion &Suggestions if any E) Bibliography &Appendix if any
HY 1651.6	History of Human Rights Movements	• To understand the importance of Human Rights • To understand the challenges of Human Rights. • To Know about UDHR, constitutional safeguards and law, Indian experiments of Human Rights.
HY 1131.1	History of Modern India(1857-1900)	• To understand the importance of 1857 revolt • To understand the importance of socio-religious reform movements • To understand the concept of nationalism
HY 1231.3	History of Modern India(1901-1920)	• Analyse the Emergence of the National movement appreciate the struggle for freedom • To analyse the impact of first world war on Indian nationalism • To understand Gandhian ideologies.

HY1331.5	History of Modern India (1921-1947)	• To familiarize the students with the history of modern India from 1921-1947 • To analyse the causes that led to the rise of revolutionary movements in India.
HY 1431.7	History of contemporary India(after 1948)	• To highlight Nehruvian era. Role of Patel and V.P Menon. • To Understand the importance of India's Foreign policy • To highlight the importance of post Nehruvian era

DEPARTMENT OF BIOCHEMISTRY & INDUSTRIAL MICROBIOLOGY		
Programme offered	**BSc Biochemistry & Industrial Microbiology**	
BSc BIOCHEMISTRY & INDUSTRIAL MICROBIOLOGY		
Programme Outcome	PO1: The student become conversant with the chemical basis of life in all living organisms including plants, animals and microorganisms. PO2: Provide students with the knowledge and skill base that would enable them to undertake further studies in Biochemistry and related areas or in multidisciplinary areas that involve Biochemistry. PO3: The topics covered in the syllabus impart an in-depth understanding of basic aspects of microbiological science pertaining to industrial applications. PO4: On completion of the course the student will be able to explain the role of microorganisms in food production and preservation, their ability to cause food-borne infections and demonstrate practical skills in fundamental microbiological techniques. PO5: This multidisciplinary course help students to acquire expertise in subjects such Molecular Biology, Biochemistry and Bio-Engineering. PO6: The learning outcomes will empower the students to develop their future career in areas of biological research pertaining to discoveries and development of processes carried out for creation of new products such as vaccines, antibiotics, organic chemicals, and other products useful in the food and beverage industry, healthcare, agriculture, and waste water management.	
Course Code	**Course Title**	**Course Outcome**
IM 1121	Fundamentals of Biochemistry	• To provide comprehensive understanding on the origin and history of Biochemistry • Enables students to learn the fundamentals of Biochemistry involving the structures and biological importance of major biomolecules. • Familiarize students with the basic aspects of Biostatistics and Bioinformatics
IM1171	Fundamentals of Microbiology	• To develop knowledge and understanding of history of microbiology and implication to scope of microbiology • To inculcate the principles of various types of microscopy and different staining techniques for the identification of microbes • To develop the understanding of morphology and anatomy of prokaryotic cell and extra cell wall materials • To develop understanding on various types of culture media ,pure culture technique and preservation of cultures • To develop understanding on various sterilisation techniques ,

		• To develop knowledge on structure of fungi, algae and protozoa
IM 1241	Environmental Studies	• This course is designed to give a clear understanding of basic environmental aspects, social issues concerning environment and sustainable development practices. • To provide students with informed perspectives on biological and physical processes relevant to environmental issues in local, regional, national and global communities • The course helps to inculcate in students, the relationship between humans and environment their responsibilities in protecting this interconnected world. • To make aware of the students about the significance of sustainable development with environmental objectives to deliver long-term equitable growth which benefits current and future generations
IM 1242	Qualitative Analysis of Aminoacids	• The student will be able to identify any given amino acid
IM1222	Microbial Taxonomy and Physiology	• To develop knowledge on classification of various types of microorganisms • To develop knowledge on bacterial growth, bacterial photosynthesis, nutrient uptake mechanisms and energy production in bacteria
IM1271	Microbiology Practicals	• To develop understanding of microbiology lab, isolation & identification of bacteria and fungi
IM 1341	Methods in Biochemistry	• This course address many of the common experimental techniques in Biochemistry and Molecular Biology • Students will learn concepts, fundamentals and types of centrifugation technique • Students will understand the concept of spectrophotometer, relevant terms of UV-visible spectroscopy and outline of UV spectroscopy device • Students will be familiarized with the theory of chromatographic separation process and they will be able to apply theoretical knowledge in optimization of chromatographic separation. They will be able to assess the suitability of chromatographic techniques for solving specific bioanalytical problems and critically apply the knowledge for biomolecules separation • Students will learn about how to measure radioactivity, instrument used for detecting and measuring ionizing radiations and use of autoradiography • The course also provides a clear understanding about protein structure and its sequencing methods
IM1371	Cell Biology	• To develop knowledge& understanding on fundamentals & history of cell biology, cell interactions & Cell signalling • To develop knowledge on cell division, cellcycle, chromosomes and cytogenetics.
IM1372	Microbial	• To develop knowledge on history of genetics,

	Genetics & Biotechnology	prokaryotic replication & gene transfer mechanisms • To develop understanding & skill on plant and animal cell culture, ethical problems associated with rDNA technology & IPR
IM 1441	Physiological Aspects of Biochemistry	• Learning the biochemical aspects of physiological processes helps to understand the impeccable working of the body systems at a finer level. • Students will be familiarized with the physiology of digestion and absorption, blood and associated physiology, biochemical aspects of respiration and renal function, muscle contraction, nerve impulse transmission and a descriptive idea on endocrinology. • Students will learn the basics of enzymology and will be familiar with important terms of enzymology, enzyme classes, nomenclature and important properties of enzymes, reactions, their types and mechanism.
IM 1442	Qualitative Analysis of carbohydrates	• The student will be able to correlate the reactions of carbohydrates that are basis for its specific identification
IM1471	Environmental Microbiology	• To develop understanding on microbial interactions in ecosystem,waste water management & bioremediation • To develop knowledge on plant pathology & management of plant diseases
IM1472	Food Microbiology	• To develop knowledge & understanding on importance of food & dairy microbiology, production of fermented food • To develop knowledge on spoilage of food,food poisoning ,management & food preservation methods prepare them when outbreak occurs
IM1473	Microbiology Practical	• To develop knowledge, understanding& skill on isolation of DNA, plasmid, BOD & COD • To develop knowledge on isolation & enumeration of microbes from contaminated food, test quality of milk
IM 1541	Metabolism-I	• This course is the complete understanding of all the metabolic reactions at a molecular level. • Students will be able to describe the biochemical pathways involving the catabolism and anabolism of carbohydrates, fatty acids, storage lipids and steroids • The student will be able to specify each reaction with enzyme and accompanying side reactions and will also be able to explain the energetics of each metabolic pathway
IM 1542	Metabolism-II	• A through familiarization of Nitrogen metabolism in biological systems and aminoacid metabolism in humans. • The student will get an in-depth knowledge on the biosynthesis and degradation of purine and pyramidine nucleotides • Students will get a clear picture of electron transport

		chain and oxidative phosphorylation. • Biochemical pathways and cycles involved in the various types of photosynthetic processes in detail is a very attractive feature of this course content which gives the student a very clear understanding of these processes.
IM 1543	Quantitative Analysis of Biomolecules	• The lab training will expertise the student in quantifying various biomolecules with precision.
IM 1551.2	Open Course: Lifestyle Diseases	• This course is studied by students from other departments like music, Malayalam, Hindi etc. who may not even have studied biology at their higher secondary level. Hence only an introduction to the terms and their significance in everyday life is aimed at in the present course. • The course helps to create awareness among students about the various diseases which originate and which could be prevented by controlling the life style. • The course also covers the general aspects of diagnosis, methods of prevention, management and pharmaceutical intervention in controlling lifestyle diseases.
IM1571	Fermentation Technology	• To develop knowledge on fermentation processes, industrially important microorganisms, design& parts of fermenter • To develop knowledge on production & recovery of fermentation product.
IM1572	Microbiology Practical	• To develop knowledge& skill on antibiotic assay, fermentation techniques • Project to direct students towards research
IM 1641	Clinical Biochemistry	• Understand the Basic concepts and principles of Clinical Biochemistry, detail on the various biological specimens including the process of collection, preservation and storage. • Understand the Blood groups, Blood banking and adverse reactions of blood transfusions. • Understand the aetiology, types, clinical manifestations and treatment of Diabetes mellitus • Elaborate on the role of Serum lipids including triglycerides, cholesterol and phospholipids in diseases. Detail the clinical role of serum cholesterol and state the Clinical features of atherosclerosis. • Differentiate three types of jaundice and their systematic analysis. Detailed study of Jaundice, Cirrhosis, Hepatitis, Fatty liver and gall stones. Serum enzyme activities in diseases. • Understand the difference between plasma,serum,normal and abnormal constituents in various body fluids. • Understand the clinical significance of routine haematological tests for disease diagnosis and

		prognosis. • Learn that many diseases result from imbalance in certain enzymes and helps in diagnosis of liver, cardiac, gastrointestinal, kidney diseases. • Gain perception on the various renal function tests, renal disorders, thyroid functions and diagnostic value of TFT • Understand the molecular basis of Cancer – cancer cells, difference between cancer and normal cells. To identify the various diagnostic approaches
IM 1642	Molecular Biology	• Student understands the experimental basis of the development of the branch of molecular biology. And the students will be able to describe the general principles of gene organization in prokaryotes and eukaryotes • Students will be able to describe mechanisms of DNA replication and repair, RNA synthesis and processing, protein synthesis and modification. They will be able to distinguish and compare how replication, transcription and translation processes differ in prokaryotes and eukaryotes. • They will be able to explain which enzymes, protein factors and energy sources are needed for each stage • Students will be able to describe how gene expression is regulated at the transcriptional and post-transcriptional level. • This very interesting course will definitely equip the students to surf the world of genetic engineering and genetic manipulations.
IM 1643	Urine analysis and Hematology	• Assess presence and absence of normal and abnormal constituents in urine by performing qualitative urine analysis • Analyze blood for RBC, WBC, TC/DC, ESR and hemoglobin by performing hematological assays
IM 1644	Serum estimation	• Gain knowledge of biological samples and their collection procedures • Distinguish serum, plasma and whole blood emphasizing the role of anticoagulants • Analyze blood for glucose level and serum for cholesterol, bilirubin, protein and A/G ratio • Determine blood urea, uric acid and creatinine which acts as renal indices • Assay of serum enzymatic activities and result interpretations
IM1671	Medical Microbiology	• To develop understanding on microbial normal flora, pathogenic bacteria ,fungi, virus,& protozoa • To develop knowledge on identification & management of pathogenic microflora and antimicrobial chemotherapy
IM1681	Elective Course	• To develop knowledge& understanding on types of

	- Immunology	immunity, immune response& sources of infection • To develop knowledge on classification of antigen & antibody, cells & organs of immune system To develop knowledge on various antigen – antibody reactions, immunochromatography, auto immunity & transplantation immunology.
IM1672	Microbiology Practical	• To develop knowledge skill on antibiotic sensitivity testing, identification of common pathogens,immunochromatographictechniques,latex agglutination test and equip them to work at microbiology labs.

DEPARTMENT OF MUSIC		
Programme Offered	BA Music	
BA MUSIC		
Programme Outcome	PO1-Students will be able to demonstrate aspects of raga PO2-Helps them to attain a professional career as a musician PO3-Motivate them to analyze the performance skills PO4-The Student makes an analytical study based on Musical sound based on the principles of Physics.	
Course Code	**Course Title**	**Course Outcome**
MU1141	Introduction to Indian Music	Gives an idea About Music
MU1131	Veena	Gives an Idea about the Instrument
MU1241	Abhyasaganam&Sabhaganam	Gives an idea about the vocal exercises
MU1231	Veena	Helps to Know the playing Technique .
MU1321	Foundation Course	Integrate Foundational Concepts in Music Study
MU1341	Ragam	Gives an idea about the Evolution of Raga
MU1342	Varnams & Krities	Helps to acquire a basic understanding of various Musical forms
MU1331	Veena	Gives them nice Fingering
MU1441	Ragam,Talam& Vaggeyakaras	Update the Knowledge required for the Performance
MU1442	Varnams & Krities	Improves the BAANI(Style of Rendition)
MU1431	Veena	Helps them to attain a good Layanjana
MU1541 .	Composers &Lakshanagrandhas	Gives an idea about the life history of Vaggeyakaras
MU1542	Musical forms & Instruments	Integrate Knowledge across similar &varied areas of music
MU1543	Musical Forms	Gives a vast idea about Indian Music
MU1544	Group Krities & Manodharma Sangeetam	Acquires an understanding of Improvisation
MU1545	Krities& Manodharma Sangeetam	Able to understand the responsibility of Musician
MU1551	Simple Musical Forms	Helps to spread the Knowledge of Music
MU1641	Technicalities of Music	Gives them the ability to Compose
MU1642	Different Streams of Music	Gives an idea about the various areas of Specialisation
MU1643	Musical Forms& Manodharma Sangeetam	Includes artistic self Expression
MU1644	Musical Forms & Manodharma Sangeetam	Gives an idea about Performance Skill
MU1661	Compositions of Different Composers	Helps them to study variety of Compositions
MU1645	Concert	Students will be able to Perform Concerts.

DEPARTMENT OF GEOGRAPHY		
Programme Offered	**BSC GEOGRAPHY**	
BSC GEOGRAPHY		
Course Code	**Course Title**	**Course Outcomes**
GG 1141	Principles of Geomorphology	• Understand the theories and fundamental concepts of Geomorphology. Understand earth's tectonic and structural evolution. Gain knowledge about earth's interior. Develop an idea about concept of plate tectonics, and resultant landforms. • Acquire knowledge about types of folds and faults andearthquakes, volcanoes and associated landforms. • Understanding crustal mobility and tectonics; with special emphasis on their role in landform development. • Overview and critical appraisal of landformdevelopment models. • Identification of rocks and minerals.
GG 1641	Cartography	• Understand and prepare different kinds of maps. • Recognize basic themes of map making. • Development of observation skills.
GG 1441	Human Geography	• Gain knowledge about major themes of humanGeography. • Acquire knowledge on the history and evolution ofhumans. • Understand the approaches and processes of HumanGeography as well as the diverse patterns of habitat andadaptations. • Develop an idea about space and society • Acquire knowledge about Rural settlements-Definition, natureand characteristics • Analyze the morphology of rural settlements • Learn the rural house types, census categories of rural settlementsand idea of social segregation
GG1341	Climatology and Oceanography	• Analyse the concepts of Climatology and Oceanography • Understand the elements of weather and climate, different atmospheric phenomena and climate change. • Learn to associate climate with other environmentaland human issues. Approaches to

		climate classification. • To analyze the dynamics of the Earth's atmosphere and global climate. Assessing the role of man in global climatechange. • Prepare various climatic maps and charts and interpretthem. • Learn to use of various meteorological instruments. • Learn the interaction between the atmosphere and theearth's surface. Understand the importance of the atmospheric pressure and winds. • Understand how atmospheric moisture works. • Studying the behavior and characteristics of the globaloceans. • Identify marine resources and characteristics of oceanwaters
GG 1551.1	OPEN COURSE Geography of Tourism	• Learn Scope and Nature: Concepts and issues, tourism,recreation and leisure inter-relations; Factors influencing tourism, Types of Tourism: Ecotourism, cultural tourism, adventure tourism, medical tourism, pilgrimage, international, national. • Use of information on factors (Historical, natural, socio-cultural and economic; motivating factors for pilgrimages) to plan destination marketing; tourism products; niche tourism planning ; Tourism impact assessment, Sustainable tourism, Information Technologyand Tourism, Tour operations planning and guiding. • Natural and cultural attractions of Kerala
GG 1221	Fundamentals of Remote Sensing and GIS	• Have knowledge of the principles of remote sensing,sensor resolutions and image referencing schemes. • Training in the use Geographic Information System(GIS) software for contemporary mapping skills. • Analyzing and interpreting remotely sensed satelliteimages and aerial photographs in order to understand topographical and cultural variations on the Earth's surface. • Conducting field excursions and preparation of fieldreport on research on problem in different areas of India • Apply GIS to the preparation of thematic maps.
	An	• Understand the nature of hazards and disasters.

GG1661	introduction to disaster Management	• Assess risk, perception and vulnerability with respect tohazards. Assessing the nature, impact and management of majornatural and man-made hazards affecting the Indian subcontinent.
GG 1543	Geography of Resources	• Understand the concept and classification of resources • Understand the approaches to resource utilization • Appreciate the significance of resources • Assess the pressure on resources • Analyze the problems of resource depletion with special reference to forests, water and fossil fuels • Understand the concept of Sustainable Resource development • Understand the distribution, utilization, problems and management of metallic and non-metallic mineral resources • Analyze the contemporary energy crisis and assess the future scenario • Understand the concept of Limits to Growth, resource sharing and sustainable use of resources