Course outcomes of all Courses

Course Code	Course Name	Course Outcome
ECO-HC-1016	INTRODUCTORY MICROECONOMICS	This course is designed to expose the students to the basic principles of microeconomic theory. The emphasis will be on thinking like an economist and the course will illustrate how microeconomic concepts can be applied to analyze real-life situations.
ECO-HC-1026	MATHEMATICAL METHODS IN ECONOMICS–I	This is the first of a compulsory two-course sequence. The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. The level of sophistication at which the material is to be taught is indicated by the contents of the prescribed textbook.
ECO-HC-2016	INTRODUCTORY MACROECONOMICS	This course aims to introduce the students to the basic concepts of Macroeconomics. Macroeconomics deals with the aggregate economy. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation, and the balance ofpayments.

ECO-HC-2026	MATHEMATICAL METHODS IN ECONOMICS - II	This course is the second part of a compulsory two-course sequence. This part is to be taught in Semester II following the first part in Semester I. The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this Syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. The level of sophistication at which the material is to be taught is indicated by the contents of the prescribedtextbook.
ECO-HC-3016	INTERMEDIATE MICROECONOMICS - I	The course is designed to provide a sound training in microeconomic theory to formally analyze the behaviour of individual agents. Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts. This course looks at the behaviour of the consumer and the producer and also covers the behaviour of a competitive firm.
ECO-HC-3026	INTERMEDIATE MACROECONOMICS - I	This course introduces the students to formal modeling of a macro-economy in terms of analytical tools. It discusses various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of

		policy in this context. It also introduces the students to various theoretical issues related
		to an openeconomy
ECO-HC-3036	STATISTICAL METHODS FOR ECONOMICS	This is a course on statistical methods for economics. It begins with some basic concepts and
		terminology that are fundamental to statistical analysis and inference. It then develops the notion
		of probability, followed by probability distributions of discrete and continuous random variables
		and of joint distributions. This is followed by a discussion on sampling techniques used to collect
		survey data. The course introduces the notion of sampling distributions that act as a bridge
		between probability theory and statistical inference. The semester concludes with some topics in
		statistical inference that include point and interval estimation.
ECO-HC-4016	INTERMEDIATE MICROECONOMICS - II	This course is a sequel to Intermediate Microeconomics I. The emphasis will be on
		giving conceptual clarity to the student coupled with the use of mathematical tools and
		reasoning. It covers general equilibrium and welfare, imperfect markets and topics under
		information economics.
ECO-HC-4026	INTERMEDIATE MACROECONOMICS - II	This course is a sequel to Intermediate Macroeconomics I. In this course, the students are
		introduced to the long run dynamic issues like growth and technical progress. It also
		provides the micro-foundations to the various aggregative concepts used in the previous
		course.

ECO-HC-4036	INTRODUCTORY ECONOMETRICS	This course provides a comprehensive introduction to basic econometric concepts and techniques. It covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models. The course also covers the consequences of and tests for misspecification of regressionmodels.
ECO-HC-5016	INDIAN ECONOMY-I	Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points. Given the rapid changes taking place in India, the reading list will have to be updated annually
ECO-HC-5026	DEVELOPMENT ECONOMICS-I	This is the first part of a two-part course on economic development. The course begins with a discussion of alternative conceptions of development and their justification. It then proceeds to aggregate models of growth and cross-national comparisons of the growth experience that can help evaluate these models. The axiomatic basis for inequality measurement is used to develop measures of inequality and connections between growth and inequality are explored. The course ends by linking political institutions to growth and inequality by discussing the role of the state in economic development and the informational and incentive problems that affect stategovernance.
		This course examines sector-specific polices and their impact in shaping trends in key

ECO-HC-6016	INDIAN ECONOMY-II	economic indicators in India. It highlights major policy debates and evaluates the Indian empirical evidence. Given the rapid changes taking place in the country, the reading list will have to be updated annually
ECO-HC-6026	DEVELOPMENT ECONOMICS-II	This is the second module of the economic development sequence. It begins with basic demographic concepts and their evolution during the process of development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The governance of communities and organizations is studied and this is then linked to questions of sustainable growth. The course ends with reflections on the role of globalization and increased international dependence on the process of development.
ECO-HE-5016	ECONOMICS OF HEALTH AND EDUCATION	The importance of education and health in improving well-being is reflected in their inclusion among the Millennium Development Goals adopted by the United Nations member states, which include among other goals, achieving universal primary education, reducing child mortality, improving maternal health and combating diseases. This course provides a microeconomic framework to analyze, among other things, individual choice in the demand for health and education, government intervention and aspects of inequity

		and discrimination in both sectors. It also gives an overview of health and education in India.
ECO-HE-5026	MONEY AND FINANCIAL MARKETS	This course exposes students to the theory and functioning of the monetary and financial sectors of the economy. It highlights the organization, structure and role of financial markets and institutions. It also discusses interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to India are also covered.
ECO-HE-5036	PUBLIC FINANCE	This course is a non-technical overview of government finances with special reference to India. The course does not require any prior knowledge of economics. It will look into the efficiency and equity aspects of taxation of the centre, states and the local governments and the issues of fiscal federalism and decentralisation in India. The course will be useful for students aiming towards careers in the government sector, policy analysis, business and journalism.
ECO-HE-6016	ENVIRONMENTAL ECONOMICS	This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies. Economic implications of environmental policy are also addressed as well as valuation of environmental

		quality, quantification of environmental damages, tools for evaluation of environmental
		projects such as cost-benefit analysis and environmental impact assessments. Selected topics
		on international environmental problems are also discussed
ECO-HE-6026	INTERNATIONAL ECONOMICS	This course develops a systematic exposition of models that try to explain the composition,
		direction and consequences of international trade, and the determinants and effects of trade
		policy. It then builds on the models of open economy macroeconomics developed in courses
		08 and 12, focusing on national policies as well as international monetary systems. It concludes
		with an analytical account of the causes and consequences of the rapid expansion of
		international financial flows in recent years. Although the course is based on abstract theoretical
		models, students will also be exposed to real-world examples and case studies.
ECO-HE-6036	THE ECONOMY OF ASSAM	This course will provide students an idea of evolution of the Assam Economy from the colonial
		period to the contemporary time. The course is expected to help students to better appreciate the
		challenges and opportunities of the economy of Assam in the present context.
ECO-HG-1016	Principles of Microeconomics–I	This course intends to expose the student to the basic principles in Microeconomic
		Theory and illustrate with applications.
ECO-HG-2016	Principles of Microeconomics–II	This is a sequel to Principles of Microeconomics covered in the first semester.

ECO-HG-3016	Principles of Macroeconomics–I	This course introduces students to the basic concepts in Macroeconomics. Macroeconomics deals with the aggregate economy. In this course the students are introduced to the definition, measurement of the macroeconomic variables like GDP, consumption, savings, investment and balance of payments. The course also discusses various theories of determining GDP in the short run.
ECO-HG-4016	Principles of Macroeconomics–II	This is a sequel to Principles of Macroeconomics–I. It analyses various theories of determination of National Income in greater detail. It also introduces students to concept of inflation, its relationship with unemployment and some basic concepts in an open economy.
ECO-SE-3014	Data Collection and Presentation	This course helps students in understanding use of data, presentation of data using computer softwares like MS-Excel. Students will be involved practically to preparation of questionnaires/interview schedules, collection of both primary and secondary data and its presentation. Students will also be asked to prepare a report on collected data and will be evaluated accordingly
ECO-SE-4014	Data Analysis	This course discusses how data can be summarized and analysed for drawing statistical inferences. The students will be introduced to important data sources that are available and will also be trained in the use of statistical softwares like SPSS/PSPP to analyse data.

GGY - HC – 1016	Geomorphology (Core Course)	⍰ The students will learn that the earth is unstable and it is undergoing constant changes due to
		dynamic earth'sprocesses.
		⍰ The students will come to know about the meaning and scope of geomorphology as a major
		branch of PhysicalGeography.
		⍰ After gaining knowledge based on the contents embodied in this paper, the students wil be
		able to realize the importance of geomorphological knowledge as applied in various
		developmental activities executed in differentareas.
GGY-HC-1026	Cartographic Techniques	●Understandingtheimportanceofvariouscartographictechniquesingeographicalstudy
		● General understanding of map type, map scale and mapcontent.
		● An acquaintance of different cartographic techniques for representation of various facets of
		physical and human geographic data of anyarea.
GGY-HC-2026	**Climatology and Biogeography**	● The paper will be useful for students in developing ideas on climate related aspects of geographicalanalyses.
		● The paper will help provide theoretical insights and perspectives to students if they wish to pursue a research programme infuture
		● Students will develop a basic understanding of the introductory concepts in biogeography.
		● The paper be very useful for students preparing for UGC NET-JRF / SLET exam and other competitive exams including civilservices.

GGY-HG-2036	**Human Geography**	● The paper will be useful for students in developing ideas on human-environment issuesthat geographers usually address in theanthropocene.
		● The paper will be useful for students preparing for various competitive examinations including the civilservices.
GGY-HG-2046	**Digester Management**	▯ The students will be able to analyse the causes and management issues related
		to disasters taking place in students' ownlocalities.
		▯ The students will be able to differentiate the types of disasters, causes and their
		impact on environment and society along with various disaster management strategies and their applicability in differentsituations
GGY-HC-3016	**Economic Geography**	● The paper will be useful for students in developing ideas on how geographical aspects organise economic space and will offer perspectives to students if they wish to pursue a researchprogramme.
		● The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civilservices.
GGY-HC-3026	**Geography of India with Special Reference to N.E. India**	▯ The paper will be useful for students in developing understanding on Indian geography and its various dimensions.
		▯ It will also be useful for students preparing for various competitive examinations including civil services.
GGY-HC-3036	**Quantitative Methods in Geography**	● Thorough understanding of the statistical methods and techniques used in geographical studies;
		● Understanding of tabulation, analysis and interpretation of geographicaldata.
GGY–SE-3044	**River Basin Studies**	▯ At the end of the course, the students will be able to learn use of a few instruments like
		rotameter, planimeter, Dumpy Level,etc.
		▯ To learn the basics of morphometric analysistechniques.
		▯ To acquaint with the field methods of river studies in across-section

GGY–SE-3054	**Thematic Cartography**	● Understanding the importance of various techniques of preparation of maps in geographicalstudy ● General understanding of preparation of different types of plan andmaps. ● An acquaintance of different cartographic techniques for representation of various facets of earth'ssurface.
GGY-HG-3066	**Economic Geography**	This paper will be useful for the students in developing understanding on how geographical factors organize economic space, and to acquire knowledge about spatial patterns of various economic activities on the earth.
GGY-HG-3076	**Cartographic Methods**	●Understandingtheimportanceofvariouscartographictechniquesingeographicalstudy ● General understanding of map type, map scale and mapcontent. ● An acquaintance of different cartographic techniques for representation of various facets of physical and human geographic data of anyarea.
GGY-HC-4016	**Environmental Geography and Disaster Management**	● This paper will be useful for students in developing ideas on environmental issues including disasters that geographers usually address. ● This paper will be useful for students preparing for different competitive exams including the civil services.
GGY-HC-4026	**Population and Settlement Geography**	● The paper will be useful for students in developing ideas about spatio-temporal changes in the characteristics of population and settlement and the factors associated with them. ● The paper will be useful for students preparing for various competitive exams including the civil services.

GGY-HC-4036	**Remote Sensing, GIS and GPS**	● The paper remains useful for students in developing skills in spatial data analysis if they wish to pursue a research programme.
		● The paper will be useful for students preparing for different competitive exams including the civil services.
GGY-SE-4044	**Advanced Statistical Techniques for Spatial Analysis**	● It provides general understanding of geographical data and application of various statistical measures for their meaningful analysis.
		● Acquiring basic knowledge about probability and normal distributions and their
		applications for sample data collection and analysis.
		● Understanding the patterns and processes associated with various geographical
		phenomena through application of different statistical techniques.
GGY-SE-4054	**Surveying Techniques**	● Understanding the importance of various surveying techniques in geographical study
		● General understanding of preparation procedures of different types of plan and map
		● An acquaintance of different surveying techniques for representation of various spatial objects/Phenomena.
GGY-HG-4066	**Geography of India with Reference N.E. India**	⍰ The paper will be useful for students in developing understanding on Indian
		geography and its various dimensions.
		⍰ It will also be useful for students preparing for various competitive examinations
		includingcivil services.
GGY-HG-4076	**Population and Settlement Geography**	● The paper will be useful for students in developing ideas about spatio-temporal changes in the characteristics of population and settlement and the factors associated with them.
		● The paper will be useful for students preparing for various competitive exams including the civil services.

GGY-HC-5016	**Social and Political Geography**	⁃ This course will help equip the students to comprehend various social and political aspects of phenomena and their interface within the realm of geography.
		⁃ The paper will be very useful for students preparing for various competitive examinations including civil services.
GGY-HC-5026	**Field Techniques in Geography**	● This course will help students to proceed with a research problem and the steps she/he should adopt and the tools and craft to be employed for doing quality research.
		● Students perceive fieldwork to be beneficial to their learning, because through it they experience 'geographical reality', and have deeper understanding of the subject.
		● The students will have a chance to interact with respondents and collect data through questionnaire directly from the field.
		● This course will develop understanding about designing and writing a field report.
GGY-HE-5036	**Geography of Transportation**	⁃ The students will be able to understand and analyse the principal issues confronting the transportation systems from geographical perspectives.
		⁃ The students will get an insight into various transportation systemsfrom global and India perspectives.
GGY-HE–5046	**Regional Development and Planning**	⁃ The paper will be useful for students in developing ideas on disparities within and between countries and their fallout.
		⁃ The paper will help provide theoretical insights and perspectives to students, if they wish to pursue a higher studies or research in future.
		⁃ The paper will be very useful for students preparing for various competitive examinations including civil services.

GGY-HE-5056	**Urban Geography**	⍰ The paper will be useful for students in developing ideas on how geographical factors organize urban spaces and how geographers seek to address various urban problems and issues. ⍰ It will help build skills among students seeking advanced studies on urban development and planning. ⍰ The paper will be very useful for students preparing for various competitive examinations including civil services.
GGY-HE-5066	**Agricultural Geography**	⍰ This paper will be useful for students in developing ideas about agricultural practices and their distribution and characteristics. ⍰ This paper will also be useful tothe students in understanding the world agricultural systems.
		⍰ This paper will help develop understanding of location of agricultural activities and associated contemporary problems and challenges.
GGY-HC-6016	**Geographical Thought**	⍰ This course develops a comprehensive understanding of the discipline; ⍰ This course helps the students to apply the historic and contemporary perspective to explain and approach the real world geographic problems.
GGY-HC-6026	Research Methods in Geography and Project Work	● This course will help the students to proceed with a research problem and the steps she/he should adopt and the tools and craft to be employed while doing quality research
GGY-HE–6036	Geography of Health	● Understanding of the concept of human health and healthcarefrom the perspectiveof geography. ● Acquiring knowledge about factors influencing human health and occurrence of diseases in varying ecological settings.

		● Providing useful information about the impact of global climate change on human
		health and occurrence of various diseases in different ecological settings in India
GGY-HE-6046	Hydrology	After completion of this course the students will be able to speak on the basic concepts of hydrology
		and its application in river basin studies. Students will also have a practical orientation of the
		concepts both in laboratory and in the field.
GGY–HE-6056	Geography of Tourism	▯ The paper will be useful for students in developing ideas on how geographical
		factors
		tangent on tourism activities and how geographers seek to address issues of
		development and carrying capacities of varied environments.
		▯ It will also build skills for students seeking to enroll in a research programme
		and/or provide openings for them to work with tourism/eco-tourism planning
		agencies.
GGY-HE-6066	Geography of Resources and Development	● This paper will be useful to students in developing ideas on different aspects of resources,
		and the linkages with development issues that geographers usually address.
		● This paper will also be useful for students preparing for different competitive
		examinations including the civil services.
EDU-HC-1016	PRINCIPLES OF EDUCATION	• Acquaint the students with the sound principles of education
		• Acquaint the students with the important concepts of Education, Curriculum, Democracy, Discipline and Freedom.
		• Develop knowledge about different Aims of Education, various types of Curriculum, Correlation of Studies and Forms of Discipline.
		• Familiarise the students with democratic idea of modern education.
EDU-HC-1026	PSYCHOLOGICAL FOUNDATIONS OF EDUCATION	• Make the students understand the relationship between education and psychology.

		• Explain the need of educational psychology in teaching learning process.
		• Describe the nature and theories of learning and role of motivation in learning.
		• Understand the concept of memory, forgetting, attention and interest.
		• Understand intelligence, its theories, measurement, and concept of emotional intelligence.
		• Acquaint with different types of personality and the adjustment mechanism.
EDU-HG-1016	FOUNDATIONS OF EDUCATION	• Acquaint with the principles of education
		• Gain knowledge about different various Forms and Aims of Education
		• Understand the concept and importance of Discipline and Freedom.
		• Acquire knowledge about the concept of Emotional and National Integration and International Understanding.
EDU-HC-2016	PHILOSOPHICAL AND SOCIOLOGICAL FOUNDATION OF EDUCATION	• Know the concept of philosophy and its relationship with education.
		• Understand the educational implications of different Indian schools of philosophy.
		• Understand the educational implications of different Western schools of philosophy.
		• Know the concept of sociology and its relationship with education.
		• Develop understanding about the concept of educational sociology, social groups and socialisation.
EDU-HC-2026	DEVELOPMENT OF EDUCATION IN INDIA-I	• Recount the concept of Ancient Indian education system
		• Describe the education system in Ancient India, particularly Vedic Education
		• Examine the education system in Medieval India.
		• Analyse the education system during British Period
EDU-HG-2016	PSYCHOLOGY OF ADOLESCENTS	• Enable the students to understand the period of adolescence
		• Enable the students to understand the significance of the adolescence period in human life
		• Enable the students to know about various problems associated with this stage

		• Enable the students to understand the development aspects of adolescence, importance of adolescence period and problems associated with this stage.
EDU-HC-3016	DEVELOPMENT OF EDUCATION IN INDIA-II	• Understand the Educational situation during the time of Independence
		• Explain the recommendations and educational importance of different Education Commission and Committees in post Independent India
		• Analyse the National Policy on Education in different tomes
		• Accustom with the recent Educational Development in India
EDU-HC-3026	EDUCATIONAL TECHNOLOGY AND TEACHING METHODS	• Make the students understand the objective of educational technology in teaching learning process
		• Acquaint the students with innovations in the field of education through technology
		• Make the students understand about various methods and devices of teaching
		• Acquaint students with levels, effectives of teaching and classroom management
		• Make the students understand the strategies of effective teaching as a profession.
EDU-HC-3036	VALUE AND PEACE EDUCATION	• Understand the concept and meaning of value.
		• Become aware about the role of educational institutions in building a value based society.
		• Understand the meaning and concept of peace and its importance in human life.
		• Understand the meaning and importance of peace education and its relevance at national and international level.
		• Identify the different issues/ challenges in imparting peace education.
		• Identify the strategies and skills in promoting peace education at institutional level.
EDU-HG-3016	GUIDANCE AND COUNSELLING	• Help the students to understand the concept, need and importance of Guidance and Counselling
		• Enable the students to know the different types and approaches to Guidance and Counselling
		• Acquaint the students with the organization of guidance service and school guidance clinic

		• Enable the learners to understand the challenges faced by the teacher as guidance worker.
EDU-SEC- 3014	PUBLIC SPEAKING SKILL	After completing this course, students will be able to acquire the capacities of public speaking skill.
EDU-HC-4016	GREAT EDUCATIONAL THINKERS	• Enable the students to learn the Philosophy of life of different Educational Thinkers and their works.
		• Enable the students to learn about the views of thinkers in educational context.
		• Enable the students to learn about relevance of some of their thoughts at present day context.
EDU-HC-4026	EDUCATIONAL STATISTICS AND PRACTICAL	• Develop the basic concept of Statistics,
		• Be acquainted with different statistical procedures used in Education.
		• Develop the ability to represent educational data through graphs.
		• Familiarize the students about the Normal Probability Curve and its applications in Education.
EDU-HC-4036	EMERGING ISSUES IN EDUCATION	• Make the students acquaint with major emerging issues national, state, and local
		• Acquaint the students with the various issues in education that are emerging in the recent years in the higher education system
		• Address the various problems and challenges of education in India at all levels.
EDU-HG-4016	HISTORY OF EDUCATION IN INDIA	• Analyse the education system during British Period
		• Understand the Educational situation during the time of Independence
		• Explain the recommendations and educational importance of different Education Commission and Committees in post Independent India
		• Analyse the National Policy on Education in different tomes
		• Accustom with the recent Educational Development in India.
EDU-SE-4014	WRITING BIODATA AND FACING AN INTERVIEW	After completing this course, students will be able to write a bio-data scientifically and will develop confidence to face different types of interview.

EDU-HC-5016	MEASUREMENT AND EVALUATION IN EDUCATION & PRACTICAL	• Enable the students to understand the concept of measurement and evaluation in education.
		• Acquaint the students with the general procedure of test construction and characteristics of a good test.
		• Develop an understanding of different types of educational tests and their uses.
		• Acquaint the students about personality test, and aptitude tests.
EDU-HC-5026	GUIDANCE AND COUNSELLING	• Help the students to understand the concept, need and importance of Guidance and Counselling
		• Enable the students to know the different types and approaches to Guidance and Counselling
		• Acquaint the students with the organization of guidance service and school guidance clinic
		• Enable the learners to understand the challenges faced by the teacher as guidance worker.
EDU-DSE-5016	CONTINUING EDUCATION	• Know the concept, objectives, scope and significance of continuing education in the context of present scenario.
		• Understand about different aspects and agencies of continuing education.
		• Realize different methods and techniques as well as issues of continuing education.
		• Know the meaning of open education and realise the importance of open school and open universities in continuing education.
		• Understand the development of adult education in India, kinds of adult education and different problems of adult education.
EDU-DSE-5026	DEVELOPMENTAL PSYCHOLOGY	• Enable the students to understand the basic concepts relating to development
		• Acquaint the students about heredity and environmental factors affecting pre-natal development
		• Enable the students to understand the development aspects during infancy and childhood
		• Enable the students to understand the development aspects of adolescence, importance of adolescence period and problems associated with this stage

EDU-DSE-5036	HUMAN RIGHTS EDUCATION	• Explain the basic concept, nature and scope of human rights
		• Describe the meaning, nature, principles, curriculum and teaching methods of human rights education at different levels of Education.
		• Know the role of United Nations on human rights
		• Understand enforcement mechanism in India
		• Know the role of advocacy groups Course Contents Units Content
EDU-DSE-5046	TEACHER EDUCATION IN INDIA	• Explain the Concept, Scope, Aims & Objectives and Significance of teacher education
		• Acquaint with the development of Teacher Education in India
		• Acquaint with the different organising bodies of teacher education in India and their functions in preparation of teachers for different levels of education
		• Acquaint with the innovative trends and recent issues in teacher education, and be able to critically analyse the status of teacher education in India
EDU-HC-6016	EDUCATION AND DEVELOPMENT	• Relation between education and development
		• Educational development in the post globalization era
		• Role of education in community development
		• Education for human resource development
		• Economic and political awareness through education Course Contents: Units Contents Unit-1 Basic Concepts of Education and Development
		• Indicators of educational development
		• Role of education in national development
		• Growth and development of education in India in the post globalizat
EDU-HC-6026	PROJECT	• Explain the process of conducting a Project.
		• Prepare a Project Report. Guideline: Each student is required to complete anyone project related to any area of the system
EDU-DSC-6016	MENTAL HEALTH AND HYGIENE	• Acquaint with the fundamentals and development of mental health and the characteristics of a mentally healthy person.

		• Understand the concept and importance of mental hygiene and its relationship with mental health.
		•Acquire knowledge about the principles, factors promoting mental health and the role of home, school, and society in maintaining proper mental health
		• Learn the meaning and problem of adjustment and also the different adjustment mechanisms.
		• Familiarise with the concept and issues of positive psychology, mental health of women, role of WHO and stress management.
EDU-DSC-6026	SPECIAL EDUCATION	• Understand the meaning ad importance of special education
		• Acquaint with the different policies and legislations of special education
		• Familiarise the students with the different types of special children with their characteristics
		• Enable the students to know about different issues, educational provisions and support services of special education Course Content: Units Content Unit-1 Special Education-
		• Meaning, Objectives, Scope and Importance of Special Education
EDU-DSC-6036	EDUCATIONAL MANAGEMENT	• Develop an understanding of the basic concept of educational management.
		• Enable the students to know about the various resources in education
		• Enable the students to understand the concept and importance of educational planning.
		• Enable the students to know about the financial resources and financial management in
		• Meaning, nature and scope of Educational Management
		• Objectives/Purpose of Educational Management
		• Principles of Educational Management
		• Types of Educational Management
		• Functions of Educational Management- Planning, Organizing, Directing,
EDU-DSC-6046	WOMEN AND SOCIETY	• Know the changing role of women in India
		• Understand gender discrimination in Indian society
		• Make the students understand the constitutional provisions for women and their rights.

		• Make the students understand women empowerment
		• Develop an awareness and sensitivity towards women Units Content
ENG-HC-1016	Indian Classical Literature	This paper introduces students to a selection of literatures of India in English translation. Given that Indian Classical Literature offers a rich and diverse canvas that spans across genres like drama, poetry, the epic narrative as well as short fictional fables, to name a few, it is essential that students studying English literature are familiar with at least a few of these. This paper encourages students to think laterally about literatures of the world, and the possibility of cultural exchange.
ENG-HC-1026	European Classical Literature	Classical writing in Europe saw the emergence of traditions that cut across many genres, which included poetry, theatre, and general discourses. While the Aristotelian focus on the examination of the essentials of poetry extended to incorporate discussions on epic and drama, subsequent writers such as Horace drew attention to the purposefulness of the creative exercise. In the theatre the widely divergent compositions by Sophocles and Plautus respectively show the consolidation of a rich cultural discourse. It is this enriching literary tradition that this paper seeks to familiarize with through the study of representative texts belonging to the Classical Period.
ENG-HC-2016	Indian Writing in English	• Develop familiarity with the issues of politics of language and gender, nationalism and modernity pertaining to pre and post-Independence India that have been responsible for the emergence of Indian English literature
		• Understand the place of English Writing in India in the larger field of English Literature
		• Learn to discuss critically the use of literary forms of the novel, poetry and drama by Indian English writers in distinctive ways against Indian historical and cultural contexts

ENG-HC-2026	British Poetry and Drama: 14th to 17th Centuries	This paper aims to familiarize the students with the two major forms in British literature from the 14th to the 17th centuries – poetry and drama, apart from acquainting them with the contexts that generated such literatures. The larger contexts of the Renaissance, the nature of the Elizabethan Age and its predilections for certain kinds of literary activities, and the implications of the emergence of new trends will be focused in this paper. It will also highlight the seminal issues and preoccupations of the writers and their ages as reflected in these texts.
ENG-HC-3016	History of English Literature and Forms	• Acquire a sense of the historical development of each literary form.
		• Gain understanding of the contexts in which literary forms and individual texts emerge.
		• Learn to analyze texts as representative of broad generic explorations.
ENG-HC-3026	American Literature	This paper seeks to acquaint the students with the main currents of American literature in its social and cultural contexts. The texts incorporated in the paper are a historical reflection of the growth of American society and of the way the literary imagination has grappled with such growth and change. A study of the paper, hence, should lead to an acquaintance with the American society in its evolutionary stages from the beginnings of modernism to the present as well as with exciting generic innovations and developments that have tried to keep pace with social changes.
ENG-HC-3036	British Poetry and Drama: 17th and 18th Centuries	This paper aims to familiarize the students with British literature in the 17th and 18th centuries, a time-period which sees the emergence and establishment of greatly diverse kinds of writings. The selected texts may encourage the students to look at the economic, political and social changes in (primarily) Britain during this period, such as the shifts from the Puritan Age to the Restoration and Neoclassical periods. The paper also seeks to familiarize the students with the larger contexts that generated such literatures as well as the possible impacts of the literature on society. The significance of the scientific revolution during this period may also be studied in relation to the literary productions.

ENG-HC-4016	British Literature: The 18th Century	This paper aims to familiarize the students with British literature in the 18th century. A very interesting age in which reason and rationality dominated, this age saw the publication of some of the best novels and works of non-fictional prose and poetry in the English language. Though it was not predominantly an age of drama yet one cannot but pay attention to the few plays of the century. Although the texts in the course are mostly by men it must be noted that quite a number of women writers were also part of the literary scene. The texts in the course are representative of the age and to some extent representative of the forms as well. The selected texts hope to give the students an overview of the age and the writings that the age produced.
ENG-HC-4026	British Romantic Literature	The nineteenth century begins with the triumph of the Romantic imagination, expressing itself most memorably in the poetry of Blake, Burns, Wordsworth, Coleridge, Shelley, and Keats. The poetry of the age fashions itself partly in revolt to the spirit of the previous age, with very different ideas about the relationship between humans and nature and the role of the poet taking hold. This paper includes selections from works of major Romantic poets which address these issues, enabling students to appreciate the essence of the Romantic vision. In addition they will read that remarkable oddity, Frankenstein, a novel that also illuminates Romanticism from another angle.
ENG-HC-4036	British Literature: The 19th Century	The middle and later parts of the 19th century sees the novel coming into its own, although Jane Austen has already established the prestige of the novel form through her incisive explorations of the complexity of human motive and conduct, especially in their worldly affairs. The texts chosen will expose the students to the ground-breaking efforts of the poets as well to the works of fiction writers who manage to consolidate and refine upon the achievements of the novelists of the previous era. Austen to Rossetti represents a remarkable literary development and range of works, addressing a very diverse array of social preoccupations.

ENG-HC-5016	British Literature: The 20th Century	While literary modernity can trace its roots to the works of some European writers of the 19th century, in England it is in the 20th century that the era of Modernism finds its voice in arts and literature. The works of the writers chosen for this paper are good introductions to the spirit of modernism, with its urgent desire to break with the codes and conventions of the past, experiment with new forms and idioms, and its cosmopolitan
		willingness to open itself up to influences coming from other shores. The paper goes beyond the High Modern period of the early century and the students will also get acquainted with the ethos of postmodernism through a reading of recent poetic and fictional works.
ENG-HC-5026	Women's Writing	This paper seeks to direct the students' attention to nineteenth and twentieth century writings by women living in different geographical and socio cultural settings. Students will get acquainted with the situationally distinct experiences of women articulated in a variety of genres-poetry, novels, short stories, and autobiography, while the selections from Mary Wollstonecraft-the only 18th century text prescribed, will acquaint students with the ideas contained in one of the earliest feminist treatises of the western world. Apart from an examination of the themes and styles in the prescribed texts, students will be required to engage themselves with the specificities of the contexts from which the texts emerged and also analyze the women writers' handling of the different genres to articulate their women-centric experiences.
ENG-HC-6016	Modern European Drama	The paper aims at introducing students to the innovative dramatic works of playwrights from different locations in Europe, which taken together represents the wide range of modern drama and its fortunes on the written page and the stage. The selected plays would allow an understanding of the emergence of avant garde movements and trends and dramatic devices and techniques during the period of modernism which eventually influenced theatrical practices in other nations of the world.

ENG-HC-6026	Postcolonial Literatures	European Colonialism since the fifteenth century changed the face of the world in many significant ways, and the effects of the experience of colonialism remain in many countries around the world even in the postcolonial era. This paper gives the students an opportunity to acquaint themselves with some of the novels, short stories and poems from postcolonial literatures across the world, with the texts showcasing the many regional, cultural differences and peculiarities, as well as common and shared experiences of the postcolonial condition.
ENG-HE-5016	Popular Literature	Over the years popular literature has moved from the margins to earn for itself a fairly important place in the literary and critical consciousness. This paper seeks to highlight the nature of 'popular' literature as a genre and the critical ideas underpinning the theorization of popular literature. This will be done through a practical engagement with various texts falling under its ambit.
ENG-HE-5026	Modern Indian Writing in English Translation	Literature in the various Indian languages presents a huge body of work testifying to the diverse cultural and regional preoccupations in the respective regions these languages belong to. This paper attempts to give students an introductory glimpse into this richness and diversity of Indian literature written in the regional languages.
ENG-HE-5036	Literature of the Indian Diaspora	In the light of global literature today focusing extensively on ideas of transnationalism, exile, migration, displacement, and so on, literature of the diaspora has come to exert a strong presence in the global scene. This paper will look at the diasporic experience with particular reference to Indian diasporic writers.

ENG-HE-5046	Nineteenth Century European Realism	The insistence on literary representation whose objective was to 'mirror' reality gained ground in nineteenth-century Europe across the different cultural spaces of the Continent. That is why varieties of realism surfaced in the literary traditions which were as culturally divergent as Russia and Spain. This paper is designed to provide an interesting sampling of the traditions that contributed to the growth and consolidation of European Realism in the nineteenth century. Study of these texts will also facilitate the understanding of the gradual movement towards modernism in the twentieth century which was, in many ways, both a response and a reaction to the major tendencies of European Realism.
ENG-HE-5056	Literary Criticism and Literary Theory	This paper will familiarize students with some important texts on literary criticism and literary theory. Beginning from William Wordsworth's Preface to the Lyrical Ballads the purpose will be to inform the students on the shifts in literary interpretations and critical approaches so as to equip them while reading texts across genres.
ENG-HE-5066	Science Fiction and Detective Literature	Science Fiction and Detective Literature have a fairly venerable ancestry, going back at least two centuries. Some fine literary minds have engaged with these genres, and their creations can be fruitfully studied to explore ways in which new narrative possibilities have emerged due to the human fascination for crime, mystery and improbable occurrences.
ENG-HG-1016	Individual and Society	• Understand the relationship between the individual writer and the society about/in which she writes
		• Develop skill in analyzing the author's representation of society and the individual in interaction and write critiques drawing out.
		• Learn to distinguish between literary representation and actual character and milieu

ENG-HG-2016	Modern Indian Literature	The paper on Modern Indian Literature comprises extensive writings in all genres in many languages. The different historical and cultural backgrounds of the various Indian languages and literatures add to the complexity of what is termed as Modern Indian Literatures. However, there are also things that hold India together, many commonalities, bondings, and shared experiences despite the varieties. The list of short stories and poems prescribed for this course give the student a taste of Indian writing from different regions of the country. The selection has been culled from English translations of writings in Indian languages and English compositions of Indian authors.
ENG-HG-2026	Contemporary India: Women and Empowerment	• A historical understanding of the space accorded to women in India through history • An understanding of the manner in which the social construction of gender comes about. • The ability to critique the given and stereotypical notions of such constructions.
ENG-HG-3016	British Literature	This paper is designed to offer a representative sampling of the major literary traditions of British life and culture through a study of texts in different genres. The paper will comprise of 80 marks external examination and 20 marks internal evaluation.
ENG-HG-4016 Literary Cross Currents: Forms: Prose, Poetry, Fiction & Play		In almost every period of literary history works of non-fictional prose, fiction, poetry and drama have co-existed. Also, literary cross-currents have helped shape these literary forms in a way that demonstrates their affinities as well as differences. It's important to study works with due attention to their 'formal' aspects so that what it is truly distinctive about the literary type, form, or genre to which they belong is not missed. At the same time it's necessary to contextualize the study so that the evolutionary or historical dimension of the literary works, their growth and transformation over the years is not lost sight of. This paper will acquaint the students with different literary forms, with one part addressing formal concerns including definitions, while the other part will involve
		study of actual texts which exemplify a particular literary form or genre, and which will include some consideration of the contexts of their production.

ENG-HG-4026	Language, Literature and Culture	This paper will introduce students to the relationship between language, literature and culture. Language varies according to the culture and world view of the group in which it is used. The language used in literature also has certain features which distinguish it from the language of everyday communication. Keeping these aspects in mind, students will study the following topics:
		• Speech community
		• Concept of dialect
		• Register and style
		• Diglossia
		• Bilingualism and multilingualism
		• Language and gender
		• Style in literature: cohesion, word-choice, point of view, figures of speech, the concept of genre.
ENG-SE-3014	CREATIVE WRITING	The students in this course will focus on three creative genres, fiction, non-fiction and poetry. The emphasis will be to build proficiency in readings and writings. The course encourages active class participation and lots of writings. One of the basic objectives of the course is to allow students to explore ideas, feelings, experiences and effectively communicate these stimulus using the written word. Each lecture will be tied to reading of texts, techniques, narratology and rhetorical positions. The set of readings will be given during the course and may vary each semester, whenever the course is on offer. The weightage of the programme will depend on: 10% --class lectures; 20% --journal writings on discussions of ideas, photographs, paintings, memories and experiences; 30%-- class participation/assignments/workshops/writings following prompts/writing with music 40%-- submission of fiction (20000 words) /non-fiction(20000 words) / poetry(15 poems of 150000 words) at the time of completion of the course.
ENG-SE-4014	Translation: Principles and Practice	This course is designed to give students basic skills in translation. It introduces students to the field of translation studies and gives them training in practical translation.

ENG-RC-1016	Individual and Society	• Understand the relationship between the individual writer and the society about/in which she writes
		• Develop skill in analyzing the author's representation of society and the individual in interaction and write critiques drawing out.
		• Learn to distinguish between literary representation and actual character and milieu
HIS-HC-1016	HISTORY OF INDIA	After the completion of this paper, the students will be able to explore and effectively use historical tools in reconstructing the remote past of ancient Indian pre and proto history. The course will also train the students to analyse the various stages of evolution of human cultures and the belief systems in the proto- history period
HIS-HC-1026	SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE ANCIENT WORLD	After the completion of this paper, the students will be able to explain the processes and stages of the evolution of the variety of cultural pattern throughout antiquarian periods in History. They will be able to relate the connections between the various Bronze Age civilizations in the ancient world as well as development of slave and polis societies in ancient Greece. Unit I. Evolution of Human
HIS-HC-2016	HISTORY OF INDIA- II	On successful completion of this course the students will be able to explain the economic and socio-cultural connections, transitions and stratifications during the ruling houses, empires and the politico-administrative nuances of early Indian History from 300 BCE to 300 CE.
HIS-HC-2026	SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE MEDIEVAL WORLD	After the completion of this course, the students will be able to analyse and explain the historical socio-political, administrative and economic patternsof the medieval world. They will be able to describe the emergence, growth and decline of various politico-administrative and economic patterns and the resultant changes therein. Page 8 of 37 Unit I. Roman Republic:I [a] Roman Empire [b] Slave society and Agrarian economy [c] Trade and Urbanization in Roman Empire Unit II. Roman Republic:II [a] Religion and Culture in Ancient Rome [b] Crisis of the Roman Empire [c] External Factors of decline of Roman Empire Unit III. Economic developments in Europe from the 7th to the 14th centuries

HIS-HC-3016	HISTORY OF INDIA III (c. 750 -1206)	The completion of this paper will enable the students to relate and explain the developments in India in its political and economic fields and its relation to the social and cultural patterns therein in the historical time period between c.700 to 1206. They will also be able to analyse India's interaction with another wave of foreign influence and the changes brought in its wake in the period. Unit I. Studying Early Medieval India: (a) Historical geography; Sources: texts, epigraphic and num
HIS-HC-3026	RISE OF THE MODERN WEST – I	On completion of this course, the students will be able to explain the major trends and developments in the Western world between the 14th to the 16th century CE. They will be able to explore and analyse the significant historical shifts and events and the resultant effects on the civilizations of Europe in the period.
HIS-HC-3036	HISTORY OF INDIA IV (c.1206 - 1550)	After completion of this course students will be able to explain the political and administrative history of medieval period of India from 1206 to 1550 AD. They will also be able to analyse the sources of history, regional variations, social, cultural and economic set up of the period
HIS-HC-4016	RISE OF THE MODERN WEST – II	After the completion of this course, the student will be able to explain the political and intellectual currents in Europe in the Modern Age. They will also be able to relate the circumstances and causal factors of the intellectual and revolutionary currents of both Europe and America at the beginning of the Modern age
HIS-HC-4026	HISTORY OF INDIA V (c. 1550 - 1605)	At the completion of this course, the students will be able to analyse the circumstances and historical shifts and foundations of a variety of administrative and political setup in India between c.1550-1605. They will also be able to describe the inter relationships between the economy, culture and religious practices of the period.

HIS-HC-4036	HISTORY OF INDIA VI (c. 1605 - 1750)	After the completion of this course, the students will be able to explain and reconstruct the linkages of the history of India under the Mughal Rule. As a whole, this course will nable them to relate to the socio-economic and religious orientation of the people of Medieval period in India.
HIS-HC-5016	History of Modern Europe- I (c. 1780-1939)	After the completion of this course the students will be able to evaluate the historical evolution and political developments that occurred in Europe in the period between 1780 to 1939. They will also be also to critically analyse the evolution of social classes, nation states, evolution of capitalism and nationalist sentiment in Europe. They will also be able to relate to the variety of causes that dragged the world into devastating wars in the intervening period. Unit I. The French Revolution and its European repercussions:
HIS-HC-5026	HISTORY OF INDIA VII (c. 1780 - 1857)	After the completion of this course, the students will be able to relate the circumstances leading to the consolidation of colonial rule over India and their consequences. They will also be able to explain the orientation of the indigenous population and the masses towards resistance to the colonial exploitation. The course will also enable the students to analyse popular uprisings among the tribal, peasant and common people against the British policies. Unit I. Expansion and Consolidation of colonial Power: [a] European trading companies in India : Portuguese, Dutch, English and Frenc
HIS-HC-6016	HISTORY OF INDIA VIII (c. 1857 - 1950)	At the completion of this course, the learners will be able to analyse the course of British colonial exploitation, the social mobilizations during the period between c.1857 to 1950 and also the techniques of Indian resistance to British policies. It will also enable the students to explain the circumstances leading to de-colonization and also the initial period of nation building in India. Unit I. Cultural changes and Socio-Religious Reform Movements

HIS-HC-6026	HISTORY OF MODERN EUROPE II (c. 1780 -1939)	After the completion of this course, the students will be able to analyse the historical developments in Europe between c.1780 to 1939. As the course structure of this paper focuses on the democratic and socialist foundations modern Europe, the students will be able to situate the historical development of working class movements, socialist upsurge and the economic forces of the two wars and the other ideological shifts of Europe in the period Unit I. Liberal D
HIS –HE-5016	HISTORY OF ASSAM (UPTO c. 1228)	This paper will give a general outline of the history of Assam from the earliest times to the advent of the Ahoms in the 13th century. Upon completion, students will be acquainted with major stages of developments in the political, social and cultural history of Assam during the early times.
HIS –HE-5026	HISTORY OF ASSAM (c. 1228 –1826)	On completion of this paper, students will be able to identify major stages of developments in the political, social and cultural history of Assam during the medieval times. This paper will enable the student to explain the history of Assam from the 13th century to the occupation of Assam by the English East India Company in the first quarter of the 19th century.
HIS –HE-6016	HISTORY OF ASSAM (c. 1826 – 1947)	Upon completion of this course, students will be able to describe the period of British rule in Assam after its annexation by the imperialist forces. They will also be able to situate the development of nationalism in Assam and its role in India's freedom struggle. The course would enable the students to analyse the main currents of the political and socio-economic developments in Assam during the colonial period.
HIS –HE-6026	ASSAM SINCE INDEPENDENCE	Students will be able to assess the aftermath of Partition and other socio□economic developments in post-independence Assam upon completion of this course. They will also be able to identify the main currents of political and socio-economic development in Assam after India's independence and the causes and impact of various struggles and movements in contemporary Assam. Unit I- Political developments [a] Political changes and impact of partition

HIS –HG-1016	HISTORY OF INDIA (FROM THE EARLIEST TIMES UP TO c. 1206)	Upon completion of this course, students will be able to explain the emergence of state system in North India, development of imperial state structure and state formation in South India in the early period. They will be able to understand the changes and transformations in polity, economy and society in early India and the linkages developed through contacts with the outside world.
HIS –HG-2016	HISTORY OF INDIA (c.1206 to 1757)	Upon completion of this course, students will be able to analyse the political and social developments in India between 1206-1757. Students will be able to explain the formation of different States during this period along with their administrative apparatuses, and the society, economy and culture of India in the 13th to mid-18th century period
HIS –HG-3016	HISTORY OF INDIA (c. 1757 to 1947)	Upon completion of this course, students will be able to understand the major factors that led to the establishment and consolidation of British rule in India. They will also be able to identify the process of growth of resistance against British colonial rule and the eventual growth of Indian nationalist movement, which ultimately led to the end of the British rule in the country
HIS –HG-4016	SOCIAL AND ECONOMIC HISTORY OF ASSAM	Upon completion of this course, students will be able to analyse and explain the socio-economic history of Assam including among others the development of caste system, religious beliefs, agriculture and land system, the social organization, trade and commerce, various agricultural regulations, plantation economy, development of modern industries, transport system, education, the emergence of middle class, development of literature and press, and growth of public associations
HIS –SE-3014	Historical Tourism in North East India	After completing this course, students will be able to explain Tourism in North East India with special reference to the historical monuments, cultural and ecological elements and places of the north east India country as tourist and heritage sites of the nation. They will be able to relate to the growing vocation of tourism as an industry and the applicability of historical knowledge for its growth

HIS –SE-4014	Oral Culture and Oral History	After this course the students will be able to explain complex interrelationships of structures or events in the context of broader social and cultural framework of societies through 'public memory' and use oral history to preserve oral culture and local history The students will be able to espouse the relevance to the northeastern region of India with its diverse culture and ethnic communities whose history is largely oral. The students will be able to use 'Public memory' as a tool and a source not only to write public history but also to explore new knowledge in the humanities , social sciences and even in disciplines like architecture, communication studies, gender studies, English, history, philosophy, political science, religion, and sociology. In-semester assessment: Students shall carry out a small project (submission not less than 2000 words) using the Oral History method. It may be based on interviews of persons having information of past event or phenomena. No sessional examination is required for this course. Unit I. Concepts: (a) Orality, Oral Tradition, Oral Cultur
POL HC 1016	Understanding Political Theory	This course is divided into two sections. Section A introduces the students to the idea of political theory, its history and approaches, and an assessment of its critical and contemporary trends. Section B is designed to reconcile political theory and practice through reflections on the ideas and practices related to democracy. Course Outcome: • To Introduce the idea of political theory and various approaches • To enable the students to assess the contemporary trends of political theory • To reconcile theory and practice in relation to democracy I: Introducing Political Theory (30 Lectures) 1. What is Politics: Theorizing the 'Political' 2. Traditions of Political Theory: Liberal, Marxist, Anarchist and Conservative 3. Approaches to Political Theory: Normative, Hist

POL HC 1026	Constitutional Government and Democracy in India	This course acquaints students with the constitutional design of state structures and institutions, and their actual working overtime. The Indian Constitution accommodates conflicting impulses (of liberty and justice, territorial decentralization and a strong union, for instance) within itself. The course traces the embodiment of some of these conflicts in constitutional provisions, and shows how these have played out in political practice. It further encourages a study of state institutions in their mutual interaction, and in interaction with the larger extra-constitutional environment. Course Outcome: • To acquaint students with constitutional design of state structures and institutions • To understand the conflicts in constitutional provisions • To make them comprehend the state institutions in relation to extra constitutional environment.
POL HC 2016	Political Theory-Concepts and Debates	This course is divided into two sections. Section A helps the student familiarize with the basic normative concepts of political theory. Each concept is related to a crucial political issue that requires analysis with the aid of our conceptual understanding. This exercise is designed to encourage critical and reflective analysis and interpretation of social practices through the relevant conceptual toolkit. Section B introduces the students to the important debates in the subject. These debates prompt us to consider that there is no settled way of understanding concepts and that in the light of new insights and challenges, besides newer ways of perceiving and interpreting the world around us, we inaugurate new modes of political debates. Course outcomes: After reading the course, the students would • Understand the various concepts in political theory and appreciate how they can be helpful to analyse crucial political issues • Understand the significance of debates in political theory in exploring multiple perspective to concepts, ideas and issues. • Appreciate how these concepts and debates enrich political life and issues surrounding it.

POL HC 3016	Introduction to Comparative Government and Politics	This is a foundational course in comparative politics. The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. More specifically the course will focus on examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries. Course Outcome: • To make students understand the basic concepts in comparative politics, • To make students classify the different political systems and historical context of modern governments, • To enable students to have a comparative analysis of countries related to their political institutions and behaviour. I. Understanding Comparative Politics (8 lectures
POL HC 3026	PERSPECTIVES ON PUBLIC ADMINISTRATION	The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the recent trends, including feminism and ecological conservation and how the call for greater democratization is restructuring public administration. The course will also attempt to provide the students a comprehensive understanding on contemporary administrative developments. Course Outcome: • To enable students to learn the basic concepts related to public administration and its importance, • To make students learn the major theories of public administration, • To enable students to have an understanding of public policy and its formulation, • To familiarize students with the major approaches and recent debates related to field of public administration.

POL HC 3036	Perspectives on International Relations and World History	This paper seeks to equip students with the basic intellectual tools for understanding International Relations. It introduces students to some of the most important theoretical approaches for studying international relations. The course begins by historically contextualizing the evolution of the international state system before discussing the agency structure problem through the levels-of-analysis approach. After having set the parameters of the debate, students are introduced to different theories in International Relations. It provides a fairly comprehensive overview of the major political developments and events starting from the twentieth century. Students are expected to learn about the key milestones in world history and equip them with the tools to understand and analyze the same from different perspectives. A key objective of the course is to make students aware of the implicit Euro - centricism of International Relations by highlighting certain specific perspectives from the Global South. Course outcome: • To make students understand the key theoretical approaches in International relations, • To familiarize students with the evolution of International state systems and its importance. • To make students aware of the key theoretical debates in International relations • To enable
POL HC 4016	Political Processes and Institutions in Comparative Perspective	In this course students will be trained in the application of comparative methods to the study of politics. The course is comparative in both what we study and how we study. In the process the course aims to introduce undergraduate students to some of the range of issues, literature, and methods that cover comparative political. Course Outcomes: • To understand, comprehend and analyse the complex nature and functioning of the political systems, political institutions and corresponding issues to these both in a country specific case of India and cross-country perspectives. • To demonstrate critical thinking about key issues of political system of different forms, political process and public policy. • to use the contents and sub-units of the course as yardsticks for comparing these political systems and processes

POL HC 4026	PUBLIC POLICY AND ADMINISTRATION IN INDIA	The paper seeks to provide an introduction to the interface between public policy and administration in India. The essence of public policy lies in its effectiveness in translating the governing philosophy into programs and policies and making it a part of the community living. It deals with issues of decentralization, financial management, citizens and administration and social welfare from a non-western perspective. Course Outcomes: • be familiarised with and gain knowledge about the processes of public policy making in India and their significance in administering the state. • develop the ability to assess the functioning of the government and the administration in ensuring a citizen centric welfare administration in India.
POL HC 4036	Global Politics	This course introduces students to the key debates on the meaning and nature of globalization by addressing its political, economic, social, cultural and technological dimensions. In keeping with the most important debates within the globalization discourse, it imparts an understanding of the working of the world economy, its anchors and resistances offered by global social movements while analyzing the changing nature of relationship between the state and trans-national actors and networks. The course also offers insights into key contemporary global issues such as the proliferation of nuclear weapons, ecological issues, international terrorism, and human security before concluding with a debate on the phenomenon of global governance. Course Outcomes: • To enable students to understand how to approach a wide range of important global political and economic policy problems and participate in public policy debates on the crucial issues facing the world today. • To have knowledge of the essential theoretical assumptions underlying globalisation's conceptual frameworks and their relationships to policy interventions. • to demonstrate elementary knowledge of major issues and subject-matters surrounding globalisation that decides the international relations- political, economic and

POL HC 5016	Classical Political Philosophy	This course goes back to Greek antiquity and familiarizes students with the manner in which the political questions were first posed. Machiavelli comes as an interlude inaugurating modern politics followed by Hobbes and Locke. This is a basic foundation course for students. Course Outcome : • To interpret ideas underlying traditions in classical political philosophy • To analyze the debates and arguments of leading political philosophers belonging to different traditions of the period • To appraise the relevance of classical political philosophy in understanding contemporary politics
POL HC 5026	Indian Political Thought-I	This course introduces the specific elements of Indian Political Thought spanning over two millennia. The basic focus of study is on individual thinkers whose ideas are however framed by specific themes. The course as a whole is meant to provide a sense of the broad streams of Indian thought while encouraging a specific knowledge of individual thinkers and texts. Selected extracts from some original texts are also given to discuss in class. The list of additional readings is meant for teachers as well as the more interested students. Course Outcome: • To underline themes and issues in political traditions of pre-colonial India. • To compare and contrast positions of different political traditions those were present in pre-colonial India. • To evaluate the relevance of political thought of pre-colonial India for contemporary politics.
POL HC 6016	Modern Political Philosophy	Philosophy and politics are closely intertwined. We explore this convergence by identifying four main tendencies here. Students will be exposed to the manner in which the questions of politics have been posed in terms that have implications for larger questions of thought and existence. Course Outcome : • To interpret ideas underlying traditions in modern political philosophy • To analyze the debates and arguments of leading political philosophers of different philosophical traditions • To appraise the relevance of modern political philosophy in understanding contemporary politics

POL HC 6026	Indian Political Thought-II	Based on the study of individual thinkers, the course introduces a wide span of thinkers and themes that defines the modernity of Indian political thought. The objective is to study general themes that have been produced by thinkers from varied social and temporal contexts. Selected extracts from original texts are also given to discuss in the class. The list of additional readings is meant for teachers as well as the more interested students. Course Outcome: • To underline themes and issues in political thought of modern India. • To compare and contrast positions of leading political thinkers in India on issues those are constitutive of modern India. • To assess the relevance of political thought of modern India in understanding contemporary politics.
POL SE 3014	PARLIAMENTARY PROCEDURES AND PRACTICES	The course attempts to make the students familiar with legislative practices in India with an orientation to equip them with the adequate skills of participation in deliberative processes and democratic decision making. The introductory unit of the course aims to provide basic understanding on the constitutional provisions related to the process of legislations as well as the kinds of bills. The second unit of this course seeks to enhance proper understanding related to the procedures, practices related to the passage of a bill from drafting to that of the passing of the Bill. Third unit is about different Committees in the House, and the Fourth unit is on hours and motions in the House. Course outcome: • To help students in understanding the practical approaches to legislatives practices and procedures, • To make students understand the procedures and processes related to drafting a Bill and the passage of the Bill, • To enable students to have an understanding of the importance of Parliamentary Committees, • To make students learn about the basic functioning of Parliament.

POL SE 3024	YOUTH AND NATION-BUILDING	The aim of this course is to highlight the importance of NCC and NSS. The students will be able to get involved with the NCC and the NSS and learn about its activities and undertake tasks under its aegis. The students will also be able to learn about the basics of disaster preparedness and its management. Course Outcome: • To enable students to learn the importance of youth in NSS and NCC, • To make students understand the activities related to NSS and NCC and its importance, • To make students learn the basics of National Disaster Management and its importance. Unit –I: Youth and National Service Scheme (NSS
POL SE 4014	Panchayati Raj in Practice	This course acquaints students with the Panchayati Raj Institutions and their actual working. It further encourages a study of PRIs in their mutual interaction and their interaction with the people. Course outcomes: • This paper will help students understand the importance of grassroot political institutions in empowering people. • This paper will highlight the complex challenges faced by PRIs in India and mechanisms involved to make it more participatory and inclusive in nature.
POL SE 4024	CITIZEN AND RIGHTS	This course aims to understand law as a source of rights, as a progressivelywidening sphere of substantive justice, welfare, and dignity. This relationship between lawsand rights will be studied through specific values which have come to be seen as integralfor a democratic society viz., equality and non-discrimination, empowerment, redistributionand recognition of traditional rights etc. Course outcome: • To analyse the linkages between citizenship, law, rights and equality • To understand the measures of discrimination, justice and empowerment and the ways to protect the same. • To evaluate the idea of justice and assess its relevance in context of contemporary India. I. Equality and non-discrimination (
POL HE 5016	HUMAN RIGHTS	• To interpret ideas underlying traditions in classical political philosophy • To analyze the debates and arguments of leading political philosophers belonging to different traditions of the period • To appraise the relevance of classical political philosophy in understanding contemporary politics

POL HE 5026	Public Policy in India	This course provides a theoretical and practical understanding of the concepts and methods that can be employed in the analysis of public policy. It uses the methods of political economy to understand policy as well as understand politics as it is shaped by economic changes. The course will be useful for students who seek an integrative link to their understanding of political science, economic theory and the practical world of development and social change. Course Outcome: • To be familiarised with and gain knowledge about the processes of public policy making in India • to assess the functioning of the government and the administration in ensuring a citizen centric welfare administration in India.
POL HE 5036	Understanding Global Politics	This course aims to provide students a basic yet interesting and insightful way of knowing and thinking about the world around them. It is centered around three sets of basic questions starting with what makes the world what it is by instructing students how they can conceptualize the world and their place within it. The second module focuses on the basic fault lines that drives the world apart and the last one is designed to help students explore how and why they need to think about the 'world' as a whole from alternate vantage points. Course Outcomes: • To describe the key concepts underlying the idea of world order and their historical evolution. • To comprehend diverse approaches to understand global political and economic problems. • To demonstrate relevance of international actors in understanding world politics.
POL HE 5046	Select Constitutions	The course introduces the constitutional and political systems of four (4) countries.Students will have a stronger and more informed perspective on approaches to studying the constitutional and political systems of these countries in a comparative manner. Course outcomes: • Students will be able to understand the importance of constitutions; • This paper is an integral part of public services examinations. • Students will be introduced to the various types of constitutions and the forms of governments from different parts of the world
POL HE 6016	India's Foreign Policy in a globalizing world	• To underline the issues in India's foreign policy • To evaluate the impact of global development on India's foreign policy • To demonstrate the change and continuity that marks India's foreign policy.

POL HE 6026	Understanding South Asia	•To identify geo-political and historical construction of South Asia as a region. • To analyse the politics and socio-economic issues of the South Asian Region. • To assess the relevance of regionalism in South Asia and India's position in the region.
POL HE 6036	Women, Power and Politics	• To explain key concepts that offers an understanding of gender inequality. • To appraise the historical evolution of the Women's movement in India and issues addressed by it • To underline the contemporary issues that affect women's participation in politics
POL HE 6046	Social Movements in North-east India	• To introduce the students with the social movements of the North-East India and nature of these. • To engage them with historical development of such social movements • To understand the new social movements of the region
POL HG 1016	Introduction to Political Theory	• To introduce the key concepts in political theory • To make students understand the aspects of conceptual analysis • To engage the students in application of concepts and their limitations
POL HG 1026	POLITICS IN NORTH-EAST INDIA	• To introduce the students with the region and nature of its politics • To engage them with historical development of the region • To understand the contemporary developments of the region
POL HG 1036	GOVERNANCE: ISSUES AND CHALLENGES	• To introduce major concepts and debates of Governance • To enable the students to relate governance with globalization, environment and development • To make students explore good governance initiatives in India
POL HG 2016	Indian Government and Politics	• Appreciate the approaches to the study of Indian politics and the changing nature of the state • Understand the basic features of the Indian constitution and its institutional functioning • examine the changing role of caste, class and patriarchy and their impact on politics • understand the dynamics of social movements in India.

POL HG 2026	Feminism: Theory and Practice	• This course on gender studies will open up the structural and institutional basis of patriarchy as well as establish that gender identity and gender injustice cannot be understood in isolation, but only with reference to caste, class and religious community identities. • Understand the history of feminism and its origins in different parts of the world • Appreciate the Indian Women's Movement and its role in foregrounding important issues relating to women's position in the society, economy and polity
POL HG 2036	LOCAL RURAL AND URBAN GOVERNANCE	• Understand the historical evolution of local governance in India • Understand the working of rural and urban governance in India • Understand the workings of committees and commissions associated with local governance
POL HG 3016	Comparative Government and Politics	• To make students have a basic understanding of comparative political analysis, • To make students learn the classification of political systems from a comparative politics framework. • To make students learn the classification of governments and the political behavior of institutions and the changes in the nature of the nation-state.
POL HG3026	Gandhi and the Contemporary World	• To make students understand relevance of Gandhi and his philosophy in modern times, • To familiarize students with Gandhian ideology and leadership, • To make students learn Gandhi's critique on modern civilization and development, • To make students understand Gandhi's political strategy and philosophy.
POL HG 3036	UNITED NATIONS AND GLOBAL CONFLICTS	• To make students learn the importance of United Nations as an organization • To enable students to have a basic understanding of the political processes of the United Nations • To make students to learn the relevance of United Nations and its intervention in global conflicts critically.

POL HG 4016	Introduction to International Relations	• To demonstrate basic understanding of scientific methods of inquiry in international relations. • To understand how international relations influence societies. • To demonstrate a basic understanding of the foundational theories and concepts in international relations. • To analyse the current world events and their implications on the Indian Foreign policy decision making process by applying prominent theories of international relations and generate substantial research question on the topics
POL HG 4026	Understanding Ambedkar	• To analyse Ambedkar's views on caste, class, religion, nationalism, gender and constitutional democracy. • To understand contribution of Ambedkar to political thought in modern India. • To evaluate political ideas of Ambedkar and assess its relevance in context of contemporary politics.
POL HG 4036	Politics of Globalization	• To analyse the historical evolution of globalisation. • To understand social, economic, cultural and political impact of globalisation. • To evaluate the idea of globalisation and assess its relevance in context of contemporary politics.
SKT- HC-1016	Classical Sanskrit Literature (Poetry)	This course aims to get students acquainted with Classical Sanskrit Poetry. It intends to give an understanding of literature, through which students will be able to appreciate the development of Sanskrit Literature. The course also seeks to help students to negotiate texts independently.
SKT- HC-1026	Critical Survey of Sanskrit Literature	This course aims to get students acquainted with the journey of Sanskrit literature from Vedic literature to Purāṇa. It also intends to give an outline of different shastric traditions, through which students will be able to know the different genres of Sanskrit Literature and Śāstras.
SKT- HC-2016	Classical Sanskrit Literature (Prose)	This course aims to acquaint students with Classical Sanskrit Prose literature. Origin and development of prose, Important prose romances and fables Sanskrit are also included here for students to get acquainted with the beginnings of Sanskrit Prose literature. The course also seeks to help students negotiate texts independently.

SKT- HC-2026	Self Management in the Gītā	The objective of this course is to study the philosophy of self-management in the Gītā. The course seeks to help students negotiate the text independently without referring to the traditional commentaries so as to enable them to experience the richness of the text.
SKT- HC-3016	Classical Sanskrit Literature (Drama)	This course aims to acquaint students with three most famous dramas of Sanskrit literature which represent three stages in the growth of Sanskrit drama.
SKT- HC-3026	Poetics and literary criticism	The study of sāhityaśāstra (Sanskrit Poetics) embraces all poetic arts and includes concepts like alaṅkāra, rasa, rīti, vakrokti, dhvani, aucitya etc. The entire domain of Sanskrit poetics has flourished with the topics such as definition of poetry and divisions, functions of word and meaning, theory of rasa and alaṁkāra (figures of speech) and chandas (metre), etc. This develops capacity for creative writing and literary appreciation.
SKT- HC-3036	Indian Social Institutions and Polity	Social institutions and Indian Polity have been highlighted in Dharma-śāstra literature The aim of this course is to make the students acquainted with various aspects of social institutions and Indian polity as propounded in the ancient Sanskrit texts such as Saṁhitās, Mahābhārata, Purāṇa, Kauṭilya's Arthaśāstra and other works known as Nītiśāstra
SKT- HC-4016	Indian Epigraphy, Paleography and Chronology	This course aims to acquaint the students with the epigraphical journey in Sanskrit, the only source which directly reflects the society, politics, geography and economy of the time. The course also seeks to help students to know the different styles of Sanskrit writing.
SKT- HC-4026	Modern Sanskrit Literature	The purpose of this course is to expose students to the rich & profound tradition of modern creative writing in Sanskrit, enriched by new genres of writing.
SKT- HC-4036	Sanskrit and World Literature	This course is aimed to provide information to students about the spread & influence of Sanskrit literature and culture through the ages in various parts of the world in medieval & modern times.

SKT- HC-5016	Vedic Literature	This course on Vedic literature aims to introduce various types of vedic texts. Students will also be able to read one Upaniṣad, namely, Muṇḍaka, where primary Vedānta-view is propounded.
SKT- HC-5026	Sanskrit Grammar	To acquaint the students with general Sanskrit Grammer
SKT- HC-6016	Ontology and Epistemology	This course aims to get the students acquainted with the cardinal principles of the Nyāya-Vaiśeṣika philosophy through the Tarkasaṁgraha and to enable students to handle philosophical texts in Sanskrit. It also intends to give them an understanding of essential aspects of Indian Philosophy.
SKT- HC-6026	Sanskrit Composition and Communication	This paper aims at teaching composition and other related informations based on Laghusiddh ntakaumud Vibhaktyartha Prakara a.
SKT-HE-5016	Art of Balanced Living	This course aims to get the students acquainted with theories of art of living inherent in Sanskrit literature and apply them to live a better life. It also intends to make students work on human resource management for giving better results.
SKT-HE-5026	Theatre and Dramaturgy	Being audio-visual, drama is considered to be the best amongst all forms of arts.. The history of theatre in India is very old, the glimpses of which can be traced in the hymns (saṁvādasūkta) of the Ṛgveda. The dramaturgy was later developed by the Bharatamuni. The objectives of this curriculum are to identify the beauty of drama and to introduce classical aspects of development of Indian theatre among the students.
SKT-HE-5036	Sanskrit Linguistic	This course aims to get the students acquainted with comparative Philology and its relation with Sanskrit language. It will also make the students acquire knowledge about the historical development of Sanskrit from Indo-Europen family of languages.

SKT-HE-6016	Fundamentals of Ayurveda	Ayurveda is a traditional Indian system of healthcare that has been traced back as early as 5,000 BCE. Through the classroom lectures and discussions, this course will introduce students to the theory of Ayurveda. The theory modules sessions that make up this course offer an introduction to Ayurveda that is well rounded, comprehensive and useful for students in their own day-to-day living. The major objective is to understand the basic principles and concepts of preventative medicine and health maintenance, diet and nutrition, usage of commonly used spices and herbs and outline of Ayurvedic therapeutic procedures in Ayurveda.
SKT-HE-6026	Environmental Awareness in Sanskrit literature	The National Culture of every country depends on its environment, climatic conditions and human behavior with natural resources. Sanskrit is the vehicle of civilization and culture of India. Nature oriented eco- friendly thoughts of Sanskrit Literature have been serving the human race from the time immemorial. Religion was probably used in ancient India as a tool to protect nature and natural resources. Therefore, the Sanskrit literature is of great utility to us and to the world environment at large. The aim of this course is to make the students acquainted with the basic concept of Indian Science of Environment and salient features of environmental awareness as reflected in Vedic and Classical Sanskrit literature.
SKT-HE-6036	Kamarupa School of Dharmasastra	
SKT-HG-1016	Basic Sanskrit	This is an elementary course in Sanskrit language designed for students who wish to learn Sanskrit from the very beginning. Essential Sanskrit grammar will be introduced (without reference to Panini's sutras) through the multiple example method with emphasis on students constructing themselves sentences.
SKT-HG-2016	Indian Culture and Social Issues	This paper is designed to introduce nuances of Indian culture to students and to show how cultural traditions have evolved. The paper also engages them in debates about certain significant socio-cultural issues.

SKT-HG-3016	Basic Principles of Indian Medicine System (Ayurveda)	Ayurveda is a traditional Indian system of healthcare that has been traced back to as early as 5,000 BCE. This course will introduce students to the theory of yurveda. The major objective is to understand the basic principles and concepts of preventive medicine and health care, diet and nutrition, usage of commonly used spices and herbs and an outline of yurvedic therapeutic procedures in yurveda.
SKT-HG-4016	Fundamentals of Indian Philosophy	This course aims to get the students acquainted with the basic approach to study Indian philosophy. It also intends to give an elementary understanding of Indian Philosophy and to enable students to handle philosophical texts in Sanskrit easily.
SKT-SE-3014	Acting and Script Writing	The acting is connected with the practical aspect of the play and depends on actor while script writing is closely related with society and this paper aims at teaching the theoretical aspect of this art. The training of composition and presentation of drama can further enhance one's natural talent. This paper deals with the rules of presentation of play (acting) and dramatic composition (script writing) and aims at sharpening the dramatic talent of the students
SKT-SE-4014	Sanskrit Metre and Music	The objectives of this course to learn Sanskrit meter for analysis and lyrical techniques. Students will get the complete information regarding selected Vedic and Classical meters with lyrical techniques.
CHE-HC-1016	INORGANIC CHEMISTRY-I	On successful completion, students would have clear understanding of the concepts related to atomic and molecular structure, chemical bonding, periodic properties and redox behaviour of chemical species. Students will also have hands on experience of standard solution preparation in different concentration units and learn volumetric estimation through acid-base and redox reactions.

CHE-HC-1026	PHYSICAL CHEMISTRY I	In gaseous state unit the students will learn the kinetic theory of gases, ideal gas and real gases. In liquid state unit, the students are expected to learn the qualitative treatment of the structure of liquid along with the physical properties of liquid, viz, vapour pressure, surface tension and viscosity. In the molecular and crystal symmetry unit they will be introduced to the elementary idea of symmetry which will be useful to understand solid state chemistry and group theory in some higher courses. In solid state unit the students will learn the basic solid state chemistry application of x-ray crystallography for the determination of some very simple crystal structures. The students will also learn another important topic “ionic equilibria” in this course.
CHE-HC-2016	ORGANIC CHEMISTRY I	Students will be able to identify different classes of organic compounds, describe their reactivity and explain/analyze their chemical and stereo chemical aspects.
CHE-HC-2026	PHYSICAL CHEMISTRY II	In this course the students are expected to learn laws of thermodynamics, thermochemistry, thermodynamic functions, relations between thermodynamic properties, Gibbs Helmholtz equation, Maxwell relations etc. Moreover the students are expected to learn partial molar quantities, chemical equilibrium, solutions and colligative properties. After completion of this course, the students will be able to understand the chemical systems from thermodynamic point of view
CHE-HC-3016	INORGANIC CHEMISTRY-II	On successful completion of this course students would be able to apply theoretical principles of redox chemistry in the understanding of metallurgical processes. 18 Students will be able to identify the variety of s and p block compounds and comprehend their preparation, structure, bonding, properties and uses. Experiments in this course will boost their quantitative estimation skills and introduce the students to preparative methods in inorganic chemistry.
CHE-HC-3026	ORGANIC CHEMISTRY-II	Students will be able to describe and classify organic compounds in terms of their functional groups and reactivity

CHE-HC-3036	PHYSICAL CHEMISTRY-III	The students are expected to learn phase rule and its application in some specific systems. They will also learn rate laws of chemical transformation, experimental methods of rate law determination, steady state approximation etc. in chemical kinetics unit. After attending this course the students will be able to understand different types of surface adsorption processes and basics of catalysis including enzyme catalysis, acid base catalysis and particle size effect on catalysis.
CHE-HC-4016	INORGANIC CHEMISTRY-III	On successful completion, students will be able name coordination compounds according to IUPAC, explain bonding in this class of compounds, understand their various properties in terms of CFSE and predict reactivity. Students will be able to appreciate the general trends in the properties of transition elements in the periodic table and identify differences among the rows. Through the experiments students not only will be able to prepare, estimate or separate metal complexes/compounds but also will be able to design experiments independently which they should be able to apply if and when required.
CHE-HC-4026	ORGANIC CHEMISTRY-III	Students shall demonstrate the ability to identify and classify different types of N-based derivatives, alkaloids and hetrocyclic compounds/explain their structure mechanism and reactivity/critically examine their synthesis and reactions mechanism.
CHE-HC-4036	PHYSICAL CHEMISTRY-IV	In this course the students will learn theories of conductance and electrochemistry. Students will also understand some very important topics such as solubility and solubility products, ionic products of water, conductometric titrations etc. The students are also expected to understand the various parts of electrochemical cells along with Faraday's Laws of electrolysis. The students will also gain basic theoretical idea of electrical & magnetic properties of atoms and molecules.
CHE-HC-5016	ORGANIC CHEMISTRY-IV	Students will be able to explain/describe the important features of nucleic acids, amino acids and enzymes and develop their ability to examine their properties and applications.

CHE-HC-5026	PHYSICAL CHEMISTRY V	After completion of this course the students are expected to understand the application of quantum mechanics in some simple chemical systems such as hydrogen atom or hydrogen like ions. The students will also learn chemical bonding in some simple molecular systems. They will able to understand the basics of various kinds of spectroscopic techniques and photochemistry.
CHE-HC-6016	INORGANIC CHEMISTRY-IV	By studying this course the students will be expected to learn about how ligand substitution and redox reactions take place in coordination complexes. Students will also learn about organometallic compounds, comprehend their bonding, stability, reactivity and uses. They will be familiar with the variety of catalysts based on transition metals and their application in industry. On successful completion, students in general will be able to appreciate the use of concepts like solubility product, common ion effect, pH etc. in analysis of ions and how a clever design of reactions, it is possible to identify the components in a mixture. With the experiments related to coordination compound synthesis, calculation of 10Dq, controlling factors etc. will make the students appreciate the concepts of theory in experiments.
CHE-HC-6026	ORGANIC CHEMISTRY-V	Students will be able to explain/describe basic principles of different spectroscopic techniques and their importance in chemical/organic analysis. Students shall be able to classify/identify/critically examine carbohydrates, polymers and dye materials.
CHE-HE-5016	APPLICATIONS OF COMPUTERS IN CHEMISTRY	After the completion of this course it will help the student to interpret laboratory data, curve fitting of experimental work, also perform quantum mechanical calculations for various molecular models.
CHE-HE-5026	ANALYTICAL METHODS IN CHEMISTRY	On successful completion students will be have theoretical understanding about choice of various analytical techniques used for qualitative and quantitative characterization of samples. At the same time through the experiments students will gain hands on experience of the discussed techniques. This will enable students to take judicious decisions while analyzing different samples.

CHE-HE-5036	MOLECULAR MODELLING & DRUG DESIGN	Students will be able to identify basic components of computer and programming as applied to computer assisted design and modelling of molecules
CHE-HE-5046	NOVEL INORGANIC SOLIDS	After the completion of this course it will also be possible for the students to opt for studying an interdisciplinary master's programme with an emphasis on the synthesis and applications of various materials or take up a job in the materials production and/or processing industry.
CHE-HE-5056	POLYMER CHEMISTRY	After completion of this course the students will learn the definition and classifications of polymers, kinetics of polymerization, molecular weight of polymers, glass transition temperature, and polymer solutions etc. They also learn the brief introduction of preparation, structure and properties of some industrially important and technologically promising polymers.
CHE-HE-5066	INSTRUMENTAL METHODS OF CHEMICAL ANALYSIS	Students shall be able to explain the theoretical basis of different analytical techniques, identify the experimental requirements and compare/analyze the data/results thereof.
CHE-HE-6016	GREEN CHEMISTRY	Apart from introducing learners to the principles of green chemistry, this course will make them conversant with applications of green chemistry to organic synthesis. Students will be prepared for taking up entry level jobs in the chemical industry. They also will have the option of studying further in the area.
CHE-HE-6026	INDUSTRIAL CHEMICALS AND ENVIRONMENT	After successful completion of the course, students would have learnt about the manufacture, applications and safe ways of storage and handling gaseous and inorganic industrial chemicals. Students will get to know about industrial metallurgy and the energy generation industry. Students will also learn about environmental pollution by various gaseous, liquid wastes and nuclear wastes and their effects on living beings. Finally, the students will learn about industrial waste management, their safe disposal and the importance of environment friendly "green chemistry" in chemical industry.

CHE-HE-6036	INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE	This course will establish the basic foundation of industrial inorganic chemistry among the students. This will be helpful for pursuing further studies of industrial chemistry in future. Experiments will help the Students to gather the experience of qualitative and quantitative chemical analysis. Students will be capable of doing analysis of the inorganic materials which are used in our daily life. They will have insight of the industrial processes.
CHE-HE-6046	RESEARCH METHODOLOGY FOR CHEMISTRY	After completing this course, students should be able to construct a rational research proposal to generate fruitful output in terms of publications and patents in the field of chemical sciences.
CHE-HE-6056	DISSERTATION	Student will complete a project work and then prepare a report on that.
CHE-SE-3024	IT SKILLS FOR CHEMISTS	Course learning outcomes focus on skill development related to basic computer operations and information technology. After completing the course the incumbent is able to use the computer for basic purposes of preparing his personnel/business letters, viewing information on Internet (the web), sending mails, using internet banking services etc. After opting this course the students are expected to accumulate the skills in writing activities and Handling numeric data.
CHE-SE-3034	BASIC ANALYTICAL CHEMISTRY	Upon completion of this course, students shall be able to explain the basic principles of chemical analysis, design/implement microscale and semimicro experiments, record, interpret and analyze data following scientific methodology.
CHE-SE-3044	CHEMICAL TECHNOLOGY & SOCIETY	Students shall be familiarized with processes and terminologies in chemical industry, like mass balance, energy balance etc... Learners will be able to use chemical and scientific literacy as a means to better understand the topics related to the society. Chemical Technolog

CHE-SE-3054	CHEMOINFORMATICS	On the successful completion of the course, the students should be able to explain, interpret and critically examine the utility of computers and software tools to solving chemistry related problems. Recognize, apply, compare and predict chemical structures, properties, and reactivity and; solve chemistry related problems. Employ critical thinking and scientific reasoning to design and safely implement laboratory experiments and keep the records of the same. Compile, interpret and analyze the qualitative/quantitative data and communicate the same in a scientific literature
CHE-SE-3064	BUSINESS SKILLS FOR CHEMISTS	students shall be able to explain and/or analyze the important steps of business operations, finance and intellectual property as applied to chemical industry.
CHE-SE-3074	INTELLECTUAL PROPERTY RIGHTS (IPR)	After completing this course, students will have in-depth understanding about the importance and types of IPR. This course will also provide the clarity on the legal and economic aspects of the IP system.
CHE-SE-4014	ANALYTICAL CLINICAL BIOCHEMISTRY	Students will be able to identify various molecules relevant to a particular pathological condition and their estimation protocols.
CHE-SE-4024	GREEN METHODS IN CHEMISTRY	Students shall be able to describe and evaluate chemical products and processes from environmental perspective, define and propose sustainable solutions and critically assess the methods for waste reduction and recycling.
CHE-SE-4034	PHARMACEUTICAL CHEMISTRY	Students will be able to appreciate the drug development process, identify various small molecules used for treatments different ailments and other physiological processes.

CHE-SE-4044	CHEMISTRY OF COSMETICS & PERFUMES	Students will learn about the preparation and chemistry involved with the production different cosmetic. This may encourage students to take up entry level jobs at cosmetics industry or venture into commercial production of cosmetics as an entrepreneur. A general study including preparation and uses of the following: Hair dye, hair spray, shampoo, suntan lotions, face powder, lipsticks, talcum powder, nail enamel, creams (cold, vanishing and shaving creams), antiperspirants and artificial flavours. Essential oils and their importance in cosmetic industries with reference to Eugenol, Geraniol, sandalwood oil, eucalyptus, rose oil, 2-phenyl ethyl alcohol, Jasmone, Civetone, Muscone.
CHE-SE-4054	PESTICIDE CHEMISTRY	Students will be able to explain or describe and critically examine different types of pesticides, their activity/toxicity and their applications and the need for the search of an alternative based on natural products.
CHE-SE-4064	FUEL CHEMISTRY	At the end of this course students will learn about the classes of renewable and non-renewable energy sources. Students will learn about the composition of coal and crude petroleum, their classification, isolation of coal and petroleum products and their usage in various industries. They will also learn to determine industrially significant physical parameters for fuels and lubricants.
MAT-HC-1016	Calculus (including practical)	This course will enable the students to: i) Learn first and second derivative tests for relative extremum and apply the knowledge in problems in business, economics and life sciences. ii) Sketch curves in a plane using its mathematical properties in different coordinate systems. iii) Compute area of surfaces of revolution and the volume of solids by integrating over cross-sectional areas. iv) Understand the calculus of vector functions and its use to develop the basic principles of planetary motion.

MAT-HC-1026	Algebra	This course will enable the students to: i) Employ De Moivre's theorem in a number of applications to solve numerical problems. ii) Learn about equivalent classes and cardinality of a set. iii) Use modular arithmetic and basic properties of congruences. iv) Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix. v) Learn about the solution sets of linear systems using matrix method and Cramer's rule
MAT-HG-1016	MAT-RC-1016:Calculus	The students who take this course will be able to: i) Understand continuity and differentiability in terms of limits. ii) Describe asymptotic behavior in terms of limits involving infinity. iii) Use derivatives to explore the behavior of a given function, locating and classifying its extrema, and graphing the function. iv) Understand the importance of mean value theorems.
MAT-HG-1026	Analytic Geometry	This course will enable the students to: i) Transform coordinate systems, conic sections ii) Learn polar equation of a conic, tangent, normal and related properties iii) Have a rigorous understanding of the concept of three dimensional coordinate systems iv) Understand geometrical properties of dot product, cross product of vectors
MAT-HC-2016	Real Analysis	This course will enable the students to: i) Understand many properties of the real line R, including completeness and Archimedean properties. ii) Learn to define sequences in terms of functions from N to a subset of R. iii) Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence. iv) Apply the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.
MAT-HC-2026	Differential Equations(including practical)	The course will enable the students to: i) Learn basics of differential equations and mathematical modeling. ii) Formulate differential equations for various mathematical models. iii) Solve first order non-linear differential equations and linear differential equations of higher order using various techniques. iv) Apply these techniques to solve and analyze various mathematical models.

MAT-HG-2016/MAT-RC-2016	Algebra	This course will enable the students to: i) Learn how to solve the cubic and biquadratic equations, also learn about symmetric functions of the roots for cubic and biquadratic ii) Employ De Moivre's theorem in a number of applications to solve numerical problems. iii) Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix. Finding inverse of a matrix with the help of Cayley-Hamilton theorem iv) Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutation groups, ring etc. v) Learn about the concept of linear independence of vectors over a field, and the dimension of a vector space
MAT-HG-2026	Discrete Mathematics	After the course, the student will be able to: i) Understand the notion of ordered sets and maps between ordered sets. ii) Learn about lattices, modular and distributive lattices, sublattices and homomorphisms between lattices. iii) Become familiar with Boolean algebra, Boolean homomorphism, Karnaugh diagrams, switching circuits and their applications.
MAT-HC-3016	Theory of Real Functions	This course will enable the students to: i) Have a rigorous understanding of the concept of limit of a function. ii) Learn about continuity and uniform continuity of functions defined on intervals. iii) Understand geometrical properties of continuous functions on closed and bounded intervals. iv) Learn extensively about the concept of differentiability using limits, leading to a better understanding for applications. v) Know about applications of mean value theorems and Taylor's theorem
MAT-HC-3026	Group Theory - I	The course will enable the students to: i) Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutation groups, etc. ii) Link the fundamental concepts of groups and symmetrical figures. iii) Analyze the subgroups of cyclic groups and classify subgroups of cyclic groups. iv) Explain the significance of the notion of cosets, normal subgroups and factor groups. v) Learn about Lagrange's theorem and Fermat's Little theorem. vi) Know about group homomorphisms and group isomorphisms.

MAT-HC-3036	Analytical Geometry	This course will enable the students to: i) Learn conic sections and transform co-ordinate systems ii) Learn polar equation of a conic, tangent, normal and properties iii) Have a rigorous understanding of the concept of three dimensional coordinates systems
MAT-SE-3014	Computer Algebra Systems and Related Software	This course will enable the students to: i) Use of softwares; Mathematica/MATLAB/Maxima/Maple etc. as a calculator, for plotting functions and animations ii) Use of CAS for various applications of matrices such as solving system of equations and finding eigenvalues and eigenvectors. iii) Understand the use of the statistical software R as calculator and learn to read and get data into R. iv) Learn the use of R in summary calculation, pictorial representation of data and exploring relationship between data. v) Analyze, test, and interpret technical arguments on the basis of geometry.
MAT-SE-3024	Combinatorics and Graph Theory	This course will enable the students to: i) Learn about the counting principles, permutations and combinations, Pigeonhole principle ii) Understand the basics of graph theory and learn about social networks, Eulerian and Hamiltonian graphs, diagram tracing puzzles and Knight's tour problem.
MAT-HG-3016/MAT-RC-3016	Differential Equations	The course will enable the students to: i) Learn basics of differential equations and mathematical modelling. ii) Solve first order non-linear differential equations and linear differential equations of higher order using various techniques.
MAT-HG-3026	Linear Programming	This course will enable the students to: i) Learn about the graphical solution of linear programming problem with two variables. ii) Learn about the relation between basic feasible solutions and extreme points. iii) Understand the theory of the simplex method used to solve linear programming problems. iv) Learn about two-phase and big-M methods to deal with problems involving artificial variables. v) Learn about the relationships between the primal and dual problems. vi) Solve transportation and assignment problems. vii) Apply linear programming method to solve two-person zero-sum game problems.

MAT-HC-4016	Multivariate Calculus	This course will enable the students to: i) Learn the conceptual variations when advancing in calculus from one variable to multivariable discussion. ii) Understand the maximization and minimization of multivariable functions subject to the given constraints iii) Learn about inter-relationship amongst the line integral, double and triple integral formulations. iv) Familiarize with Green's, Stokes' and Gauss divergence theorems
MAT-HC-4026	Numerical Methods (including practical)	The course will enable the students to: i) Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. ii) Know about methods to solve system of linear equations, such as False position method, Fixed point iteration method, Newton's method, Secant method and LU decomposition. iii) Interpolation techniques to compute the values for a tabulated function at points not in the table. iv) Applications of numerical differentiation and integration to convert differential equations into difference equations for numerical solutions.
MAT-HC-4036	Ring Theory	On completion of this course, the student will be able to: i) Appreciate the significance of unique factorization in rings and integral domains. ii) Learn about the fundamental concept of rings, integral domains and fields. iii) Know about ring homomorphism and isomorphism theorems of rings. iv) Learn about the polynomial rings over commutative rings, integral domains, Euclidean domains, and UFD
MAT-SE-4014	R Programming	This course will enable the students to: i) Become familiar with R syntax and to use R as a calculator. ii) Understand the concepts of objects, vectors and data types. iii) Know about summary commands and summary table in R. iv) Visualize distribution of data in R and learn about normality test. v) Plot various graphs and charts using R.
MAT-SE-4024	LaTeX and HTML (practical)	After studying this course the student will be able to: i) Create and typeset a LaTeX document. ii) Typeset a mathematical document using LaTex. iii) Learn about pictures and graphics in LaTex. iv) Create beamer presentations. v) Create web page using HTML.

MAT-HG-4016/ MAT-RC-4016	Real Analysis	This course will enable the students to: i) Understand many properties of the real line R, including completeness and Archimedean properties. ii) Learn to define sequences in terms of functions from R to a subset of R. iii) Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence. iv) Apply the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.
MAT-HG-4026	Numerical Analysis	The course will enable the students to: i) Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. ii) Know about iterative and non-iterative methods to solve system of linear equations iii) Know interpolation techniques to compute the values for a tabulated function at points not in the table. iv) Integrate a definite integral that cannot be done analytically v) Find numerical differentiation of functional values vi) Solve differential equations that cannot be solved by analytical methods
MAT-HC-5016	Riemann Integration and Metric spaces	The course will enable the students to: i) Learn about some of the classes and properties of Riemann integrable functions, and the applications of the Fundamental theorems of integration. ii) Know about improper integrals including, beta and gamma functions. iii) Learn various natural and abstract formulations of distance on the sets of usual or unusual entities. Become aware one such formulations leading to metric spaces. iv) Analyse how a theory advances from a particular frame to a general frame. v) Appreciate the mathematical understanding of various geometrical concepts, viz. Balls or connected sets etc. in an abstract setting. vi) Know about Banach fixed point theorem, whose far-reaching consequences have resulted into an independent branch of study in analysis, known as fixed point theory. vii) Learn about the two important topological properties, namely connectedness and compactness of metric spaces.

MAT-HC-5026	Linear Algebra	The course will enable the students to: i) Learn about the concept of linear independence of vectors over a field, and the dimension of a vector space. ii) Basic concepts of linear transformations, dimension theorem, matrix representation of a linear transformation, and the change of coordinate matrix. iii) Compute the characteristic polynomial, eigenvalues, eigenvectors, and eigenspaces, as well as the geometric and the algebraic multiplicities of an eigenvalue and apply the basic diagonalization result. iv) Compute inner products and determine orthogonality on vector spaces, including Gram–Schmidt orthogonalization to obtain orthonormal basis. v) Find the adjoint, normal, unitary and orthogonal operators.
MAT-HE-5016	Number Theory	This course will enable the students to: i) Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc. ii) Know about number theoretic functions and modular arithmetic. iii) Solve linear, quadratic and system of linear congruence equations.
MAT-HE-5026	Mechanics	The course will enable the students to: i) Know about the concepts in statics such as moments, couples, equilibrium in both two and three dimensions. ii) Understand the theory behind friction and center of gravity. iii) Know about conservation of mechanical energy and work-energy equations. iv) Learn about translational and rotational motion of rigid bodies.
MAT-HE-5036	Probability and Statistics	This course will enable the students to: i) Learn about probability density and moment generating functions. ii) Know about various univariate distributions such as Bernoulli, Binomial, Poisson, gamma and exponential distributions. iii) Learn about distributions to study the joint behavior of two random variables. iv) Measure the scale of association between two variables, and to establish a formulation helping to predict one variable in terms of the other, i.e., correlation and linear regression. v) Understand central limit theorem, which helps to understand the remarkable fact that: the empirical frequencies of so many natural populations, exhibit a bell-shaped curve, i.e., a normal distribution

MAT-HE-5046	Linear Programming	This course will enable the students to: i) Learn about the graphical solution of linear programming problem with two variables. ii) Learn about the relation between basic feasible solutions and extreme points. iii) Understand the theory of the simplex method used to solve linear programming problems. iv) Learn about two-phase and big-M methods to deal with problems involving artificial variables. v) Learn about the relationships between the primal and dual problems. vi) Solve transportation and assignment problems. vii) Apply linear programming method to solve two-person zero-sum game problems.
MAT-HE-5056	Spherical Trigonometry and Astronomy	This course will enable the students to: i) Learn about the properties of spherical and polar triangles ii) know about fundamental formulae of spherical triangles iii) learn about the celestial sphere, circumpolar star, rate of change of zenith distance and azimuth iv) learn about Keplar's law of planetary motion, Cassini's hypothesis, differential equation for fraction
MAT-HE-5066	Programming in C (including practical)	After completion of this paper, student will be able to: i) Understand and apply the programming concepts of C which is important to mathematical investigation and problem solving. ii) Learn about structured data-types in C and learn about applications in factorization of an integer and understanding Cartesian geometry and Pythagorean triples. iii) Use of containers and templates in various applications in algebra. iv) Use mathematical libraries for computational objectives. v) Represent the outputs of programs visually in terms of well formatted text and plots.
MAT-HC-6016	Complex Analysis (including practical)	Completion of the course will enable the students to: i) Learn the significance of differentiability of complex functions leading to the understanding of Cauchy–Riemann equations. ii) Learn some elementary functions and can evaluate the contour integrals. iii) Understand the role of Cauchy–Goursat theorem and the Cauchy integral formula. iv) Expand some simple functions as their Taylor and Laurent series, classify the nature of singularities, find residues and apply Cauchy Residue theorem to evaluate integrals.

MAT-HC-6026	Partial Differential Equations (including practical)	The course will enable the students to: i) Formulate, classify and transform first order PDEs into canonical form. ii) Learn about method of characteristics and separation of variables to solve first order PDE's. iii) Classify and solve second order linear PDEs. iv) Learn about Cauchy problem for second order PDE and homogeneous as well as nonhomogeneous wave equations. v) Apply the method of separation of variables for solving second order PDEs.
MAT-HE-6016	Boolean Algebra and Automata Theory	The course will enable the students to: i) Learn about the order isomorphism, Hasse diagrams, building new ordered set. ii) Learn about the algebraic structure lattices, properties of modular and distributive lattices. iii) Get ideas about the Boolean algebra, Switching circuits and applications of switching circuits. iv) Appreciate the theory of automata and its applications
MAT-HE-6026	Bio-Mathematics	Apropos conclusion of the course will empower the student to: i) Learn the development, analysis and interpretation of bio mathematical models such as population growth, cell division, and predator-prey models. ii) Learn about the mathematics behind heartbeat model and nerve impulse transmission model. iii) Appreciate the theory of bifurcation and chaos. iv) Learn to apply the basic concepts of probability to molecular evolution and genetics.
MAT-HE-6036	Mathematical Modelling (including practical)	The course will enable the students to: i) Know about power series solution of a differential equation and learn about Legendre's and Bessel's equations. ii) Use of Laplace transform and inverse transform for solving initial value problems. iii) Learn about various models such as Monte Carlo simulation models, queuing models, and linear programming models.
MAT-HE-6046	Hydromechanics	The course will enable the students to: i) Know about Pressure equation, rotating fluids. ii) Learn about Fluid pressure on plane surfaces, resultant pressure on curved surfaces, Gas law, mixture of gases iii) Learn about the Eulerian and Lagrangian method. iv) Learn about equation of continuity, examples, acceleration of a fluid at a point

MAT-HE-6056	Rigid Dynamics	The course will enable the students to: i) Know how to find the moments and products of inertia. ii) Learn about the motion of the centre of inertia iii) Learn about the D'Alembert's principle and Lagrange's equations iv) Learn about motion of a body in two dimension.
MAT-HE-6066	Group Theory II	The course shall enable students to: i) Learn about automorphisms for constructing new groups from the given group. ii) Learn about the fact that external direct product applies to data security and electric circuits. iii) Understand fundamental theorem of finite abelian groups. iv) Be familiar with group actions and conjugacy in Sn. v) Understand Sylow theorems and their applications in checking non-simplicity.
MAT-HE-6076	Mathematical Finance	On completion of this course, the student will be able to: i) Know the basics of financial markets and derivatives including options and futures. ii) Learn about pricing and hedging of options, as well as interest rate swaps. iii) Learn about no-arbitrage pricing concept and types of options. iv) Learn stochastic analysis (Ito formula, Ito integration) and the Black–Scholes model. v) Understand the concepts of trading strategies and valuation of currency swaps.
PHY-HC-1016	Mathematical Physics I	Successful students should be able to understand vector and its applications in various fields, differential equations and its applications, different coordinate systems, concept of probability and error.
PHY-HC-1026	Mechanics	On successful completion of the course students should be able understand Inertial and non inertial reference frames, Newtonian motion, Galilean transformations, projectile motion, work and energy, Elastic and inelastic collisions, motion under central force, simple harmonic oscillations, special theory of relativity.

PHY-HG-1016/PHY-RC-1016	Mechanics	Upon completion of this course, students are expected to understand the role of vectors and coordinate systems in Physics, solve Ordinary Differential Equations, laws of motion and their application to various dynamical situations, Inertial reference frames their transformations, concept of conservation of energy, momentum, angular momentum and apply them to basic problems, phenomenon of simple harmonic motion, motion under central force, concept of time dilation, Length contraction using special teory of relativity. In the laboratory course, after acquiring knowledge of how to handle measuring instruments (like screw gauge, Vernier calipers, travelling microscope) student shall embark on verifying various principles and associated measurable parameters.
PHY-HC-2016	Electricity & Magnetism	After successful completion of this course, students will be able to Understand electric and magnetic fields in matter, Dilectric properties of matter magnetic properties of matter, electromagnetic induction, applications of Kirchhofff's law in different circuits, applications of network theorem in circuits.
PHY-HC-2026	Waves & Optics	After successful completion of this course, students will be able to Understand superposition of harmonic oscillations, different types of wave motions, superposition of harmonic waves, interference and interferometer, diffraction, holography.
PHY-HG-2016/PHY-RC-2016	Electricity & Magnetism	Upon completion of this course, students are expected to apply Gauss's law of electrostatics to solve a variety of problems, calculate the magnetic forces that act on moving charges and the magnetic fields due to currents, have brief idea of magnetic materials, understand the concepts of induction, and apply them to solve variety of problems. In the Lab course, students will be able to measure resistance (high and low), Voltage, Current, self and mutual inductance, capacitor, strength of magnetic field and its variation, study different circuits RC, LCR etc.
PHY-HC-3016	Mathematical Physics II	After successful completion of the course, students will be able to solve differential equation using power series solution method, solve differential equation using separation of variables method, special integrals, different properties of matrix, Fourier series.

PHY-HC-3026	Thermal Physics	Upon successful completion, students will have the knowledge and skills to identify and describe the statistical nature of concepts and laws in thermodynamics, in particular: entropy, temperature, Thermodynamics potentials, Free energies, Maxwell's relations in thermodynamics, behaviour of real gases.
PHY-HC-3036	Digital Systems & Applications	After successful completion of the course student will be able to understand the working principle of CRO, develop a digital logic and apply it to solve real life problems, Analyze, design and implement combinational logic circuits, Classify different semiconductor memories, Analyze, design and implement sequential logic circuits, Analyze digital system design using PLD, Simulate and implement combinational and sequential circuits
PHY-HG-3016/PHY-RC-3016	Thermal Physics & Statistical Mechanics	Upon completion of this course, students are expected learn the basic concepts of thermodynamics, the first and the second law of thermodynamics, the concept of entropy and the associated theorems, the thermodynamic potentials and their physical interpretations, Maxwell's thermodynamic relations, fundamentals of the kinetic theory of gases, Maxwell-Boltzman distribution law, equipartition of energies, mean free path of molecular collisions, viscosity, thermal conductivity, diffusion and Brownian motion, black body radiations, Stefan- Boltzmann's law, Rayleigh-Jean's law and Planck's law and their significances, quantum statistical distributions, viz., the BoseEinstein statistics and the Fermi-Dirac statistics. In the laboratory course, the students will be able to Measure of Planck's constant using black body radiation, determine Stefan's Constant, coefficient of thermal conductivity of a bad conductor and a good conductor, determine the temperature coefficient of resistance, study variation of thermo emf across two junctions of a thermocouple with temperature etc.
PHY-SE-3014	Physics Workshop Skills	The aim of this course is to enable the students to familiar and experience with various mechanical and electrical tools through hands-on mode

PHY-SE-3024	COMPUTATIONAL PHYSICS SKILL	The aim of this course is not just to teach computer programming and numerical analysis but to emphasize its role in solving problems in Physics. • Highlights the use of computational methods to solve physical problems • Use of computer language as a tool in solving physics problems (applications) • Course will consist of hands on training on the Problem solving on Computers.
PHY-SE-3034	Computer Assembling and Networking	After successfully completing the course students will be able to Identify Computer Hardware Components, Network Components and Peripherals, assemble and dissemble a computer, Identify the different types of network topologies and protocols. Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer, Identify the different types of network devices and their functions within a network, Understand and building the skills of subnetting and routing mechanisms., Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and implementation.
PHY-SE-3044	Digital Photography & Editing	On successful completion of the course students will be able to indentify cameras according to formats and view finder systems, identify types of lenses and state what type of lenses to be used for different purposes, apply settings of shutter speed, control depth of field via aperture settings, apply suitable focal length, Use the light metering mechanism of the camera to take photographs.
PHY-SE-3054	VIDEO EDITING FOR SOCIAL MEDIA	On successful completion of the course students will be able to learn to Edit impactful video content which appeals to target audience, Add or Edit Music, Soundtrack or Audio to your videos, Learn to customize your videos by using Text (fonts), Learn to use transitions and effects to create impactful videos.
PHY-SE-3064	WEATHER FORECASTING	The aim of this course is not just to impart theoretical knowledge to the students but to enable them to develop an awareness and understanding regarding the causes and effects of different weather phenomenon and basic forecasting techniques

PHY-SE-3074	APPLIED OPTICS	Theory includes only qualitative explanation. Minimum five experiments should be performed covering minimum three sections.
PHY-SE-3084	TECHNICAL DRAWING	After successfully completing the course students will be able to draw free hand sketches of various kinds of objects, apply different dimensioning methods on drawing of objects, different types of scales and their utilization in reading and reproducing drawings of objects and maps, Draw 2 - dimensional view of different objects viewed from different angles, Generate isometric (3D) drawing from different 2D (orthographic) views/sketches, use basic commands of Auto CAD.
PHY-SE-3094	PAGEMAKER	On successful completion of the course students will be able to Create Documents and Templates, add text into documents using various methods, and apply different formatting styles to characters and paragraphs, Import graphics, create objects using various tools, add effects to objects, Create a book and export it into PDF, Multipage Layout Design.
PHY-HC-4016	Mathematical Physics III	On successful completion of the course students will able to solve complex integrals using residue theorem, apply Fourier and Laplace transforms in solving differential equations, understand properties of Tensor like Transformation of coordinates, contravariant and co-variant tensors, indices rules for combining tensors.
PHY-HC-4026	Elements of Modern Physics	On completion of the course students will be able to understand modern development in Physics, Starting from Planck's law, it development of the idea of probability interpretation and the formulation of Schrodinger equation. Students will also get preliminary idea of structure of nucleus, radioactivity Fission and Fusion and Laser

PHY-HC-4036	Analog Systems & Applications	On successful completion of the course students will be able to understand about the physics of semiconductor p-n junction and devices such as rectifier diodes, zener diode, photodiode etc. and bipolar junction transistors, transistor biasing and stabilization circuits, the concept of feedback in amplifiers and the oscillator circuits, students will also have an understanding of operational amplifiers and their applications.
PHY-HG-4016	Waves & Optics	Upon completion of this course, students are expected to understand Simple harmonic oscillation and superposition principle, importance of classical wave equation in transverse and longitudinal waves and solving a range of physical systems on its basis, concept of normal modes in transverse and longitudinal waves: their frequencies and configurations, interference as superposition of waves from coherent sources derived from same parent source, Demonstrate understanding of Interference and diffraction experiments, Polarization. In the laboratory course, student will gain hands-on experience of using various optical instruments and making finer measurements of wavelength of light using Newton Rings experiment, Fresnel Biprism etc. Resolving power of optical equipment, the motion of coupled oscillators, study of Lissajous figures and behaviour of transverse, longitudinal waves.
PHY-SE-4014	BASIC INSTRUMENTATION SKILLS	This course is to get exposure with various aspects of instruments and their usage through hands-on mode. Experiments listed below are to be done in continuation of the topics.
PHY-SE-4024	Research & Technical Writing	On successful completion of the course students will be able to identify and write different parts of technical reports, write article, thesis, and presentation in latex, create chart in Microsoft excel, use different format of chart based on need, plot data from different sources using Origin plot.

PHY-SE-4034	Domestic and Industrial Electrical Wiring	After successfully completion of the course students will be able to recognize various electrical devices and their symbols, Recognize various electrical devices placed on the panels/distribution boards and to design the panels, Read schematic and wiring diagrams of electrical devices, Read and interpret electrical installation plan, Practice and execute any type of wiring , Estimate and determine the cost of wiring installation
PHY-SE-4044	Photoshop	This course will give you skill to prepare creative effect to design stunning text style, design icons, business cards, illustrations and characters. You will learn to remove people or objects from photos, cut away a person from their background. In this course you will learn how to properly use Photoshop's tools, discover how to retouch and color correct photographic images. Course Outcome: On successful completion of the course students will be able to work with the tools in Adobe Photoshop CC, crop image in Adobe Photoshop CC, to resize an image for print and digital media in Adobe Photoshop CC, apply Photoshop filters in print and digital media, apply filters to sharpen the images, different types of brushes used for digital painting.
PHY-SE-4054	MOTION GRAPHICS FOR ADVERTISING & FILMS	On successful completion of the course students will be able to create Motion Graphic Design for Ads, Commercials, Promos & Film / Show Titles, use After Effects templates to create your own customized 2D or 3D Motion Graphics, Understand Working with Layers, create Shape morphing animation and build transitions, utilize After Effects' Motion Graphics Techniques.

PHY-SE-4064	Radiation Safety	Preferred minimum qualifications of the teacher/instructor: Assistant Professor of Physics with PhD in Nuclear Physics/ Radiation Physics (preferably with a RSO degree from BRIT/BARC). To ensure safety of the public, occupational workers and the environment, this course on the basic knowledge of radiation safety is introduced. The course is designed in such a way to acquaint the students with the sources of various natural and man-made radiation sources, risks involved in working in relatively high radiation zone, and safety measures to be taken to protect individual's health. The students will acquire a basic knowledge of types and sources of radiations, interactions of radiations with matter, risks involved and safety measures to be taken.
PHY-SE-4074	RENEWABLE ENERGY AND ENERGY HARVESTING	The aim of this course is not just to impart theoretical knowledge to the students but to provide them with exposure and hands-on learning wherever possible
PHY-SE-4084	Introduction to CorelDraw	On successful completion of the course students will be able to work with layers and symbols in CorelDRAW, Apply fills and outlines to illustrations in CorelDRAW, Use, edit, and create artistic and paragraph text in CorelDRAW, Create boundaries to objects and copy and clone the effect of one object to another in CorelDRAW, Import and export projects, Print objects/documents created on CorelDRAW.
PHY-SE-4094	GRAPHIC DESIGN FOR DIGITAL ADVERTISING	On successful completion of the course students will be able to Understand aesthetics & visual appeal in design, Using impactful visual content which appeals to target audience, Conceptualize, Visualize and Create Graphic Designs for:Digital Ads, Posters, Banners and Flyers, Social Media Ads & Banners, Websites and Blogs

PHY-HC-5016	Quantum Mechanics & Applications	On successful completion of the course students will be able to understand the principles in quantum mechanics, such as the Schrödinger equation, the wave function, the uncertainty principle, stationary and non-stationary states, time evolution of solutions, as well as the relation between quantum mechanics and linear algebra. Students will be able to solve the Schrödinger equation for hydrogen atom. Students will have the concepts of angular momentum and spin, as well as the rules for quantization and addition of these, spin-orbit coupling and Zeeman Effect.
PHY-HC-5026	Solid State Physics	On successful completion of the course students should be able to explain the main features of crystal lattices and phonons, understand the elementary lattice dynamics and its influence on the properties of materials, describe the main features of the physics of electrons in solids; explain the dielectric ferroelectric and magnetic properties of solids and understand the basic concept in superconductivity.
PHY-HE-5016	Experimental Techniques	Upon completion of this course, students will be able to describe the errors in measurement and statistical analysis of data required while performing an experiment. Also, students will learn the working principle, efficiency and applications of transducers & industrial instruments like digital multimeter, RTD, Thermistor, Thermocouples and Semiconductor type temperature sensors.
PHY-HE-5026	Embedded System: Introduction to microcontroller	Upon completion of this course, students will be able to understand microprocessor and microcontroller 8051. Students will also learn about the 8051 I/O port programming, various addressing modes, Timer and counter programming, Serial port programming with and without interrupt and interfacing 8051 microcontroller to peripherals.
PHY-HE-5036	Advanced Mathematical Physics I	Upon completion of this course, students will be able to solve problems in Physics related to Linear Vector space, Matrix algebra, Tensor.

PHY-HE-5046	Physics of Devices and Instruments	Upon completion of this course, students will be able to gain knowledge on advanced electronics devices such as UJT, JFET, MOSFET, CMOS etc., detailed process of IC fabrication, Digital Data serial and parallel Communication Standards along with the understanding of communication systems.
PHY-HE-5056	Nuclear and Particle Physics	Upon completion of this course, students will have the understanding of the sub atomic particles and their properties. They will gain knowledge about the different nuclear techniques and their applications in different branches of Physics and societal application. The course will develop problem based skills and the acquire knowledge can be applied in the areas of nuclear, medical, archeology, geology and other interdisciplinary fields of Physics and Chemistry
PHY-HC-6016	Electromagnetic Theory	On successful completion of the course students will acquire the concepts of Maxwell's equations, propagation of electromagnetic (EM) waves in different homogeneous-isotropic as well as anisotropic unbounded and bounded media, production and detection of different types of polarized EM waves, general information as waveguides and fibre optics
PHY-HC-6026	Statistical Mechanics	On successful completion of the course students will be learn the techniques of Statistical Mechanics to apply in various fields including Astrophysics, Semiconductors, Plasma Physics, Bio-Physics, Chemistry and in many other directions.
PHY-HE-6016	Communication Electronics	Upon completion of this course, students will have the concepts of electronics in communication, details of communication techniques based on Analog Modulation, Analog and digital Pulse Modulation including PAM, PWM, PPM, ASK, PSK, FSK, overview of communication and Navigation systems such as GPS and mobile telephony system.

PHY-HE-6026	Digital Signal Processing	Upon completion of this course, students will be able This paper describes the discrete-time signals and systems, Fourier Transform Representation of Aperiodic Discrete-Time Signals. This paper also highlights the concept of filters and realization of Digital Filters. At the end of the syllabus, students will develop the understanding of Discrete and fast Fourier Transform.
PHY-HE-6036	Advanced Mathematical Physics II	Upon completion of this course, students will be able to apply the concepts of Calculus of Variations, Group Theory and Probability Theory to solve numerical problems in Physics.
PHY-HE-6046	Astronomy and Astrophysics	Upon completion of this course, students will be able to understanding the origin and evolution of the Universe. The course will give a comprehensive introduction on the measurement of basic astronomical parameters such as astronomical scales, luminosity and astronomical quantities. It will give an overview on key developments in observational astrophysics. Students will have the idea of the instruments implemented for astronomical observation, the formation of planetary system and its evolution with time, the physical properties of Sun and the components of the solar system; and stellar and interstellar components of our Milky Way galaxy. Students will have the understanding of the origin and evolution of galaxies, presence of dark matter and large scale structures of the Universe.
PHY-HE-6056	CLASSICAL DYNAMICS	Upon completion of this course, students will have the overview of Newton's Laws of Motion, Special Theory of Relativity by 4-vectoer approach and fluids. Students will also have the understanding of the Lagrangian and Hamiltonian of a system.. By the end of this course, students will be able to solve the seen or unseen problems/numericals in classical mechanics.