

**DEPARTMENT OF ECONOMICS**  
**THE COCHIN COLLEGE**

**Programme Outcome- B.A. Economics**

- Critical thinking- Ability to analyse and integrate knowledge, capability to evaluate the validity of arguments and conclusion.
- Effective communication – Proficiency in speaking, reading, writing and listening.
- Social interaction –Helps to create social awareness and connect to the problems of the society.
- Effective citizenship- promote active citizenship and community engagement.

**Programme Specific Outcome**

- It promotes an active learning approach to economics in which students think about real problems in an analytically rigorous way.
- In addition, the programme aims to teach students how to put the acquired skills to use in their own research.
- Students will find a cumulative and hierarchical body of knowledge laid out in a structured series of courses. This creates a foundation which the student can build on and apply to many areas.

**Course Outcome**

- **CO1: Methodology of Social Sciences with Special Reference to Economics (EC1B01U)** The course intends to familiarize the students with the broad contours of Social Sciences and their methodology, especially of Economics.
- **CO2 –Development and Environmental Economics (EC2B02U)-** To enable the students to understand the theories and strategies of growth and development, to impart knowledge about the issues relating to sustainable development, environmental protection and pollution control measures.
- **CO 3 – Principles of Micro Economics (EC3B03U) -** Provides basic understanding of micro economic concepts, behavior of economic agents – consumer, producer, factor owner – price fluctuations in the market. The modules included in this course deal with the concepts of consumer behaviour, production and costs.
- **CO 4 – Modern Banking (EC3B04U) -**Acquaint the students with the working of banks and to familiarize them with the basic principles and concepts which are often used in banking literature.

- **Core 5 – Micro Economic Analysis (EC4B05U)** - Provides basic understanding of micro economic concepts, behavior of economic agents – consumer, producer, factor owner – price fluctuations in the market. The modules included in this course deal with the concepts of markets, factor pricing and welfare economics
- **Core 6 – Public Economics (EC4B06U)**- Gives an understanding of the role of state in fostering the economic activities via budget and fiscal policies. This course enables the students to understand the various issues between Central and State Governments
- **Core 7 – Quantitative Techniques for Economic Analysis(EC5B07U)** -Equips the students with primary statistical and mathematical tools for analysing economic problems.
- **Core 8 – Principles of Macro Economics (EC5B08U)** -This course is designed to make the students aware of the theoretical aspects of Macro Economics.
- **Core 9 – Indian Economy (EC5B09U)** - Equips the students with the theoretical, empirical and policy issues relating to the society, polity and economy of India. The course, in particular, has been prepared in the background of the globalization process and its diverse ramifications on the knowledge economy.
- **Core 10 – Economics of Financial Markets (EC5B10U)** -Acquaints the students with the changing role of financial sector in the economy. The stake holders are to familiarize with the basic concepts, the financial institutions and markets.
- **Core 11 – Quantitative Economics (EC6B11U)** - Equips the students with primary statistical and mathematical tools for analysing economic problems.
- **Core 12 – Macro Economic Analysis (EC6B12U)** - This course equips the students to understand systemic facts and the latest theoretical developments in Macro Economics.
- **Core 13 –Development Issues of the Indian Economy (EC6B13U)** -The objective of the course is to equip the students with the theoretical, empirical and policy issues relating to the society, polity and economy of India. The course, in particular, has been prepared on the background of the globalization process and its diverse ramifications on the knowledge economy.
- **Core 15 – International Economics (EC6B15U)** -The objective of this course is to arrive at an understanding of theories of international trade and to examine the impact of the trade policies on the world economy.

### **Project (EC6B16U)**

Equips the students to study of real issue or a problem intended to resolve the issue with application of concepts, principles, theories and processes. It should entail scientific collection, analysis and interpretation of data to valid conclusions.

**Open Course- Fundamentals of Economics (EC5D02U)** - This is designed to make the undergraduate students of other disciplines aware of the basic concepts in Economics.

## **AIMS AND OBJECTIVES OF THE BSc PHYSICS PROGRAMME**

### **Aims:**

The Board of Studies in Physics (UG) recognizes that curriculum, course content and assessment of scholastic achievement play complementary roles in shaping education. The committee is of the view that assessment should support and encourage the broad instructional goals such as basic knowledge of the discipline of Physics including phenomenology, theories and techniques, concepts and general principles. This should also support the ability to ask physical questions and to obtain solutions to physical questions by use of qualitative and quantitative reasoning and by experimental investigation. The important student attributes including appreciation of the physical world and the discipline of Physics, curiosity, creativity and reasoned scepticism and understanding links of Physics to other disciplines and to societal issues should give encouragement. With this in mind, we aim to provide a firm foundation in every aspect of Physics and to explain a broad spectrum of modern trends in physics and to develop experimental, computational and mathematics skills of students.

The programme also aims to develop the following abilities:

1. Read, understand and interpret physical information – verbal, mathematical and graphical.
2. Impart skills required to gather information from resources and use them.
3. To give need based education in physics of the highest quality at the undergraduate level.
4. Offer courses to the choice of the students.
5. Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties.
6. Provide an intellectually stimulating environment to develop skills and enthusiasms of students to the best of their potential.
7. Use Information Communication Technology to gather knowledge at will.
8. Attract outstanding students from all backgrounds.

### **Objectives:**

The syllabi are framed in such a way that it bridges the gap between the plus two and post graduate levels of Physics by providing a more complete and logical framework in almost all areas of basic Physics. By the end of the first year (2nd semester), the students should have attained a common level in basic mechanics, a secure foundation in mathematics, electronics, Languages and other relevant subjects to complement the core for their future courses and developed their experimental and data analysis skills through experiments at laboratories. By the end of the second year (4th semester), the students should have been introduced to powerful tools for tackling a wide range of topics in Optics, Laser, Fiber optics, Semiconductor devices and circuits. Along with Languages, they should have been

familiar with additional relevant techniques in mathematics, Electronics and developed their experimental and data analysis skills through a wide range of experiments through practical at laboratories. By the end of the third year (6th semester)r, the students should have developed their understanding of core Physics by covering a range of topics in almost all areas of physics including Classical and Quantum Mechanics, Electricity and Electrodynamics, Relativity and spectroscopy, Thermal and Statistical Physics, Nuclear and Particle physics, Solid State Physics, Digital Electronics etc. along with one choice based courses, Open course and had experience of independent work such as projects; seminars etc. and thereby developing their experimental skills through a series of experiments which also illustrate major themes of the lecture courses.

### **MSc Physics- Aims and objectives of the course**

MSc. Physics forms the final formal training of Physics and hence the program aims at providing an in depth knowledge of Physics to the student. After the successful completion of the program, a student should be capable of pursuing research in theoretical/ experimental physics or related areas. The student is expected to acquire a thorough understanding of the fundamentals of Physics so as to select an academic career in secondary or tertiary level. The program also aims at enhancing the employability of the student. Rigorous training requires phased teaching. With this intention credit and semester system is followed in this program. An MSc student should be capable of doing research at least in the preliminary way. To accomplish this, research oriented project is made part of this curriculum

**OBJECTIVES OF B COM DEGREE (C B C S S ) –MODEL I FINANCE & TAXATION**

<b>Course</b>	<b>Name</b>	<b>Outcome</b>
CO1	Business Statistics	Acquire basic knowledge of statistical techniques and application of those techniques for quantification of data in business.
CO2	Modern Banking	Obtain knowledge in banking and changing scenario of Indian banking system with regard to innovation and reforms.
CO3	Business Regulatory Framework	Provide framework of Indian Business Laws and equip the students to apply provisions of business laws in business activities.
CO4	Perspectives and Methodology of Business Studies	Impart relevance of business in the society, understanding entrepreneurship and to enhance the students to undertake business activities.
CO5	Quantitative Techniques for Business Research	Attain knowledge in research and application of simple statistical tools in business research.
CO6	Principles of Insurance	Knowledge in fundamental principles of insurance and practice followed by insurance business regarding insurance policies.
CO7	Corporate Regulations and Administration	An in-depth knowledge with respect to Companies Act 2013 for administration and management of Indian Companies.
CO8	Business Communication and Management Information	Provide awareness about the importance of communication in business, various methods of communication relevant to business situations and to build up communication skill among students.
CO9	Marketing Management	Acquiring knowledge in marketing concepts, modern

		methods and techniques of marketing and its applications in Industry.
C010	Financial Accounting	Knowledge in accounting principles and practices of various types of business excluding companies.
C011	E-Commerce and General Informatics	Familiarising the students with the mechanism of conducting business transactions through electronic media.
C012	Financial Management	Understanding the ideas and theories of finance and learning about the practical applications of financial management concepts.
C013	Capital market	To gain an idea about capital market and its operations in India.
C014	Corporate Accounting Entrepreneurship	A thorough knowledge about the accounting of companies. Create an awareness amongst students to carve for
CO15	Development and Project Management	individual freedom by taking initiative by starting small business enterprise as a viable alternative
CO 16	Value Added Tax – Concepts and Practices	Understanding the concept of VAT and providing an insight into the aspects and procedures of Kerala Value Added Tax Act and Rules as an aid for emerging entrepreneurs.
CO17	Cost accounting	To get idea about cost concepts and knowledge in cost accounting as a separate system of accounting.
CO18	Advertising and Sales promotion	Knowledge is imparted regarding strategy, concept and methods of advertising and sales promotion.
CO19	Special Accounting	To acquaint the students with advanced accounting principles and procedures.

CO20	Applied Cost Accounting	To acquire knowledge in different methods and techniques of costing and identification of those techniques those are applicable to different types of industries.
CO21	Income Tax Law & Practice	Getting familiarised with The Income Tax Act,1961 and
CO22	Practical Auditing	Familiarising principles and procedure of auditing and to enable the students to understand the duties and responsibilities of auditors for dealing with auditing work.
CO23	Accounting for managerial decisions	To equip the students to interpret financial statements and to have a thorough knowledge on management accounting techniques that are used for business decision making.
CO24	Consumer behaviour	Familiarising students with the behavior of consumers in market.
CO24	Income Tax Assessment and Procedure	Understanding determination of Total Income and tax payable and getting knowledge about filing of returns to also assessment procedure.
CO25	Capital Market & Investment management (Open Course)	Knowledge is imparted to get a base for functioning of capital market in India and enable them to take investment management decisions.

### ***Programme Specific Outcome***

PSO 1

#### ***Applications of Financial Management Concepts***

Enables the student to have a better understanding of intricacies of modern day finance world by imparting the knowledge of financial management concepts and theories and also auditing.

PSO 2

#### ***Understanding Relevant Value Added Tax Acts.***

Makes the student capable to handle all the tax related matters, right from the computation of VAT to filing of returns to be done by the dealers.



- PSO 3      ***Handling of Income Tax Matters***  
Competency in the matters relating to Income tax, its computation under various heads , tax slabs etc is achieved. The student becomes independent to handle the income tax related issues arising in case of his business or other sources of employment.
- PSO 4      ***Adept at Tax Management***  
Proficiency in matters of tax planning and tax management is imbibed in the students so as to make them capable of looking after their personal tax matters.

### ***Program Outcome***

***PO1:*** *The Programme enables the student to demonstrate their competence at applying the basic theoretical principles of marketing management in problem identification and solving, and reflect it on application in various industries. Entrepreneurship capabilities are developed through knowledge gathered from aspect of entrepreneurship development and project formulation. They become competent to make informed and ethical decisions based on thorough knowledge of commerce concepts. Also, an ability to effectively communicate both orally and verbally is developed. They develop an understanding of various commerce functions such as finance, accounting, financial analysis, project evaluation, and cost accounting. More important, the students becomes independent enough to handle income tax matters and adept at tax management and planning.*

## OBJECTIVES OF B COM DEGREE (C B C S S ) –MODEL II MARKETING

<b>Course</b>	<b>Name</b>	<b>Outcome</b>
CO1	Business Statistics	Acquire basic knowledge of statistical techniques and application of those techniques for quantification of data in business.
CO2	Modern Banking	Obtain knowledge in banking and changing scenario of Indian banking system with regard to innovation and reforms.
CO3	Business Regulatory Framework	Provide framework of Indian Business Laws and equip the students to apply provisions of business laws in business activities.
CO4	Perspectives and Methodology of Business Studies	Impart relevance of business in the society, understanding entrepreneurship and to enhance the students to undertake business activities.
CO5	Quantitative Techniques for Business Research	Attain knowledge in research and application of simple statistical tools in business research.
CO6	Principles of Insurance	Knowledge in fundamental principles of insurance and practice followed by insurance business regarding insurance policies.
CO7	Corporate Regulations and Administration	An in-depth knowledge with respect to companies act 2013 for administration and management of Indian Companies.
CO8	Business Communication and Management Information	Provide awareness about the importance of communication in business, various methods of communication relevant to business situations and to build up communication skill among students.

C09	Marketing Management	Acquiring knowledge in marketing concepts, modern methods and techniques of marketing and its applications in Industry.
C010	Financial Accounting	Knowledge in accounting principles and practices of various types of business excluding companies.
C011	E-Commerce and General Informatics	Familiarising the students with the mechanism of conducting business transactions through electronic media.
C012	Product management	Provide a base for concepts and strategies involved in product and brand management.
C013	Capital market	To gain an idea about capital market and its operations in India.
C014	Corporate Accounting	A thorough knowledge about the accounting of companies.
CO15	Entrepreneurship Development and Project Management	Create awareness among the students to carve for individual freedom for taking initiative by starting small business enterprise as a viable alternative to salaried employment.
CO 16	Service marketing	To develop insights into emerging trends in the service sector and tackle issues involved in the management of services.
CO17	Cost accounting	To get idea about cost concepts and knowledge in cost accounting as a separate system of accounting.
CO18	Advertising and Sales promotion	Knowledge is imparted regarding strategy, concept and methods of advertising and sales promotion.
CO19	Special Accounting	To acquaint the students with advanced accounting principles and procedures.
CO20	Applied Cost Accounting	To acquire knowledge in different methods and techniques of costing and identification of those techniques those are

applicable to different types of industries.

CO21	International Marketing	To acquaint the students with environmental, procedural, institutional and decisional aspects of international marketing.
CO22	Practical Auditing	Familiarising principles and procedure of auditing and to enable the students to understand the duties and responsibilities of auditors for dealing with auditing work.
CO23	Accounting for managerial decisions	To equip the students to interpret financial statements and to have a thorough knowledge on management accounting techniques that are used for business decision making.
CO24	Consumer behaviour	Familiarising students with the behavior of consumers in market.
CO24	Marketing Research	Creating awareness among the students regarding methods and techniques of marketing research.
CO25	Capital Market & Investment management (Open Course)	Knowledge is imparted to get a base for functioning of capital market in India and enable them to take investment management decisions.

### ***Programme Specific Outcome***

- PSO 1      ***Product and Brand Awareness***  
Makes a student capable of grasping the concept of brand equity and the effective strategies to be adopted while marketing a product.
- PSO 2      ***Service Marketing Oriented***  
The significance of service industry and its need in the modern day world is impressed on student so that they have a better understanding of what makes the service marketing tick.
- PSO 3      ***International Marketing capability:***  
Promote responsible local and global citizenship through their approach towards the holistic application of marketing management beyond national edges.
- PSO 4      ***Plan and execute research***  
Understands the relevance of adopting various research techniques in marketing of the product and innovative concepts of decrypting the minds of consumers. Competencies are developed for gathering, analysing, synthesising and interpreting relevant information correctly and reflecting on research undertaken on various marketing management issues.

### ***Program Outcome***

***PO1:*** The student develops an understanding of commerce, the areas where the skills and knowledge in the fields of financial and cost accounting to be applied. Also develops self-confidence and awareness of general commercial issues prevailing in the society. The programme enables a student to practice the applications of theory covering research, the nature of consumers, sales management, advertising, quality management, law and ethics in the marketing environment.

## **OBJECTIVES OF M COM DEGREE (C S S )**

### **CO1 : ADVANCED FINANCIAL ACCOUNTING-1**

The subject helps the student to know the methods of valuation of goodwill and share, the amalgamation and reconstruction procedures of companies and also to learn the proceedings of insolvency of an individual and international reporting standards.

### **CO 2: PRINCIPLES OF MANAGEMENT AND ORGANISATIONAL BEHAVIOUR**

It enables the students to understand the conceptual frame work of management and organizational behaviour and also to understand the managerial applicability of the concepts.

### **CO 3: FINANCIAL MANAGEMENT PRINCIPLES**

The student is introduced to the subject of financial management in order to acquaint the him with various methods and techniques of financial management.

### **CO 4: RESEARCH METHODOLOGY**

Subject enables the students to understand how to do research in the area of commerce and management.

### **CO 5: QUANTITATIVE TECHNIQUES**

• Statistical tools for quantitative analysis is made clear to the student. And the student understands the application of the statistical tools for research and business decision making.

### **CO 6: ADVANCED FINANCIAL ACCOUNTING**

This creates an understanding of the proceedings of the preparation of consolidated balance sheet. The idea of Green accounting, Double accounts, Farm accounts, voyage accounts, and liquidation proceedings of companies are clarified to the student.

### **CO 7: HUMAN RESOURCE MANAGEEMNT**

The students understands the human resource functions in an organization.

### **CO 8: FINANCIAL MANAGEMENT STRATEGIES**

The subject intends to acquaint students with the advanced concept of financial management and to develop financial strategies for the organization.

### **CO 9: STRATEGIC MANAGEMENT**

This helps the students to understand the frame work across strategic analysis, strategy formulation, and strategic implementation

**CO 10: OPERATIONS RESEARCH**

Enables the students to understand various techniques used in operation management decisions.

**CO 11 : MANAGEMENT ACCOUNTING**

· Accounting methods and techniques used for decision making are explained to the learners.

**CO 12: DIRECT TAXES- LAW AND PRACTICE**

To familiarise the students with the direct tax law of the country and to give advanced level of knowledge on direct tax laws and computation and assessment.

**CO 13 : INTERNATIONAL BUSINESS**

Clarifies the concept of different aspects of international business to the learners.

**CO 14 : CORPORATE GOVERNANCE**

The student learns to understand the importance of corporate governance

**CO 15: INTERNATIONAL FINANCE**

The subject gives a detailed idea about macro environment on which financial transactions are carried out and also gives a comprehensive knowledge about ways and means of raising of finance by MNCs'.

**CO 16 : BUSINESS ENVIRONMENT**

Understands the impact of environment in business

**CO 17 : ADVANCED COST ACCOUNTING**

The student learns about the higher application of cost accounting techniques and methods and also know the application of cost control techniques.

**CO 18: DIRECT TAXES-ASSESSMENT & PROCEDURES**

The subject make the students familiar with the assessment and procedures of direct taxes in the country.

**CO 19 : FINANCIAL MARKETS & DERIVATIVES**

Makes the students familiar with the financial system of the country in general and capital market operations in particular. The course also intends to give good understanding of commodity trading through multi commodity exchanges.

**CO 20: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT**

Gives a detailed idea about techniques of Security analysis

### ***Programme Specific Outcome***

The programme concentrates on finance side of subject commerce. Hence, the student specializes in the various aspects of financial aspects of an enterprise. The student becomes adverse in the theory and management principles of Financial Management, Income Tax computation of various assesses, Strategic management and organisational behaviour .Also , because of importance given to project and accompanying comprehensive viva , a student becomes confident enough to face interviews.

### ***Programme Outcome***

The programme offered specialising in finance is considered equivalent to many other professional courses like CA,CMA ,CS etc while job placement. The programme covers all the prominent areas related to managing an enterprise with main thrust given to finance.



# **B.Sc. BOTANY MODEL II PLANT BIOTECHNOLOGY**

## **Programme Outcome**

The Department of Botany of The Cochin College offers B.Sc. Botany model II vocational plant biotechnology course. In this undergraduate programme, students will learn botany as the core course, biotechnology as the vocational course and biochemistry as the complementary course. Students learn English as common course and Hindi, Malayalam or French as their additional language course. The following are the expected programme outcome,

1. Know the importance and scope of the discipline
2. Inculcate interest in and love of nature with its myriad living forms
3. Impart knowledge of Science as the basic objective of Education
4. Develop a scientific attitude to make students open minded, critical and curious
5. Develop an ability to work on their own and to make them fit for the society
6. Expose themselves to the diversity amongst life forms
7. To develop skill in practical work, experiments, equipments and laboratory use along with collection and interpretation of biological materials and data
8. Make aware of natural resources and environment and the importance of conservation of them
9. Develop ability for the application of the acquired knowledge in the fields of life so as to make our country self reliant and self sufficient
10. Appreciate and apply ethical principles to biological science research and studies

## **Programme Specific Outcomes**

The course will provide both basic and advanced knowledge about various branches of Botany. Students will develop experimental, observational, computational skills in different botanical aspects. After studying the vocational biotechnology course, students will understand the importance of tissue culture and genetically modified crops. Biochemistry course will help a better understanding of plant metabolism. English course will improve their communication skills and vocabulary. Additional languages will provide a deeper knowledge in another language.

## **Course Outcomes**

### **Semester1**

Core course 1: METHODOLOGY OF SCIENCE AND AN INTRODUCTION TO BOTANY

At the end of this course students will be able to understand the different types of classifications in the living kingdom, to demonstrate the use of scientific method, to understand the evolution and diversity of plant kingdom.

### **Semester2**

Core course 2: MICROBIOLOGY, MYCOLOGY AND PLANT PATHOLOGY

By studying this course students will be able to understand the diversity of fungi and lichens, economic importance of fungi, economic and pathological importance of fungi.

### **Semester 3**

Core course 3: PHYCOLOGY AND BRYOLOGY

After completing this course students will be able to understand the unique and general features Algae and Bryophytes and familiarize it, to study the external morphology, internal structure and reproduction of different types of Algae and Bryophytes, to study the application of Phycology in different fields.

### **Semester 4**

Core course 4: PTERIDOLOGY, GYMNOSPERMS AND PALEOBOTANY

At the end of this course students will be able to understand the evolutionary trends in Pteridophytes and Gymnosperms, to study the external morphology, internal structure and reproduction of different types of Pteridophytes and Gymnosperms, to study the anatomical variations in vascular plants, to understand the significance of Paleobotany and its applications.

### **Semester 5**

Core course 5: ANATOMY, REPRODUCTIVE BOTANY AND MICROTECHNIQUE

This course will help the students to understand the internal structure and reproduction of Angiosperm groups, understand the individual cells and also tissues simultaneously, understand the structural adaptations in plants growing in different environment, understand the morphology and development of reproductive parts, understand the fruit and seed development, understand the techniques used to preserve and study plant materials.

Core course 6: RESEARCH METHODOLOGY, BIOPHYSICS AND BIOSTATISTICS

This course will equip the students to conduct independent research and prepare research reports, to make the students acquaint with different tools and techniques used in research work, to equip the students with basic computer skills necessary for conducting research, to enable the students to have enough numerical skills necessary to carry out research.

Core course 7: PLANT PHYSIOLOGY AND BIOCHEMISTRY

This course will help the students to acquire knowledge about the different metabolic pathways that occur inside the plant body, understand plant functioning, familiarize different physiology

experiments, acquire basic skills and techniques related to plant physiology, understand the role, structure and importance of the bio molecules associated with plant life.

#### Core course 8 : ENVIRONMENTAL SCIENCE AND HUMAN RIGHTS

By studying this module the students will get awareness about the biodiversity and the importance of their conservation, understand the importance of sustainable utilization of natural resources, enable the students to understand the structure and function of the ecosystems, understand various kinds of pollution in the environment, their impacts on the ecosystem and their control measures, make the students aware about various environmental laws in India and the role of various movements in the protection of nature and natural resources.

#### Open course : AGRI-BASED MICROENTERPRISES

Students from other departments gain basic information about the business opportunities in plant sciences, learn the sustainable agriculture and organic farming, inculcate an enthusiasm and awareness about ornamental gardening, nursery management and mushroom cultivation.

### **Semester 6**

#### Core course 9: GENETICS, PLANT BREEDING AND HORTICULTURE

After the completion of this course the students will understand the principles of heredity, understand the patterns of inheritance in different organisms, understand the inheritance pattern of nuclear and extra nuclear genes, understand the methods of crop improvement, understand the importance of horticulture in human welfare, develop skills in gardening technique among students.

#### Core course 10: CELL AND MOLECULAR BIOLOGY

By studying this course the students will understand the ultra structure and functioning of cell in the sub-microscopic and molecular level, study the structure of DNA and RNA, understand process like replication, transcription and translation, molecular basis of certain human diseases.

#### Core course 11: ANGIOSPERM MORPHOLOGY, TAXONOMY AND ECONOMIC BOTANY

This course will help the students to understand the aims, objectives and significance of taxonomy, identify the common species of plants growing in Kerala and their systematic position, acquaint with the basic technique in the preparation of herbarium, familiarizing with the plants having immense economic importance.

#### Core course 12 : BIOTECHNOLOGY AND BIOINFORMATICS

At the end of this course students will understand to carry out plant tissue culture, the different steps in the production of transgenic crops, application of biotechnology, study the vast repositories of biological data knowledge, equip to access and analyze the data available in the databases.

#### Programme elective course : AGRIBUSINESS

This course will inculcate and impart an idea about the business opportunities in the field of plant sciences, develop an entrepreneurial mindset and also to stick on to the core subject among the Botany students, give an idea about the need of sustainable development and organic farming, harness the opportunities and potentials in the field of ecotourism, processing technology and food sciences.

**Department of Zoology  
The Cochin College  
Program Outcome (PO), Program Specific Outcome (PSO) and Course Outcome (CO) of  
B.Sc. Zoology (Model I)**

**PROGRAM OUTCOME:**

**PO1** Acquire basic knowledge of various disciplines of Zoology and General Biology meant both for a graduate terminal course and for higher studies.

**PO2** Inculcate interest in nature and love of nature.

**PO3** Appreciate the rich diversity of organisms and their ecological and evolutionary significance

**PO4** Imbibe basic skills in the observation and study of nature, biological techniques, experimental skills and scientific investigation

**PO5** Create awareness on the internal harmony of different body systems and the need for maintaining good health through appropriate lifestyle.

**PO6** Acquire basic knowledge and skills in certain applied branches for self-employment Impart awareness of the conservation of the biosphere.

**PO7** Aware students about ethical principles and commit to professional ethics and responsibilities

**PO9** Information and skill of advanced biological techniques for experimental purpose.

**Program Specific outcome**

The three-year graduate programme should be able to

**PSO1** Analyze the relationship among animals, plants and microbes

**PSO2** Explain various physiological changes in our bodies

**PSO3** Analyze the impact of environment on our bodies

**PSO4** Appreciate the basic concepts of the different branches of biology

**PSO5** Explain the role and impact of different environmental conservation programmes

**PSO6** Identify animals beneficial to humans

**PSO7** Identify various potential risk factors to health of humans

**PSO8** Perform laboratory works as per laboratory standards

**PSO9** Familiarize application of biological sciences in apiculture, aquaculture, agriculture and medicine

### **Course Outcomes- Core Courses**

#### **Semester 1**

#### **ZY1CRT01 & ZY2CRP01- GENERAL PERSPECTIVES IN SCIENCE & PROTISTAN DIVERSITY**

**CO1** Create an awareness on the basic philosophy of science, concepts and scope

**CO2** Appreciate different levels of biological diversity through the systematic classification

**CO3** Familiarize taxa level identification of animals

**CO4** Impart interest in Protistan diversity.

**CO5** Acquaint different parasitic protists

#### **Semester 2**

#### **ZY2CRT02 & ZY2CRP01 - ANIMAL DIVERSITY - NON-CHORDATA**

**CO1** Create appreciation on diversity of life on earth

**CO2** Recognize different levels of biological diversity through the systematic classification of invertebrate fauna

**CO3** Familiarize taxa level identification of animals

**CO4** Appreciate the evolutionary significance of invertebrate fauna

**CO5** Instill curiosity on invertebrates around us.

**CO6** Impart knowledge on parasitic forms of lower invertebrates.

### **Semester 3**

#### **ZY3CRT03 & ZY2CRP02 ANIMAL DIVERSITY –CHORDATA**

**CO1** Acquire in depth knowledge on the diversity of chordates and their systematic position.

**CO2** Make them aware of the economic importance of some classes.

**CO3** Familiarize d the evolutionary importance of selected chordate groups

### **Semester 4**

#### **ZY3CRT04 & ZY2CRP02 RESEARCH METHODOLOGY, BIOPHYSICS AND BIOSTATISTICS**

**CO1** Familiarize the learner the basic concept of scientific method in research process.

**CO2** Have a knowledge on various research designs.

**CO3** Develop skill in research communication and scientific documentation.

**CO4** Create awareness about the laws and ethical values in biology.

**CO5** Equip the students with the basic techniques of animal rearing collection and Preservation

**CO6** Help the student to apply statistical methods in biological studies.

### **Semester 5**

#### **ZY3CRT05 & ZY6CRP03 ENVIRONMENTAL BIOLOGY AND HUMAN RIGHTS**

**CO1** Instill the basic concepts of Environmental Sciences, Ecosystems, Natural Resources, Population, Environment and Society

**CO2** Make the students aware of natural resources, their protection, conservation, the factors polluting the environment, their impacts and control measures.

**CO3** Teach the basic concepts of toxicology, their impact on human health and remedial measures

**CO4** Create a consciousness regarding Biodiversity, environmental issues & conservation strategies

**CO5** Develop the real sense of Human rights – its concepts & manifestations

## **Semester 5**

### **ZY3CRT06 & ZY6CRP03 CELL BIOLOGY AND GENETICS**

**CO1** Appreciate the structure and function of the cell as the fundamentals for understanding the functioning of all living organisms.

**CO2** Conceptual clarity of different cell organelles, their structure and role in living organisms.

**CO3** Develop critical thinking, skill and research aptitudes in basic and applied biology

**CO4** Emphasize the central role of genes and their inheritance in the life of all organisms.

## **Semester 5**

### **ZY3CRT07 & ZY6CRP04 EVOLUTION, ETHOLOGY & ZOOGEOGRAPHY**

**CO1** Acquire knowledge about the evolutionary history of earth - living and nonliving

**CO2** Familiarize about evolutionary concepts and theories

**CO3** Study the distribution of animals on earth, its pattern, evolution and causative factors

**CO4** Impart basic knowledge on animal behavioral patterns and their role

## **Semester 5**

### **ZY3CRT08 & ZY6CRP04 HUMAN PHYSIOLOGY, BIOCHEMISTRY, AND ENDOCRINOLOGY**

**CO1** This course will provide students with a deep knowledge in biochemistry, physiology and endocrinology.

**CO2** Defining and explaining the basic principles of biochemistry useful for biological studies for illustrating different kinds of food, their structure, function and metabolism.

**CO3** Explaining various aspects of physiological activities of animals with special reference to humans.

**CO4** Students will acquire a broad understanding of the hormonal regulation of physiological processes in invertebrates and vertebrates.

**CO5** By the end of the course, students should be familiar with hormonal regulation of physiological systems in several invertebrate and vertebrate systems.

**CO6** This also will provide a basic understanding of the experimental methods and designs that can be used for further study and research.

#### **SEMESTER V. OPEN COURSES (FOR OTHER STREAMS)**

##### **ZY5OPT01 VOCATIONAL ZOOLOGY**

**CO1** Develop critical thinking skill and research aptitude among students, by introducing the frontier areas of the biological science.

**CO2** Emphasize the central role that biological sciences plays in the life of all organisms.

**CO3** Introduce the student to some of the present and future applications of bio-sciences

**CO4** Acquire basic knowledge and skills in aquarium management, Quail farming, vermicomposting and apiculture for self-employment

**CO5** Learn the different resources available and to develop an attitude towards sustainability

**CO6** Give awareness to society about need for waste management and organic farming

#### **Semester 6**

##### **ZY3CRT09 & ZY6CRP05 DEVELOPMENTAL BIOLOGY**

**CO1** To achieve a basic understanding of the experimental methods and designs that can be used for future studies and research.

**CO2** To provide the students with the periodic class discussions of current events in science which will benefit them in their future studies in the biological/physiological sciences and health-related fields

**CO3** To contribute to critical societal goal of a scientifically literate citizenry.



## **Semester 6**

### **ZY3CRT10 & ZY6CRP05 Microbiology and Immunology**

**CO1** Familiarize the microbial world, its structure and function.

**CO2** Appreciate various microbial infections and their epidemiology

**CO3** Knowledge on fundamental aspects of basic biology of bacteria and viruses

**CO4** Explain immunity and related aspects in human health and well- being.

**CO5** Provide basic microbiology laboratory skill for employment

## **Semester 6**

### **ZY6CRT11 & ZY6CRP06 – BIOTECHNOLOGY, BIOINFORMATICS & MOLECULAR BIOLOGY**

The students should: -

**CO1** Acquaint with emerging field of biotechnology

**CO2** Familiarize the applications in medical, industrial, environmental agricultural and nano-medicine.

**CO3** Develop critical thinking on biosafety, copyright and intellectual property rights issues related to biotechnology.

**CO4** Acquire basic knowledge in bioinformatics and its application

**CO5** Appreciate the molecular mechanisms of cellular functions

## **Semester 6**

### **ZY6CRT12 & ZY6CRP06 OCCUPATIONAL ZOOLOGY (APICULTURE, VERMICULTURE, QUAIL FARMING & AQUACULTURE)**

**CO1** To equip the students with self-employment capabilities.

**CO2** To provide scientific knowledge of profitable farming.

**CO3** To make the students aware of cottage industries.

**Semester 6**

**ELECTIVE COURSE.**

**ZY6CBT04 . NUTRITION, HEALTH AND LIFESTYLE MANAGEMENT**

**CO1** Provide students with a general concept of health and the parameters that define health and wellness.

**CO2** Familiarize the principles of nutrition and its role in health.

**CO3** Acquaint students regarding food safety, food laws & regulations.

**CO4** Provide knowledge and understanding regarding life style diseases.

**CO5** Promote an understanding of the value of good life style practices, physical fitness and healthy food habits for life style disease management.

## **DEPARTMENT OF CHEMISTRY**

### **PROGRAM – BSc CHEMISTRY**

#### **Program Outcome**

1. Understand, demonstrate and solve major concepts in all disciplines of chemistry.
2. Employ critical thinking and scientific knowledge to design, carry out, record and analyze the results of chemical reactions.
3. Solve the problem and also think methodically, independently and draw a logical conclusion.
4. Create an awareness of the impact of chemistry on the environment and society.
5. To inculcate scientific temperament in the students.
6. Find out green route for chemical reaction for sustainable development.
7. Develops analytical skills and problem-solving skills requiring application of chemical principles.
8. Enable the students to execute critical thinking and scientific inquiry in the performance, design, interpretation and documentation of laboratory experiments at a level suitable to succeed at an entry level position in chemical industry or a chemical post graduate program.

### **Program specific outcome**

1. To develop the ability to apply the principles of chemistry.
2. To understand the basic facts and concepts in chemistry.
3. To develop skills in proper handling of apparatus and chemicals
4. To know the role of chemistry in nature and in society.
5. To be familiar with the different branches of chemistry like analytical, organic, inorganic , physical, environmental and polymer chemistry.
6. Helps in understanding the causes of environmental pollution and can open up new methods for environmental pollution control.
7. Help to acquire the ability to synthesise, separate and characterize compounds using laboratory and instrumentation techniques.
8. To apply appropriate techniques for the qualitative and quantitative analysis of chemicals in laboratories and in industries.
9. To develop analytical skills and problem solving skills requiring application of chemical principles.
10. The student will be capable of using of advanced instruments and related soft-wares for in-depth characterization of materials/chemical analysis and separation technology.

## **Course Outcome**

1. Student will be able to apply the fundamental principles of atomic theory, chemical periodicity, chemical bonding, solution chemistry to subsequent courses.
2. Student would have good command of experimental methodology in chemical and industrial field.
3. Student will know and recall the fundamental principles for chemical bonding, nomenclature, structural isolation, stereo chemistry, chemical reaction and mechanism.
4. Student will be able to know basic principles of various spectroscopic methods used for characterisation of organic compounds and also interpret the spectroscopic data.
5. Systematic and coherent understanding of the fundamental concepts in Physical chemistry, Organic Chemistry, Inorganic Chemistry, Analytical Chemistry and all other related allied chemistry subjects.
6. Students will be able to demonstrate the experimental techniques and methods of their area of specialization in Chemistry.
7. Disciplinary knowledge and skill: A graduate student is expected to be capable of demonstrating comprehensive knowledge and understanding of both theoretical and experimental/applied chemistry knowledge in various fields of interest.
8. The student will be capable of using of advanced instruments and related soft-wares for in-depth characterization of materials/chemical analysis and separation technology.
9. The course curriculum incorporates basics and advanced training in order to make a graduate student capable of expressing the subject through technical writing as well as through oral presentation.

## Under Graduate CBCS

### B.A. English Language and Literature Model I

#### Programme Outcome

The course is intended to introduce the students to the basics of grammar, usage and effective communication. On completion of the course, the student should be able to: 1. confidently use English in both written and spoken forms. 2. Use English for formal communication effectively.

To introduce students to the different genres of literature and to the niceties of literary expression. On completion of the course, the student should be able to: 1. appreciate and enjoy works of literature. 2. appreciate the aesthetic and structural elements of literature.

To sensitize the learners to contemporary issues of concern. By the end of the course, the learner should be able to: 1. Identify the major issues of contemporary significance 2. Respond rationally and positively to the issues raised 3. Internalise the values imparted through the selections.

To introduce the students to the taste of time tested world classics. On completion of the course, the student should: 1. become familiar with the classics from various lands. 2. Understand the features that go into the making of a classic.

7 The course is intended to sensitive students to the various ways in which literature serves as a platform for forming, consolidating, critiquing and re-working the issue of identity‘ at various levels. On completion of the course, the student should be aware of the following: 1. The subtle negotiations of Indigenous and Diasporic identities with-in Literature. 2. The fissures, the tensions and the interstices present in South Asian regional identities. 3. The emergence of Life Writing and alternate/alternative/marginal identities.

To acquaint the learners with different forms of inspiring and motivating literature. At the end of the course, the student shall be able to: 1. maintain a positive attitude to life. 2. evaluate and overcome setbacks based on the insights that these texts provide.

The course seeks to introduce the student to the major signposts in the historical evolution of literary studies from its inception to the current postcolonial realm. **OBJECTIVES OF THE COURSE** On completion of the course, the student should be able to discern the following: 1. The emergence of literature as a specific discipline within the humanities. 2. The tenets of what is now known as ‘\_traditional‘ approaches and also that of ‘\_formalism.‘ 3. The shift towards contextual-political critiques of literary studies. 4. The questions raised by Cultural Studies and Feminism(s) 5. The issues of sublaternity and regionality in the literary domain.

The course seeks to introduce the student to the basics of English language and literature. **OBJECTIVES OF THE COURSE** On completion of the course, the student should be able to

discern the following: 1. The evolution and the differential traits of the English language till the present time. 2. The evolution of literature from antiquity to postmodern times. 3. The diversity of genres and techniques of representation and narration 4. The links between literature and film as narrative expressions. 5. The emergence of British and American Literature through diverse periods

**AIM OF THE COURSE** The student is given space to mature in the presence of glorious essays, both Western and Non-Western. **OBJECTIVES OF THE COURSE** On completion of the course, the student shall be: 1. familiar with varied prose styles of expression. 2. aware of eloquent expressions, brevity and aptness of voicing ideas in stylish language.

**AIM OF THE COURSE** To acquaint the student with the rich texture of poetry in English. **OBJECTIVES OF THE COURSE** On completion of the course the students shall have: 1. an understanding of the representation of poetry in various periods of the English tradition. 2. an awareness of the emerging cultural and aesthetic expressions that poetry makes possible.

**AIM OF THE COURSE** This course is an introduction to the science of linguistics. It seeks to give an overview of the basic concepts of linguistics and linguistic analysis to the students. **OBJECTIVES OF THE COURSE** This course seeks to achieve the following: 1. To show the various organs and processes involved in the production of speech, the types and typology of speech sounds, segmental & suprasegmental features of the English language, and transcription using IPA. 2. To describe and explain morphological processes and phenomena. 3. To show the various processes involved in the generation of meaning. 4. To enhance students' awareness that natural language is structure dependent and generative and to develop their ability to observe, describe and explain grammatical processes and phenomena.

The course seeks to introduce the student to select theatre texts that form the canon of English drama. **OBJECTIVES OF THE COURSE** On completion of the course, the student shall be: 1. familiar with the works of the playwrights included in the course. 2. informed about the broad genre-based nuances in the realm of drama. 3. able to appreciate and critique drama as an art form.

**VISION** The importance of environmental science and environmental studies cannot be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. The United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 and World Summit on Sustainable Development at Johannesburg in 2002 have drawn the attention of people around the globe to the deteriorating condition of our environment. It is clear that no citizen of the earth can afford to be ignorant of environment issues. India is rich in biodiversity which provides various resources for people. Only about 1.7 million living organisms have been described and named globally. Still

many more remain to be identified and described. Attempts are made to conserve them in ex-situ and in-situ situations. Intellectual property rights (IPRs) have become important in a biodiversity-rich country like India to protect microbes, plants and animals that have useful genetic properties. Destruction of habitats, over-use of energy resource and environmental pollution has been found to be responsible for the loss of a large number of life-forms. It is feared that a large proportion of life on earth may get wiped out in the near future. In spite of the deteriorating status of the environment, study of environment has so far not received adequate attention in our academic programme. Recognizing this, the Hon'ble Supreme Court directed the UGC to introduce a basic course on environment at every level in college education.

Accordingly, the matter was considered by UGC and it was decided that a six months compulsory core module course in environmental studies may be prepared and compulsorily implemented in all the University/Colleges of India. The syllabus of environmental studies includes five modules including human rights. The first two modules are purely environmental studies according to the UGC directions. The second two modules are strictly related with the core subject and fifth module is for human rights. OBJECTIVES Environmental Education encourages students to research, investigate how and why things happen, and make their own decisions about complex environmental issues by developing and enhancing critical and creative thinking skills. It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers. Environmental Education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future. It encourages character building, and develops positive attitudes and values. To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment and helps to protect the nature and natural resources. To help the students in acquiring the basic knowledge about environment and the social norms that provides unity with environmental characteristics and create positive attitude about the environment.

1. AIM OF THE COURSE To make the learner aware of the way in which history shapes the life and literature of a people 2. OBJECTIVES OF THE COURSE To give the learner a comprehensive overview of the history of Britain and its• impact upon the rest of the world To enable him to understand English literature in the light of historical events• To analyse the manner in which a person is moulded by the historical events of his• personal and communal life
2. To enable students to have a notion of the evolution of literature and to help them perceive the interplay of social processes and literature OBJECTIVES OF THE COURSE By the end of the course it is hoped that: 1. students will be competent to understand literature against the backdrop of history. 2. students will be inspired to contribute dynamically to historical and literary processes.
3. AIM OF THE COURSE To make the students competent in their job-seeking, job-getting, and job-holding needs. The course shall cater to equipping the students in



Comprehensive Language Enhancement. . OBJECTIVES OF THE COURSE On completion of the course, the students should be able: 1. To develop communicative skills, which will enable them to prepare for a career and function effectively in it. 2. To equip themselves in oral and written communication to enhance their academic and professional use of language. 3. To train themselves in making effective presentations.

4. AIM OF THE COURSE The students will be introduced to a selection of regional literatures translated into English. OBJECTIVES OF THE COURSE On completion of the course, the student should be able to comprehend the following: 1. An understanding of much discussed writers/literary pieces in the vernaculars. 2. The modern trends in regional literatures.

## M.A. English Degree Programme

(Mahatma Gandhi University Regulations PGCSS2019 from 2019-20 Academic Year)

**Aim of the Programme:** The programme aims to develop students' competence with reference to Literatures/Narratives in English, and also an awareness regarding both the historicity and contemporaneity of 'language/communication' and its interdisciplinary and global cultural aftermaths. The programme prepares students to reflect on the social and ethical dimensions of research and for careers in secondary and higher education, content development, creative visualizations, publishing, and translation.

### Research Methodology and Project Writing

Students need to expose themselves to the theory & mechanics of project writing. They need to familiarize with the basic aspects of research and get well-versed with the technicalities of writing a PG project. Formulate a topic and write the project observing the conventions of writing. A familiarity with the basic parameters will also chisel originality of thought and conception, nurturing an attitude and aptitude for Research in Postgraduate Students. Before writing a project students need to be familiar with the following:

- Definition and Scope of Research: Kinds of Research, Formulation of Research Problems, Key Concepts, Investigation, Exploration, Examination, Analysis
- Research in Language and Literature: 1.Methods in Language Research, 2.Trends and Approaches in Literary Research, 3. Selection of Topic:(i)Area of Research: Genre, Period, Region, Author, Texts, Approach, (ii)Intra-disciplinary/Interdisciplinary, (iii)Background Study, (iv)Studies of Literatures, (v)Framing of Topic-statement.
- Research Mechanics: 1. Tools, Language and Plagiarism: Primary and Secondary Sources(i)Print: Books, Journals etc., (ii)Audio-visual resources(iii)Interviewing(iv)Field Studies(v)Web resources 2.Research Language (Clarity, Correctness, Coherence) 3.Research Ethics
- Different Style Sheets: MLA, APA (latest editions) etc.; Documentation, in text, Parentheticals, footnotes, endnotes, citation, references, bibliography, Use of Quotations
- Writing: Framing of Topic-statement, Abstract, and Keywords for Research Paper, A Brief Literature Review/ Review of Scholarships in the area, Paper margin, Spacing Drafting, Revising, Heading, Pagination, Proof-Reading.

### **National/ International Seminar (Presented in any Semester) – Norms and Guidelines**

1. A paper has to be presented in any of the four semesters at a National or International Seminar organised by English Departments anywhere in the world, before the date fixed for the project viva in the final semester.
2. The marks of the same will be added to the whole only in the last semester.
3. One credit is allotted for the seminar presentation.
4. The topic should be related to English/Cultural Studies, and can be the topic of any of the seminars conducted by Departments of English across the world.
5. The norms of preparing the paper for the seminar will be the norms prescribed by the respective National/International seminars organised.
6. The supervising teacher for project should also supervise the seminar paper. The list of **Supervising Teachers for Projects and Seminar Papers** have to be decided at the start of the course of a batch of students.
7. The students will bear the sole responsibility of preparing, submitting, travelling, attending and presenting the abstracts/full papers at the National/International Seminars.
8. The attendance of students for the days of the Seminar should be provided by the department/college concerned.
9. The student will have to submit a signed copy of the abstract and the full paper bearing name and register number, the brochure and a copy of the Certificate of Presentation from relevant authorities to the Head of the Department, and all the documents have to be produced to the external examiners conducting project viva in the fourth semester for verification.
10. The marks of the paper presentation will be accorded by the externals based on the documents verified, and the externals and the Head of the Department have to sign the mark list before submitting to the University.
11. Those who fail to produce the relevant documents prescribed in 9 will be marked 'AB' (Absent) or 'F' (Failed) in the mark list.
12. The department concerned should keep the documents safe for a period of three years at least, for further verification if necessary.

## Semester 1 - Core Course 1:

### [EN010101] - Up Until Chaucer: Early Literatures in English

#### Objectives:

At the end of this course, the student will be able to make sense of the major themes in Ancient and Medieval English literature as an expression of Anglo-Saxon culture and society as it emerges into a Britain-consciousness; also, the student will be equipped to access and understand the personal experiences of people living in a society very different from our own.

#### Course Description:

What was *English* Literature like before Shakespeare? Before Chaucer? And from our current vantage point what *was* Chaucer and his peers *doing*? Through 5 modules, this paper offers a two-fold bird's eye-view: first, the literature of the Anglo-Saxons written over a thousand years ago and then, the standardising creative consolidation initiated by Chaucer and his peers; a paradigm shift that made possible the emergence of English literature with a purpose and identity of its own.

*Module 1* is a sampling of early poetry.

*Module 2* offers a selection of early Prose and Drama.

*Module 3* wades through extracts from the first epic *Beowulf* and the iconic Romance *Le Morte D'arthur* along with a choice sequence of the early English Lyric.

*Module 4* is exclusively designated to familiarise the student with the varied oeuvre of Geoffrey Chaucer.

*Module 5* gives a feel of Chaucer's peers, John Gower, Thomas Hoccleve and William Langland.

**Crucial Note:** The texts/readings slotted for seminars are not to be elaborated upon. The onus is on the teacher to be a judicious facilitator who will initially provide a purview of the texts' crux and then proactively generate topics/themes, which the students can develop and share with their peers. The thrust should be upon illuminating how these texts/readings proactively link up with the other texts/readings in the module. Also, it should be kept in mind that this paper is, in a very specific sense, a 'translation course' – we are dealing with both the Anglo-Saxons and the medieval writers in 'Modern English' versions of the text.

**Semester 1 - Core Course 2:**  
**[EN010102] -Literatures of the English Renaissance**

**Objectives:** The course is designed to familiarise the students with the literature, thought and culture of the Renaissance period in England, a historical watershed marking the transition from the medieval to the modern. It is also designed as a theoretical/critical reading of the era and the texts in the light of recent theoretical interventions like New Historicism and Cultural Materialism which had a special interest in Renaissance texts. Representative works of the period have been selected with a view to instilling in the students a capacity to appreciate Renaissance writings bearing the stamp of radical changes in the outlook and ways of life.

**Course Description:** The course comprising major genres like Drama, Poetry and Prose provides an introduction to the literature of the English Renaissance studied in a variety of historical contexts and discusses how the confluence of social, political and economic forces culminated in conditions conducive to the creation of an impressive volume of literature. It highlights how literary luminaries like William Shakespeare and Christopher Marlowe emerged and influenced each other leaving their mark on their own time and the time to come. The completion of the course has to enable the students to imbibe the true spirit of Renaissance and Humanism making them capable of identifying the relationship between Renaissance writings and its socio-political context.

**Semester 1 - Core Course 3:**  
**[EN010103] -Literatures of the English Revolution/ Enlightenment**

**Objectives:** This course familiarizes the learner with the English literary texts which reflect the austere Puritan ideals of the late seventeenth century, the neoclassical vigour of the eighteenth century considerably influenced by the philosophy of the Enlightenment and the perspectival shift manifested in the transitional literature towards the end of this era.

**Course Description:** Module 1 offers a comprehensive account of the late seventeenth and the eighteenth century literary scenario drawing upon the significant social and the political developments of the times. How such events fostered the rise of new genres like the novel is unravelled. Further, the learners are familiarised with Ian Watt's perspective on the inception of this new genre in England. This module also introduces the learners to an in-depth critique of the philosophy of the Enlightenment.

Module 2 acquaints the learners with the poetry of John Milton the epic poet of the late seventeenth century, the neoclassical satirists such as John Dryden and Alexander Pope, Aphra Behn the first professional woman writer of England, and Thomas Gray, the transitional poet.

Module 3 dwells on the drama written during this span of time.

Module 4 presents the acclaimed fiction of the aforementioned period.

Module 5 accommodates the ground-breaking nonfictional works of the period.

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**Semester 1 - Core Course 4:**
**[EN010104] -Nineteenth Century English Literatures**

Total Credits: 4

Total Hours: 25

Weightage:

**Objectives:**

The course aims to familiarize students with the fundamental premises of the Romantic Movement and Victorian literature, their theoretical and ideological frameworks, and the major trends and offshoots across various genres. A rough time span of one and a half century which witnessed an initial flowering of Romanticism, followed by the rapid growth of industrialization, scientific thinking and materialism all of which find expression in the texts chosen for study.

**Course Description:**

The first module introduces the theoretical premises of the British Romantic Movement as well as the Victorian Age that chronologically follows the Romantic Era. The second module throws light on the historical significance of the Ode as a poetic form best suited to examine the subjective and individualistic imagination of the romantic poet which finds expression as most of the poems in this section are odes. The Third Module marks the shift to the Victorian Sensibility with increased attention being paid to the decline of the romantic sensibility, the growth of reason, ascent of materialism etc. The fourth module deals with the best novels in the English language while the last one focuses on prose and Drama

**Semester 1 – Core Course 5:**
**[EN010105] – Literary Criticism**

Total Credits: 4

Total Hours: 25

Weightage:

**Objectives:**

To familiarize the students with the key concepts and texts of literary criticism ever since its emergence, and to provide theoretical familiarity with the range, approaches, and mechanics of critique.

**Course Description:**

The course should help the student to recognize the historical, political and aesthetic dimensions of the growth of literary criticism. Issues like canon formation, evolution of the genres, methods of literary analysis will all be discussed in the different modules. Concepts being discussed include classical western criticism from Plato, Aristotle Horace and Longinus, English Renaissance and neoclassical criticism, the 18th century trends, the romantic revolt, the Victorian tradition, the new critics, Eliot's critical positions, Psychoanalysis, myth/archetypal

criticism, Russian Formalism, and Reader response theories.

**Semester 2 – Core Course 6:**

**[EN010201] – Modernity and Modernisms**

Total Credits: 4

Total Hours: 25

Weightage:

**Objectives:**

To familiarize the students with the literary trends of the early twentieth century in the context of the sensibility of literary modernism in the wake of the World War.

**Course description:**

The course includes an introduction to the changed literary perspectives in the twentieth century, along with the social, economic and political background. Imperial expansion which had reached a boiling point, the onset of the World War I coupled with the attempts at creating a new world order remained some of the key issues. The impact of the Soviet experiment at the global level that needs to be read against the backdrop of the spread and influence of Marxism on a global scale calls for a radical review of world politics. This was followed by the rise of Fascism and Nazism, followed curiously by the shadow of doubt cast over communism. In the literary field reaction against Romanticism and Victorianism led to experimentation in writing in all genres. Starting from the poetry of World War I the movement traverses a wide range of concerns topics and forms of writing. The discussion also includes movements like the Avant Garde, the Pink Decade and so forth.

**Semester 2– Core Course 7:**

**[EN010202] –Postmodernism and Beyond**

**Objectives:** This course aims to acquaint the learners with the postmodern works of literature which defy categorisation and prove to be experimental in nature, subverting what is conventionally revered as the norm. The learners are to be familiarised with the eclectic dimensions of postmodern thought as reflected in these literary works in which the boundaries that demarcate the different genres are often blurred. Such literature eludes fitting into the rigid frames of nomenclature and rejects the concepts of objectivity, absolute truth and the notion of the stratification into the high and the low culture. Further, it is keenly perceptive and critical of the underlying ideologies that nurture oppressive institutions. The emphasis is on acknowledging the heterogeneity of thought and articulation.

**Course Description:** Module I familiarises the learners with the theoretical concepts of postmodernism drawing upon Jean Francois Lyotard’s notions. Barry Lewis’s essay dwells on the stylistic aspects of postmodern literature. Jeffrey T. Nealon’s “Preface” considers the concept of post-postmodernism and briefly explores the current scenario. The second module offers a

compilation of the diverse postmodern poetry by Frank O'Hara, John Ashberry, Tony Harrison, Michael Palmer, Allen Ginsberg, Carol Ann Duffy and Adrienne Rich. The third and the fourth modules present novels by writers from Kurt Vonnegut to William Gibson, which facilitate the learners to trace the evolution of postmodern fiction over the decades with its culmination in the cyberpunk. The fifth module presents postmodern plays by Edward Bond, Sam Shepard and Tom Stoppard, which employ significant themes and novel techniques.

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**Semester 2 – Core Course 8:**  
**[EN010203] -American Literatures**

**Course Objectives:**

This course seeks to introduce the students to the most important branch of English literature belonging to the non-British tradition. The course attempts to provide detailed information to the student regarding the processes and texts chiefly responsible for the evolution of American Literature as a separate branch possessing characteristic features which sets it apart from others.

**Course Description:**

To acquaint the students with some of the major conflicts, struggles and movements that are closely connected with the experiences of a group of people struggling to establish themselves as a nation.

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**Semester 2 – Core Course 9:**  
**[EN010204] -English Language History and Contemporary Linguistics**

**Objectives:**

To inculcate in the students awareness about the basic concepts of linguistics, the scientific study of language after initiating them into the history of English language.

**Course Description:**

The course, divided into five modules covers the important areas in linguistics and updates the pupil on the most recent advances in the theory of language study. The course has also taken into consideration the necessity to introduce the historical perspective of English language though not in detail. This should ideally prepare the student at one level with modern notions and concerns in the field of linguistics.

**Semester 2 - Core Course 10:**  
**[EN010205] -Thinking Theory**



Total Credits: 4

Total Hours: 25

Weightage:

**Objectives:**

This course aims at introducing students to certain core aspects of what is currently designated as ‘literary theory’ and also provide exposure to select current developments in this domain.

**Course Description:**

Conceived as interfaces, the course has 5 modules; ideally to be taught in the order in which the readings are listed.

*Module 1* puts forth 3 readings which will serve as signposts that mark the moments that retrospectively are termed as turns to/within ‘theory’ – Jonathan Culler’s ‘over-view essay’ on the emergence of ‘Theory’, Levis-Strauss’ application of Saussurean Theory, and Derrida’s critique of Levis-Strauss.

*Module 2* situates the theoretical ruminations on Authorship and Discourse: Roland Barthes’ “The Death of the Author” and Michel Foucault’s “What Is an Author?” problematises the hallowed assumptions of Literary Criticism; Robert J. C. Young’s “Poems That Read Themselves” takes the unsettling deconstructive project of Poststructuralism forward.

*Module 3* seeks to frame a reference wherein Psychoanalysis tackles issues pertaining to the Unconscious and Cognition: Shoshana Felman’s “Beyond Oedipus: The Specimen Story of Psychoanalysis” traces the shift from Freud to Lacan; “The Phantom of Hamlet or the Sixth Act: Preceded by the Intermission of “Truth”” by Nicolas Abraham and Nicholas Rand is an interface where Literary Creativity takes Theory *per se* as its content!; Julia Kristeva’s “Approaching Abjection” throws light on how insights from psychoanalysis enrich our understandings of contemporary [literary] cultures.

*Module 4* has three readings, which in tandem present a discussion platform that goes beyond the normative heterosexual assumptions of Identity and even Feminism – in fact it *Queers* the Gender dynamic: Judith Butler’s “Performativity, Precarity and Sexual Politics”, Judith Halberstam’s “Queer Temporality and Postmodern Geographies” and Eve Sedgwick’s “Paranoid Reading and Reparative Reading”, all are focused on the Liminality and Transitivity that are often overlooked to shore up the normative Male-Female dynamic.

*Module 5* is in many ways a ‘Post-postcolonial Turn’: Critical Race/Ethnic Studies. In encountering bell hooks’ two short pieces, “Postmodern Blackness” & “Marginality as a Site of Resistance.” along with Stuart Hall’s “Gramsci’s Relevance for the Study of Race and Ethnicity” and Barbara Christian’s “The Race for Theory”, it is hoped that the student/reader will be illumined as to the way the [dominant-normative] Self *disavows* its encounter with the Othered-Marginal.

### THIRD SEMESTER CORE COURSES

**Semester 3 - Core Course 11:**

**[EN010301] -Reading India**

**Objectives:**

The course is intended to provide an insight to the historical, cultural and literary heritage of

India by acquainting the students with major movements and figures of Indian literature in English. Questions of language, nation and aesthetics figure prominently among the objectives of this course.

**Course Description:**

The course explores the origin and growth of Indian writing in English especially in the colonial and post colonial context. Representative selections from all the four major genres of Poetry, Prose, Novel and Drama which highlight the evolution of the coloniser's language in the native soil, the differences in the thematic and stylistic aspects between the pre independence and post independence periods will be studied in detail. The problem of modernisation in Indian writing in English, the Diaspora and the quest for identity also will be focussed. A close study of select literary texts including translations of regional literatures is expected to acquaint the students with the cultural diversity of the country as well as the Indian philosophy reflected in these writings.

**Semester 3 - Core Course 12:  
[EN010302]-Postcolonial Fiction**

**Objectives:**

To introduce the students to the discursive nature of colonialism, and the counter-discursive impulses of postcolonial theory, narratives and texts.

**Course Description:**

The course attempts to cover through representative texts the writing, reading and critical-theoretical practices based on the (post)colonial experience. While a segment of the course addresses the consequences of European expansion and the creation and exploitation of the 'other' worlds, the course also addresses 'internal colonisations' of diverse kinds.

*Module 1* is a conceptual orientation; it includes extracts from three of the 'seminal' writings on what 'postcoloniality' is all about.

*Module 2* is India-specific; it has a slight slant towards 'hybridity' 'spectrality' and 'subalternity' - as the texts by Gayatri Spivak, Homi Bhabha, Salman Rushdie, and C Ayyappan would amply attest.

*Module 3* is a choice take on West Asia; alongside the unavoidable Edward Said, this section tries to tease out a familiarity with 'Arabic' literature as it engages itself in postcolonial concerns.

*Module 4* is on Africa. It might appear that this section is in a curious sense 'patriarchal'! However, the selection-choice has to do with the weight of cultural capital that these authors bring, and also the understanding that non-male voices have adequate representation in other courses within the same syllabus.

*Module 5* is on South America/Caribbean. Here the effort is to try and wrench this writing corpus from the analytical frame that reduces it to the Magic Realist/Fabulist mode.

**Semester 3 - Core Course 13:  
[EN010303] -Body, Text and Performance**

**Objectives:**

The objectives of the course include facilitating an understanding of the basic structural, thematic and theoretical patterns which govern the poetic process, especially in its relation to the performative or the theatrical.

**Course Description:**

The interface between the verbal and the visual is the area under discussion here. Drama, Theatre, Body, Performance and performativity need to undergo close scrutiny here. The way the aspects of power and powerlessness are constructed and performed have to be analyzed. One cannot disregard the cinematic medium in a study of performance. Theatres, dealing with issues like gender, ethnicity, caste etc. need to be introduced. Anti-Aristotelian notions like Alienation Effect, modern dramatic modes like Comedy of Menace, the techniques of cinematic adaptations, etc. are also to be discussed in connection with the texts. Though seemingly different, Expressionism and similar modes of theatrical performance should be made part of classroom discussion. Other performance patterns like dance, performance in the form of gender/transgender/autobiography have also to be seriously considered within the gamut of this paper.

**Semester 3 – Core Course 14:****[EN010304] -Literature and Gender**

Total Credits: 3

Total Hours: 25

Weightage:

**Objectives:**

The course seeks to highlight the historic, thematic and cultural concerns that literature attempts against the backdrop of gender issues. A theoretical framework is provided whereby gender issues are examined, paying special attention to the fundamental political, religious and social issues that shape gender relations, thereby viewing gender as a fluid rather than a *mere* fixed hetero-normative Male-Female concept.

**Course Description:**

The ‘woman quotient’ in Gender Studies is mapped in the first module where the concept of Masculinity which looms large in a patriarchal social order is also examined. The learner is taken on a poetic voyage through *écriture feminine* in the second module. The third section interrogates the social stakes involved in being a woman and addresses the issue of Gender and Community Identity. The fourth section addresses the problematic issues of Lesbian and Black identity. The last module is an exclusive study of the issue of patriarchal oppression portrayed in various Indian languages over the decades.

**Semester 3 - Core Course 15:**

## [EN010305]-Ethics in/as Literature

Total Credits: 3

Total Hours: 25

Weightage:

### Course Objectives:

The main objective of this course is to familiarise the student with certain ‘ethics’ that narrative fiction has adopted across centuries, continents and languages. It is expected that the student will be introduced to the various ethical, formal choices that schools, influences and narrative devices have upheld so as to shape narrative fiction into its present expressive plurality.

### Course Description:

*Module 1* includes reading from some of the major theoretical interpretations of the narrative and narrative mores: Roland Barthes’ ‘Authors and Writers’, Milan Kundera’s ‘The Depreciated Legacy of Cervantes’, Orhan Pamuk’s Preface to *Tristram Shandy* and Franco Moretti’s “History of the Novel, Theory of the Novel”.

*Module 2* takes a walk down the fabulist lane that stretches beyond what we usually understand as fictional/narrative realism: Miguel de Cervantes’s *Don Quixote (Part 2)*, Lawrence Sterne’s *Tristram Shandy*, Donald Barthelme’s post-modern reworking of the *Snow White* – fairy tale, Jorge Luis Borges’ ‘The Garden of Forking Paths’ and Gabriel Garcia Marquez’ ‘The Handsomest Drowned Man in the World’

*Module 3* is an attempt to sample how fiction has dealt with the issue of disabilities at different levels. Starting with the perennial classic, Victor Hugo’s *The Hunchback of Notre-Dame*, the module also includes Nikos Kazantzakis’ *God’s Pauper: St Francis of Assisi*, José Saramago’s *Blindness*, W. Somerset Maugham’s ‘The Man with the Scar’ and Raymond Carver’s ‘Cathedral’

*Module 4* is all about the environment – the natural and the human and the intersectionality between them. The module starts off with the phenomenal Malayalam work by Subhash Chandran, *A Preface to Man*, followed by Orhan Pamuk’s *Snow*, Margaret Atwood’s *Oryx and Crake*, J. M. Coetzee’s ‘The Lives of Animals’ and Mahasweta Devi’s ‘Dopti/Draupadi’

*Module 5* looks into issues of Otherness, as it has been tackled by narrative fiction. The selection includes Fyodor Dostoyevsky’s *The Possessed*, Ama Ata Aidoo’s parody of Joseph Conrad’s *Heart of Darkness* - *Our Sister Killjoy*, Arundhati Roy’s *The Ministry of Utmost Happiness*, John Henrik Clarke’s ‘The Boy Who Painted Christ Black’ and the Malayalam Dalit masterpiece, Paul Chirakkarode’s ‘Eli Eli Lama Sabachthani?’ [My God, My God, Why Hast Thou Forsaken Me?]

**Note:** As is evident from a perusal of the syllabus, all the seminar fields have been assigned ‘short stories’; this is a tacit nod to acknowledging the trajectories which this ‘other’ prose fictional genre has traversed in the last two hundred odd years.

## FOURTH SEMESTER CORE COURSES

### Semester 4 - Core Course 16: [EN010401]-Cultural Studies

**Objectives:** To introduce students to certain interpretive strategies commonly employed in Cultural Studies. Emphasis is on overt interdisciplinary approaches to exploring how cultural processes and artifacts are produced, shaped, distributed, consumed, and responded to in diverse ways.

**Course Description:**

“It is —a tendency across disciplines rather than a discipline itself.” By transgressing disciplinary boundaries, Cultural Studies suggests a “remapping of the humanities.”

*Module 1* is axiomatic in the sense that the 3 readings taken from Raymond Williams, Stuart Hall, and John Storey set the stage for the subsequent engagements.

*Module 2* draws attention to the pervading cultural semiosis that one can discern in societies the world over. The readings from Guy Debord, R. Nandakumar, and David Forgacs offer ways by which one can understand the methodologies of representation and the decoding of such social signs as such.

*Module 3* is all about the different modes that Lifestyles assume. The readings from Michel de Certeau, Pierre Bourdieu, and George Simmel offer means by which we can and ‘read’ the various negotiations of socio-cultural identities.

*Module 4* is the terrain of ‘Homo Ludens’ – the playing human. The writings of Roland Barthes, Abilash Nalapat/Andrew Parker, and Amanda Roth/Susan A. Basow draw attention to the poetics and politics of sports-as-myth.

*Module 5* is an assemblage that can be termed ‘Manifestoes.’ The readings from Arjun Appadurai, Achille Mbembe, and *Jacques Rancière* form an inter-textual deep-play network that constellates to draw attention to the horizon of cultural certitudes, expectations and anxieties that deserve thorough academic scrutiny.

### Semester 4 - Core Course 17: [EN010402]-Postcolonial Poetry

**Objectives:**

To introduce the students to the diversity of poetry coming from the erstwhile colonies of the European Colonial Empires. To clear the ground from where the student can see how, beyond the general discursive constellations, there are regional specifics that ‘in a hybrid mode’ negotiate issues of sovereignty, language, race, gender, identity and place.

**Course Description:**

“Here we stand at the messiest point of our time // someone should write us, if we don’t / who will.” - Gülten Akin (2007).

The course attempts to cover, through representative texts, the entire gamut of poetry that has emerged from and still addresses the (post)colonial experience, the world over.

*Module 1* is a conceptual orientation; it tries to situate, in a somewhat general way, certain contours that ‘Poetic Postcolonialisms’ assume.

*Module 2* is a collection of poems that are South Asia & Australasia-specific.

*Module 3* is a choice take on West & East Asia.

*Module 4* is solely representative of poems from Africa.

*Module 5* brings together myriad yet ‘intertwined’ verses from South America & Caribbean.

**Special Note:** A detailed delving into the poems is not expected vis-à-vis the Seminar Fields. Questions pertaining to these sections will be Generic: issues like Identity, Gender, Cultural Poetics and Language Politics.

## **ELECTIVES**

### **Semester Four**

#### **Semester 4 – Elective Course:**

##### **[EN820401] -Modern European Fiction**

#### **Course Objectives:**

To familiarize the students with the evolution of European fiction over the latter half of the Nineteenth and early twentieth century

#### **Course Description:**

To acquaint the students with some of the major movements that shaped the growth of the European novel and the makers of European Fiction and to familiarize them with the writings of major novelists belonging to France, Germany, Russia, Greece, Italy and Austria spanning movements as varied as Realism, Existentialism, Naturalism and Postmodernism.

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#### **Semester 4 – Elective Course:**

##### **[EN820402] -Modern European Drama**

#### **Objectives:**

To familiarize the student with modern European Drama in terms of topics, perspectives, and dramatic literature

#### **Course Description:**

This paper contains representative works to acquaint the student with the social and cultural contexts that inform modern European Drama. The conventions of play beginning from the turn of the century realistic plays to the postmodern experiments are chosen. The paper contains representative plays of the Realistic, Naturalistic, Modernist, epic theatre, Theatre of the Absurd and postmodernist theatre. The paper has five modules. The first module consists of introductory essays on both modernist and postmodernist theatre along with some key terms associated with it. The teacher and the learner are expected to address these terms while studying the representative plays. The second, third and fourth modules consist of representative plays of the various modernist dramatic modes. The fifth Module entirely consists of postmodern plays.

While dealing with them the teacher and the learner are expected to keep in mind the

characteristics of postmodern plays in general. The student is also encouraged to revisit the ideological foundations of modernism. The student is to be acquainted with how the diversified movements in post-modernist theatre are informed by the theatre's increasing propensity to self-consciousness besides discussing poststructuralist theories and feminist theatre, environmental theatre, multicultural theatre, performance theories, threat from the cinema and the future of theatre.

#### **Semester 4 – Elective Course:**

#### **[EN820403] – Indian Poetics: Theories and Texts**

#### **Objectives:**

The aim of the course is to familiarise the students with the major texts of the Indian tradition in the light of Indian poetic principles.

#### **Course Description:**

The eight major schools of Indian Aesthetics are to be introduced. The two cardinal schools viz. Rasa and dhvani are to be discussed in detail. The students must be familiar with the strong geopolitics behind Tamil poetics. Texts have to be discussed in the light of the theories. Questions pertaining to the dominant aesthetic sentiment, the suggestive potential of the language of the text, and so on need to be raised. Alternative readings have to be encouraged. Issues like the ideological ramifications of the erotic sentiment as a tool for the containment of women, the heroic sentiment as a mechanism for authenticating kingship and social stratification, the distinction of language into Sanskrit for noble men and Prakrit for menial characters and women, the division of space into domestic and exterior and its significance in the domestication of women, the significant absence of women (with the possible exception of Avvayyar) etc. are to be highlighted. Students may be encouraged to read Romila Thapar's analysis of Shakuntalam to see the drastic difference in the portrayal of women in the epic and the play. How Sanskrit became an Orientalist imperial weapon also may be analysed.





# THE COCHIN COLLEGE

## DEPARTMENT OF MATHEMATICS

### PROGRAMME OUTCOME-B.Sc.MATHEMATICS MODEL II VOCATIONAL COMPUTER SCIENCE.

- ❖ Think in a critical manner.
- ❖ Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
- ❖ Formulate and develop mathematical arguments in a logical manner.
- ❖ Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.
- ❖ Understand, formulate and use quantitative models arising in social science, business and other contexts.

### COURSE OUTCOME

#### **MM1CRT01: Foundation of Mathematics**

This course introduces the concepts of mathematical logic methods of proofs, sets, functions, relations and partial orderings. A brief introduction of the theory of Equations is also included. These topics are foundations of most areas of modern mathematics and are applied frequently in the succeeding semesters.

#### **MM2CRT01: Analytic Geometry, Trigonometry and Differential Calculus**

- ❖ Define conics and draw the graph of conics.
- ❖ Analyse many problems related to a line and plane in space.

#### **MM3CRT01: Calculus**

This course is the continuation of second semester mathematics .Dealing with differential calculus,Partial Differentiation ,integral calculus and multiple integrals.

#### **MM4CRT01 : VECTOR CALCULUS, THEORY OF NUMBERS AND LAPLACE TRANSFORM**

The third semester deals with ordinary calculus but in the fourth- semester vector differentiation ,vector integration ,basic theory of numbers and Laplace Transforms and it is an applied mathematics area with spicy mathematics ( Physics).

### **MM5CRT01 : MATHEMATICAL ANALYSIS**

It is a pure branch of mathematics and begin with real numbers and properties, sequences and their properties including monotone sequences ,Bolzano-Weierstrass Theorem and Cauchy's Criterion for convergence of series.Series-absolute convergence and non absolute convergence and Limits.

### **MM5CRT02: DIFFERENTIAL EQUATIONS**

What is a differential equations-First order linear equations, Exact equations, Orthogonal trajectories and families of curves, Homogeneous equations.Second order linear equations ,power series solutions and special functions and partial differential equations including lagrangian's method.

### **MM5CRT03 : ABSTRACT ALGEBRA**

- ❖ demonstrate insight into abstract algebra with focus on axiomatic theories
- ❖ apply algebraic ways of thinking
- ❖ demonstrate knowledge and understanding of fundamental concepts including groups, subgroups, normal subgroups, homomorphisms and isomorphism
- ❖ demonstrate knowledge and understanding of rings, fields and their properties
- ❖ understand and prove fundamental results and solve algebraic problems using appropriate techniques

### **HUMAN RIGHTS AND MATHEMATICS FOR ENVIRONMENTAL STUDIES**

- ❖ Environmental Education encourages students to research, investigate how and why things happen, and make their own decisions about complex environmental issues. By developing and enhancing critical and creative thinking skills, It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers.

- ❖ Environmental Education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future, encourage character building, and develop positive attitudes and values.
- ❖ To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment for protecting nature and natural resources.
- ❖ To help the students in acquiring the basic knowledge about the environment and to inform the students about the social norms that provide unity with environmental characteristics and create a positive attitude about the environment.

### **MM6CRT01 : REAL ANALYSIS**

- ❖ Effectively write mathematical solutions in a clear and concise manner.
- ❖ Effectively locate and use the information needed to prove theorems and establish mathematical results.
- ❖ Effectively locate and use the information needed to prove theorems and establish mathematical results.
- ❖ Demonstrate the ability to integrate knowledge and ideas of differentiation, and integration in a coherent and meaningful manner and use appropriate techniques for solving related problems and for establishing theoretical results.
- ❖ Demonstrate ability to think critically by proving mathematical conjectures and establishing theorems from differential and integral calculus.
- ❖ Demonstrate an intuitive and computational understanding of set theory, continuity, differentiation, and integration through calculations and solving application problems

### **MM6CRT02 : GRAPH THEORY AND METRIC SPACES**

In the domain of mathematics and computer science, *graph theory is the study of graphs that concerns the relationship among edges and vertices*. It is a popular subject having its applications in computer science, information technology, biosciences, mathematics, and linguistics to name a few.

The purpose of this course is to learn the foundations of General Topology. General Topology is the study of convergence and continuity. It is a foundational subject in almost every branch of Mathematics.

### **MM6CRT03 : COMPLEX ANALYSIS**

Complex Analysis is a rich area of mathematics. Its applications are numerous and can be found in many other branches of mathematics, ranging from number theory, uid dynamics, electrodynamics, and computer science. The purpose of this course is to introduce the main ideas of complex analysis.

### **MM6CRT04 : LINEAR ALGEBRA**

Linear algebra is absolutely essential in mathematics, engineering, physics, statistics, and most other mathematically related sciences. It is a bridge between algebra and geometry: on the one hand it allows you to describe lines, planes, and other geometric objects in terms of algebraic equations; on the other, given a set of equations, we can use linear algebra to trade in those equations for a collection of lines, planes, etc. and then use the geometry of those objects to reason about the original equations. It's an extraordinarily powerful tool and in this class we will learn how best to use it. Even without all of its usefulness, linear algebra is also fascinating because it allows us to understand, concretely, the concept of "dimension". The course will be a mixture of theory and practice. One of our goals will be to become familiar with how to use linear algebra to solve complicated systems of equations and to become familiar with the concepts of an abstract vector space, linear transformations, eigenvalues, eigenvectors.

### **MM5GET02 : APPLICABLE MATHEMATICS**

The objective is to prepare students of all streams, particularly those with arts and commerce background for their higher studies and to approach competitive examinations. Detailed explanations and short cut methods for solving problems are to be introduced to students, so that they can acquire better understanding of concepts and problem solving skills. All questions asked to be of arts students' standard.

### **MM6CBT03 : NUMERICAL ANALYSIS**

Numerical analysis is the story of how functions, derivatives, integrals, and differential equations are handled as strings of numbers in the computer. This course analyzed the basic techniques for the efficient numerical solution of problems in science, economics

and engineering. Topics spanned root finding, interpolation and approximation of functions, integration.

## **PROGRAMME OUTCOME- M.Sc.MATHEMATICS**

- ❖ To improve the perspective of students on mathematics as per modern requirement.
- ❖ To enhance the logical, reasoning, analytical and problem solving skills of students.
- ❖ To orient students towards relating Mathematics to applications.
- ❖ To help the student build interest and confidence in learning the subject.
- ❖ To cultivate a research culture in young minds.
- ❖ To encourage students to pursue higher studies in mathematics.
- ❖ To ultimately see that the learning of mathematics becomes more alive, vibrant, relevant and meaningful; a program that paves the way to seek and understand the world around them.
- ❖ To motivate students to uphold scientific integrity and objectivity in professional endeavours.

## **COURSE OUTCOME**

### **Abstract Algebra & Advanced Abstract Algebra**

- ❖ Demonstrate knowledge of group homomorphism, isomorphism and automorphism
- ❖ Derive and apply the First Isomorphism Theorem
- ❖ Demonstrate knowledge of conjugates, the Class Equation and Sylow theorems
- ❖ Derive and apply Sylow Theorems
- ❖ Demonstrate knowledge of polynomial rings and associated properties
- ❖ Derive and apply Gauss Lemma, Eisenstein criterion for irreducibility of rationals
- ❖ Demonstrate the characteristic of a field and the prime subfield;
- ❖ Demonstrate Factorization and ideal theory in the polynomial ring; the structure of a primitive polynomials; Field extensions and characterization of finite normal extensions as splitting fields; The structure and construction of finite fields; Radical field extensions; Galois group and Galois theory

## Linear Algebra

The course will be a mixture of theory and practice. One of our goals will be to become familiar with how to use linear algebra to solve complicated systems of equations and to become familiar with the concepts of an abstract vector space, linear transformations, eigenvalues, eigenvectors.

## Real Analysis

- ❖ Identify sets with various properties such as finiteness, countability, infiniteness, uncountability etc.
- ❖ Demonstrate various properties of sequence and series of real numbers.
- ❖ Identify and construct functions of a real variable with many analytical properties.
- ❖ Differentiate and integrate functions of a real variable.
- ❖ Integrate functions a real variable in the sense of Riemann – Stieltjes.
- ❖ Classify sequences of functions which are pointwise convergent, uniform convergent etc.

## Measure Theory and Integration

- ❖ Understand the fundamental concepts of Mathematical Analysis
- ❖ State some of the classical theorems in of Advanced Real Analysis
- ❖ Be familiar with measurable sets and functions
- ❖ Integrate a measurable function

## Topology and Advanced Topology

- ❖ Understand terms, definitions and theorems related to topology.
- ❖ Demonstrate knowledge and understanding of concepts such as open and closed sets, interior, closure and boundary.
- ❖ Create new topological spaces by using subspace, product and quotient topologies.

- ❖ Use continuous functions and homeomorphisms to understand structure of topological spaces.
- ❖ Demonstrate knowledge and understanding of metric spaces.
- ❖ Apply theoretical concepts in topology to understand real world applications

## Graph Theory

- ❖ Be familiar with the history and development of graph theory
- ❖ Write precise and accurate mathematical definitions of basic concepts in graph theory
- ❖ Provide appropriate examples and counterexamples to illustrate the basic concepts
- ❖ Understand and apply various proof techniques in proving theorems in graph theory.
- ❖ Acquire mastery in using graph drawing tools
- ❖ Understand the basic concepts and fundamental results in matching, domination, coloring and planarity.
- ❖ Construct examples and proofs pertaining to the basic theorems.

## Algorithmic Graph Theory

- ❖ Apply the theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory.
- ❖ Reason from definitions to construct mathematical proofs.
- ❖ Write graph theoretic ideas in a coherent and technically accurate manner.
- ❖ Obtain a solid overview of the questions addressed by graph theory and will be exposed to emerging areas of research.

## Complex Analysis and Advanced Complex Analysis

- ❖ Apply the concept and consequences of analyticity and the Cauchy-Riemann equations and of results on harmonic and entire functions including the fundamental theorem of algebra.
- ❖ compute complex contour integrals in several ways: directly using parameterization, using the Cauchy-Goursat theorem Evaluate complex contour

integrals directly and by the fundamental theorem, apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula, and

- ❖ Represent functions as Taylor, power and Laurent series, classify singularities and poles, find residues and evaluate complex integrals using the residue theorem.
- ❖ Use conformal mappings and know about meromorphic functions.

## Partial Differential Equations

- ❖ Identify ordinary and singular points by Frobenius Method, Hypergeometric differential equation and its polynomial.
- ❖ Understand the basic concepts and definition of PDE and also mathematical models representing stretched string, vibrating membrane, heat conduction in rod.
- ❖ Demonstrate on the canonical form of second order PDE.
- ❖ Demonstrate initial value boundary problem for homogeneous and non-homogeneous PDE.
- ❖ Demonstrate boundary value problem by Dirichlet and Neumann problem.

## Numerical Analysis with Python 3

- ❖ Define mathematical symbols using python.
- ❖ Calculus approach of python.
- ❖ Methods of curve fitting.
- ❖ Numerical Integration correlating with python

## Functional Analysis and Spectral Theory.

- ❖ Explain the fundamental concepts of functional analysis.
- ❖ Understand the approximation of continuous functions.
- ❖ Understand concepts of Hilbert and Banach spaces with  $l_2$  and  $l_p$  spaces serving as examples.
- ❖ Understand the definitions of linear functional and prove the Hahn-Banach theorem, open mapping theorem, uniform boundedness theorem, etc.
- ❖ Define linear operators, self adjoint, isometric and unitary operators on Hilbert space.
- ❖ Introduction to Spectral theory and positive operators.



### **Optimization Techniques**

- ❖ Enumerate the fundamental knowledge of Linear Programming and Dynamic Programming problems.
- ❖ Learn classical optimization techniques and numerical methods of optimization. Know the basics of different evolutionary algorithms.
- ❖ Explain Integer programming techniques and apply different optimization techniques to solve various models.

### **Analytic Number Theory**

- ❖ Define arithmetic functions and Dirichlet's problems.
- ❖ Some Elementary Theorems on the Distribution of Prime Numbers.
- ❖ Definitions and basic properties of congruences.
- ❖ Different types of congruences and Euler-Fermat's theorem, The Chinese remainder theorem.
- ❖ Quadratic Residue and primitive roots.

### **Combinatorics**

- ❖ Carry over and apply knowledge from Combinatorics proof based .
- ❖ present clear and detailed solutions to assigned problems.
- ❖ read and understand assigned sections of the textbook.
- ❖ Independently study a new combinatorial topic and present this topic to their peers.

### **Differential Geometry**

- ❖ Identify situations that require the use of vector calculus and differential geometry.
- ❖ Solve certain classes of problems related to vector calculus, differential geometry or topology.
- ❖ Understand and write mathematical proofs using formal mathematical reasoning.
- ❖ Present solutions on computer or in a written form.

# **DEPARTMENT OF ZOOLOGY**

## **PROGRAM OUTCOMES - M.Sc ZOOLOGY**

- Students gain knowledge and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms.
- Learn how earth was formed and how started and develop on the plant through process of organic evolution.
- Understand the biological diversity and grades of complexity of various animal forms through their systematic classification and comparative structural studies. • Understand the roles of plants, animals and microbes in the sustainability of the environment and their interaction among themselves and deterioration of the of the environment due to anthropogenic activities.
- Analyse complex interactions among the various animals of different phyla, their distribution and their relationship with the environment.
- Apply the knowledge of internal structure of cell, it's functions in control of various metabolic functions of an organism.
- Develop technical skills in biotechnology, bioinformatics and biostatistics. • Understands the complex evolutionary process and behaviour of animals. • Understand concepts and principles of biochemistry, genetics, developmental biology, cell biology, microbiology, physiology, biotechnology, immunology and molecular biology.
- Correlates the physiological processes of animals and relationship of organ systems. • Understanding of environmental conservation process and its importance, pollution control and biodiversity and protection of endangered species.
- Gain knowledge of agrobased small scale industries like sericulture, fish farming, butterfly farming and vermicompost preparation.
- Understand about various concepts of genetics and its importance in human health. • Apply ethical principles and commit to professional ethics and responsibilities in delivering his or her duties.
- Apply the knowledge and understanding of Zoology to one's own life and work. • Develops empathy and love towards the animals.

## **PROGRAM SPECIFIC OUTCOMES**

- Understand the nature and basic concepts of cell biology, genetics , taxonomy, physiology, ecology and applied zoology.

- Analyse the relationships among animals, plants and microbes.
- Perform procedures as per laboratory standards in the areas of taxonomy, physiology, ecology, cell biology, genetics, applied zoology, clinical science tools and techniques of zoology , microbiology, biochemistry, biotechnology, immunology and research methodology.
- Understand the applications of biological sciences in apiculture, aquaculture, agriculture and medicine.
- Gains knowledge about research methodologies and effective communication and problem solving methods.
- Contribute the knowledge for nation building.

## **COURSE OUTCOMES**

### **SEMESTER 1**

#### ZL010101- ANIMAL DIVERSITY: PHYLOGENETIC AND TAXONOMIC APPROACHES

At the end of this course the students will be able to:

- Understand the organisation and life: diversity and phylogeny of invertebrates and vertebrates.
- Understand the origin and development of animals and geological time scale. • Understand the levels of structural organisation.
- Understand the outline classification of animals.
- To make the students aware for taxonomic status of of various invertebrate and vertebrate animal groups.

#### ZL010102- EVOLUTIONARY BIOLOGY AND ETHOLOGY

- Understand the basic principles and theories of evolution.
- Analyse the evolutionary relationship of different animal taxa.
- Understand the complexity of animal behaviour and its relation to other biological sciences.
- Have research aptitude in the field of behaviour and evolutionary science.

#### ZL010103- BIOCHEMISTRY

- Demonstrate an understanding of chemical nature of life and life processes. • Obtain an idea on structure and function of biologically important molecules. • Understand the importance of metabolism of biomacromolecules in normal physiology of a man.
- Stay informed about the abnormal metabolism of biomolecules and the resultant diseases.

- Use current biochemical and molecular techniques to plan and carryout experiments.

#### ZL010104- BIostatistics AND RESEARCH METHODOLOGY

- To understand the concepts of statistics and research methodology and create awareness of tools, gadgets and accessories of biological research.
- Help students to improve analytical and critical thinking skills through personal problem solving.
- To enable learners to effectively apply suitable statistical tests in research and equip them to prepare research papers and project proposals.
- To sensitise students about the ethics involved in research and enable them to come up with innovative research design.

#### SEMESTER 2

##### ZL010201-FIELD ECOLOGY

- Understanding on the basic theories and principles of ecology.
- Learning various natural resources and their management.
- Analysing the human influence on environment and current environmental issues.
- Understanding different types of animal adaptations of varying environment.

##### ZL010202-DEVELOPMENTAL BIOLOGY

- To understand the developmental processes that lead to establishment of vertebrates and the corresponding cellular and genetic mechanism.
- Attain a basic conceptual knowledge about the principal cellular mechanisms of development.
- To explain the clinical implications of development and the mechanisms intervent in the developmental alterations.
- To expose the learner to the new developments in embryology and its relevance to man.

##### ZL010203- GENETICS AND BIOINFORMATICS

- To get an in-depth understanding on the principles and mechanisms of inheritance.
- To analyse the fine structure and molecular aspects of genetic material.
- To understand the importance of inheritance in man and congenital diseases.
- To get acquainted with the field of bioinformatics and able to take up bioinformatic studies.

##### ZL010204- MICROBIOLOGY AND BIOTECHNOLOGY

- Getting an overview of the microbial world and its structure and function.
- Familiarising the applied aspects of microbiology.

- Understanding the modern biotechnology practices and approaches.
- Knowledge on public policies, biosafety, intellectual property rights issues related to biotechnology.

#### SEMESTER III

##### ZL010301- ANIMAL PHYSIOLOGY

- To study and compare the organ system across the animal world.
- Understand the comparative functioning of different systems of animals.
- To acquire deeper knowledge about the fundamental process and mechanisms that serve and control the various functions of the body.
- To enhance the knowledge and appreciation of mammalian physiology.

##### ZL010302- CELL AND MOLECULAR BIOLOGY

- Understand the structural and functional details of the basic unit of life at the molecular level.
- Understand and explain the basics of cell biology.
- Explain the new developments in molecular biology and its implications in human welfare
- To study the deeper knowledge about molecular biology principles.

##### ZL010303- BIOPHYSICS, INSTRUMENTATION AND BIOLOGICAL TECHNIQUES

- Understand the biophysical properties and functioning of life processes.
- Have an idea of the different tools and techniques available for studying biochemical and biophysical nature of life.
- Use the tools and techniques for project work/ research in biology.

##### ZL010304- IMMUNOLOGY

- To process an in-depth knowledge and new developments in immunology.
- To describe the organisations and functions of the immune system.
- To give a detailed description of diagnostic tests for diseases.
- To understand different types of vaccines and the role in human health and wellbeing.

#### SEMESTER IV

##### ZL830401- GENERAL MICROBIOLOGY AND PSRASITOGY

- To introduce the world of microbial diversity.
- To learn various pathogens, parasites and related diseases in man.
- Understand history, scope, relevance and applications of microbiology.

##### ZL830402- BACTERIOLOGY, VIROLOGY AND MYCOLOGY

- To give a detailed knowledge about bacteriology, Virology and Mycology • Familiarising modern principles and practices in the world of microorganisms
- To familiarise with various tools and techniques in the study of microbes and to manage a microbial laboratory

#### ZL830403 – CLINICAL MICROBIOLOGY

- To provide skills and competency in the field of clinical microbiology • To familiarise with principles and practices in the study of microbes and to manage a medical microbiology laboratory
- Understand modern aspects in the field of clinical microbiology

## M.Sc CHEMISTRY 2019-2020

### Programme Outcomes:

- M. Sc Chemistry Department of Chemistry After successful completion of two year degree program in chemistry a student should be able to;
- Programme Outcomes .
- Determine molecular structure by using UV, IR and NMR.
- Study of medicinal chemistry for lead compound.
- Improve the Skill of student in organic research area. Synthesis of Natural products and drugs by using proper mechanisms.
- Study of Asymmetric synthesis.
- Solve the reaction mechanisms and assign the final product.

### Programme Specific Outcomes

- Know the structure and bonding in molecules/ ions and predict the Structure of molecule/ions.
- Understand the various type of aliphatic, aromatic, nucleophilic substitution reaction.
- Understand and apply principles of Organic Chemistry for understanding the scientific phenomenon in Reaction mechanisms.
- Learn the Familiar name reactions and their reaction mechanisms.
- Understand good laboratory practices and safety

### Course Outcomes

After completion of these courses students should be able to;

- Realize the terms ionic strength, activity coefficient, DHO equation
- Know the Eigen function, Eigen value, operator and postulates of quantum mechanics.
- Learn two and three dimensional box, mechanics of particle.
- Understand the adsorption of gases by solid type of isotherms
- Recognized the Fricke and ceric sulphate Dosimeter.

- Determine and Learn about Dipole moment and bond order of inorganic molecule.
- Learn about geometry and shape of the molecule.
- Known the preparation and properties of transition metal carbonyls
- Distinguish between type of addition, elimination and substitution reaction.
- Study the importance of safety and security, responsibility types of hazards and risk in chemical laboratory.



## **DEPARTMENT OF BUSINESS ADMINISTRATION**

### **PROGRAMME OUTCOME- BBA**

The Bachelor of Business Administration course is a judicious mix of all functional elements of Business studies which provide participants with foundational knowledge on different aspects of the administration of a business concern. It include at one end the need to realize why an organization exist to the other were it shows the new frontiers to which it can be developed.

This course is designed to develop knowledge on the functional parkour of business administration. The disciplines it cover include, management, commerce, banking, economics, industrial psychology, law, mathematics, statistics, accounting, communication, computer application and accounting software.

At the under graduate level no other course provide the student a feel and basic understanding on such a variety of disciplines. These disciplines are not merely touched upon but are dealt taking the serious contributions it can provide to running business enterprises.

The course is designed in such a fashion to provide ample scope for practical exposure to the problems and opportunities of real business. The two project studies one theoretical (Minor) and other practical (Major) as well as the mandatory requirements of three industrial visit and resultant report. presentation will provide a cutting edge to this under graduate programme over the other similar ones.

### **AIM AND OBJECTIVES**

1. To train the students to be competent entry level management professionals. 2. To impart basic and operational knowledge on all functional areas of management. 3. To encourage young BBA'S to turn in to entrepreneurs.
4. To make young BBA'S a change agents in the society by fostering values which self-proclaim that "Turn to enterprising serve the society and the nation"

### **COURSE OUTCOME**

1. BA1CRT01. PRINCIPLES AND METHODOLOGY OF MANAGEMENT: Principles and Methodology of Management are the basic foundation for management studies. This course offers a methodological perspective about this subject.
2. BA1CRT02: BUSINESS ACCOUNTING: To impart basic knowledge about the system of accounting
3. BA1CMT03 FUNDAMENTALS OF BUSINESS MATHEMATICS: To develop analytical and critical thinking skills in students to prepare them to logically analyse and critically evaluate problem situation through basic mathematics.
4. BA1CMT04 FUNDAMENTALS OF BUSINESS STATISTICS: To provide a reasonable idea of basic statistical methods needed for a statistical investigation and forecasting.
5. BA2CRT06. COST AND MANAGEMENT ACCOUNTING: To impart basic knowledge about the system of cost accounting

6. BA2CRT07 BUSINESS COMMUNICATION: To understand the nuances of business communication This course should be taught by providing group discussion and seminars.
7. BA2CMT08 MATHEMATICS FOR MANAGEMENT: To develop analytical and critical thinking skills and to analyse managerial problems in the light of mathematics and solving in such situations
8. BA2CMT09 STATISTICS FOR MANAGEMENT: To provide a general outlook of certain statistical test which are useful to researchers in various fields.
9. BA3CRT11 HUMAN RESOURCE MANAGEMENT: To provide a knowledge about human resources.
10. BA3CRT12 MARKETING MANAGEMENT: The aim of this course is to provide the students with a conceptual base on marketing management and also to equip them with the necessary skills for employment in the middle level cadre.
11. BA3CRT13 RESEARCH METHODOLOGY” To provide the students about the research methodology,
12. BA3CMT14 BUSINESS LAWS: To build a general awareness about the principles behind contract law and to introduce various types of special contract
13. BA3PRP15 PERSONALITY DEVELOPMENT AND MANAGEMENT SKILLS (Minor Project): The students will have the opportunity to explore current management literature so as to develop an individual style and sharpen his skills in the area of leadership, communication, decision making, motivation and conflict management.
14. BA4CRT16 FINANCIAL MANAGEMENT: The course should be taught in a participate style. Lecture sessions should be supplemented by seminars and group discussions. After each module surprise tests and quizzes should be administered to ensure the participants’ clarity in core concepts
15. BA4CRT17 MANAGERIAL ECONOMICS: This course taught students about uses of managerial economics.
16. BA4CRT18 ENTREPRENEURSHIP: To make the students understand about entrepreneurs
17. BA4CMT19 BASIC INFORMATICS FORMANAGEMENT: To make a student competent to handle and scientifically analyse the various aspects of his business while he commence a business
18. BA4CMT20 CORPORATE LAWS: To build a general awareness about the principles behind, companies and partnerships.
19. BA5CRT21 ORGANISATIONAL BEHAVIOUR: M:anage conflict amongst groups in business environment → Comprehend and apply motivational theories in the workplace → Identify changes within organisations and power and politics in organisations
20. BA5CRT23 ENVIRONMENT SCIENCE AND HUMAN RIGHTS: Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities Environment and Human Rights - Right to Clean Environment and Public Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal, Protection of Environment
21. BA5CMT24 INTELLECTUAL PROPERTY RIGHTS AND INDUSTRIAL LAWS: To appreciate the concepts of patent and trademark protection. To specify the various legal provisions in the Factories Act and Industrial Disputes Act. To identify the benefits offered by ESI Act.
22. BA5CRT25 OPERATION MANAGEMENT: to have thorough knowledge of operation management.
23. BA5CRT26 INDUSTRIAL RELATIONS: To make an awareness about relations between labour

and management in an industry.

24. BA6CRT29 STRATEGIC MANAGEMENT: To make awareness of strategic management. 25. BA6CRT30 COMMUNICATION SKILLS AND PERSONALITY DEVELOPMENT: 26. BA5OPT22 (A). BRAND MANAGEMENT: To develop and implement strategies for successful brand portfolio management.

27. BA6OCT27. (c). INVESTMENT & INSURANCE MANAGEMENT:

28. BA6OCT28. (a) ADVERTISING AND SALESMANSHIP: To orient students in Marketing Management. To encourage entrepreneurial skills. To meet the demand of the various industrial sectors.

29. 4.INDUSTRIAL VISIT The programme makes it mandatory in three semesters namely third, fourth and fifth to organise an industrial visit each. Preferably one to a manufacturing unit, another to a service sector and still another to a start-up village. Individual reports including photographs and illustration of the visit certified by the faculty in charge need to be prepared and submitted. These three reports are submitted to the external examiner for the sixth semester project viva-voce for the successful completion of the programme. The student who fail to submit satisfactory report will be consider as not completed the programme successfully

**DEPARTMENT OF COMPUTER APPLICATIONS**  
**THE COCHIN COLLEGE**

**Programme:BCA**

**Scope**

The revised syllabus for Computer Applications provides a strong foundation to pursue post graduation programme in computer science /applications. The knowledge acquired by the students may also equip them to meet the industrial need, and get placed.

**Programme Objective**

The Programme in Computer Application is designed with the following specific objectives.

- (a) To attract young minds to the potentially rich & employable field of computer applications.
- (b) To be a foundation graduate programme which will act as a feeder course for higher studies in the area of Computer Science/Applications.
- (c) To develop skills in software development so as to enable the graduates to take up self-employment in Indian & global software market.
- (d) To Train & Equip the students to meet the requirement of the Industrial standards.

**Course Design**

The UG programme in Computer Applications and Science includes Common courses, Corecourses, Complementary courses, Open courses, Seminar, Project and viva voce. No course shall carry more than four credits. The

student shall select any one open course in semester V offered by various departments of the College.

### **Duration of Course**

The programme shall normally extend over a period of three academic years consisting of six semesters.

### **Course Outcome**

**Core 1:Computer Fundamentals and Digital Principles (CS1CRT01):**To enable the students to understand the fundamentals of computers, operating systems, number conversions from one system to another. Students will get an idea about Boolean algebra , sequential and combinational circuits.

**Core 2 : Methodology of Programming and C Language(CS1CRT02):** Students will be able to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.They will be able to define data types and use them in simple data processing applications also he/she must be able to use the concept of array of structures. Student must be able to define union and enumeration user defined data types.

**Core 3 Software Lab I (CS1CRP01):**Students will be able to write programs based on arrays,functions,structure,union and pointers

**Core 4: Data Base Management Systems(CS2CRT04):**To understand various database concepts and data models .To understand the E R model and relational model, To master the basics of SQL and construct queries using SQL .To familiarize with the concepts of normalization,transaction process.

**Core 5: Computer Organization and Architecture(CS2CRT05):**To understand the fundamental organisation of a computer system

and functional units of a processor. To understand the concepts of addressing modes, instruction formats, memory organization, parallel processing, pipelining and vector processing.

**Core 6: Object oriented programming using C++( CS2CRT06):** To understand the concepts of object-oriented programming. To understand the concepts of class, method, constructor, pointers, data abstraction, virtual functions, inheritance, overriding, overloading, and polymorphism.

**Core 7: Software Lab- II(CS2CRP02):** Students will be able to do SQL queries such as relational constraints, joins, set operations, aggregate functions, views etc. Students will be able to do programmes based on OOPs concepts.

**Core 8: Computer Graphics (CS3CRT07):** To understand the basics of computer graphics, different graphics systems and applications of computer graphics. To understand various algorithms for scan conversion, use of geometric transformations on graphics objects, extraction of scene with different clipping methods.

**Core 9 : Microprocessor and PC Hardware(CA3CRT01):** To understand the architecture, pin configuration, memory organization and addressing modes of 8085. To understand the various components of motherboard, harddisk and memory

**Core 10: Operating Systems( CA3CRT02):** To understand the basics of operating systems, types and views of operating systems. Students will be able to understand concepts like CPU scheduling algorithms, deadlocks, memory management, storage management.

**Core 11: Data Structure using C++( CS3CRT08):** To understand basic data structures such as arrays, linked lists, stacks and queues. To familiarize

with different sorting and searching techniques.To understand the concepts of trees ,hash table etc,

**Core 12: Software Lab III (CS3CRP03):**Students will be able to write programs based on linked list,sorting,searching,sparse matrix ,trees etc.

**Core 13: Design and Analysis of Algorithms(CS4CRT09):** To understand the basic concepts of algorithms and analyze the performance of algorithms.To understand various graph traversal ,searching and sorting techniques ,concepts like dynamic programming,greedy methods etc

**Core 14: System Analysis and Software Engineering (CA4CRT03):**To familiarize with the concepts of business organization,software life cycle models,software requirement analysis,software design and testing.

**Core 15: - Linux Administration(CS4CRT10):**To understand the history of linux ,concepts like linux architecture,essential linux commands,shell programming,system administrator and various servers

**Core 16: Web Programming using PHP (CS4CRT11):**To familiarize with HTML,CSS,javascript,PHP,MYSQL

**Core 17: Software Lab IV (CS4CRP04):**To get familiar with various linux commands.Students will be able to write shell scripts.Students will be able to write programs based on HTML,javascript,PHP and MYSQL

**Core 18 : Computer Networks(CS5CRT12):**To Understand computer network basics, TCP/IP and OSI reference models. To identify and understand various techniques and modes of transmission.To understand data link protocols, multi-channel access protocols ,IEEE 802 standards for LAN, protocols of transport layer.To understand network security and define various protocols such as FTP, HTTP, DNS.

**Core 19 : IT and Environment (CS5CRT13):** To make the students more conscious about our environment and Human rights. This helps students to learn the Universal science, life principles, value of earth and human rights.

**Core 20: Java Programming using Linux(CS5CRT14):**To gain knowledge about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc. To understand the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods etc and exception handling mechanisms. To understand the principles of inheritance, packages and interfaces.To understand the concepts of swing,applets ,JDBC connectivity etc.

**Core 21: Software Lab V( CS5CRP05):**Students will be able to write java programs based on swing,applet,packages,interfaces etc.

**Core 22: Cloud Computing(CA6CRT04):**To understand the concepts, characteristics, delivery models and benefits of cloud computing.To analyze various cloud programming models and apply them to solve problems on the cloud

**Core 23: Mobile Application development- Android (CS6CRT15 ):** This new generation programming language helps students to be more professional, After graduation students can easily step into the Job industry without taking a short professional course

**Core 24: Data Mining (CS6CBT02):**

To help the students to understand the basic concepts of Data Mining and take up their studies in the area of machine learning, artificial intelligence and data analytics.



**Core 25: Software Lab VI and Seminar(CA6SMP01):**To be able to develop apps in Android. Students will be able to learn about latest topics in the area of Computer Science/ Information Technology.

**Core 26:Software Development Lab II ( Main Project):**The student is able to projects using latest languages/packages in appropriate platforms so that they are trained to meet the requirements of the industry.

### **Projects**

#### **Software Development Lab I (Mini Project in PHP )**

**CA5PRP01:**Students will be able to do a small complete application project.It will make the student confident in designing a system based on software engineering course.

**Software Development Lab II ( Main Project):**The student is able to projects using latest languages/packages in appropriate platforms so that they are trained to meet the requirements of the industry.

### **Open Course**

**Informatics and Cyber Ethics (CS5OPT01):**To understand about the basics of internet and its various services.Students will be aware about various academic services.To acquire knowledge about Cyber Crime and the facilities for secure use of computers.To learn the causes, symptoms and prevention of cyber addiction.

## DEPARTMENT OF COMMERCE

### PROGRAMME OUTCOME

#### B.Com Model 2 Computer Application (SF)

The BCom Computer Applications is a degree that equips students with knowledge in both commerce as well as in computers. It enables the students to apply computer technology in the field of commerce.

More specifically, applying technologies for better growth of the economic system. It qualifies the students both in the IT and commerce sectors. The degree will teach the students all the technicalities involved with respect to the computer applications and how to use them in business after graduation. This course bridges commerce and computer applications which in turn helps the students to become smart and employable. Also, training in Computer Applications in the field of commerce provides extra mileage in placements. Students will gain an in-depth understanding of the working of the field of commerce as well as the IT field. This course is perfect for those who want to work in both the fields or even in either field as it will give them an edge over the competitors. The curriculum taught is modern and innovative which gives the students a much broader outlook on how the market functions.

### AIM AND OBJECTIVES

*At the end of 3 year B.Com model 1 programme with specialisation in Computer Application the Students will be able to:-*

- Enable students efficient in office automation with computers and computer software applications.
- Understand the application of commerce in both theoretical and practical aspects.
- Equip with skill and knowledge to excel in their future career.
- Develop subject skill within various discipline of commerce, business, accounting , economics, finance , auditing and marketing with soft skills in Tally and ERP, E-commerce

### COURSE OUTCOME

#### SEMESTER 1

##### Core Course

##### CO1CRT01. **Dimensions and Methodology of Business Studies**

- To understand business and its role in society
- To have an understanding of Business ethics and CSR
- To comprehend the business environment and various dimensions
- To familiarise Technology integration in business
- To introduce the importance and fundamentals of business research

##### CO1CRT02. **Financial Accounting I**

- To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings

##### CO1CRT03. **Corporate Regulations and Administration**

- To familiarise the students with the management and administration of joint stock companies in India as per Companies Act, 2013

Complementary Course

**CO1CMT01. Banking and Insurance**

- To familiarize the students with the basic concepts and practice of banking and the principles of Insurance.

**Semester 2**

Core Course

**CO2CRT04. Financial Accounting II**

- To acquaint the students with the preparation of books of accounts of various types of business activities and application of important accounting standards.

**CO2CRT05. Business Regulatory Framework**

- The course is intended to familiarise the students with the legal framework influencing business decisions.

**CO2CRT06. Business Management**

- To familiarise the students with concepts and principles of management

Complementary Course

**CO2CMT02. Principles of Business Decisions**

- The course is intended to familiarise the students with the economic concepts and principles underlying business decision making

**Semester 3**

Core Course

**CO3CRT07. Corporate Accounts I**

- To make the students familiarise with corporate accounting procedures and to understand the accounting for banking companies.

**CO3CRT08. Quantitative Techniques for Business- 1**

- To make the students understand the role of statistics and quantitative techniques in business and familiarize them with basic tools applied

**CO3CRT09. Financial Markets and Operations**

- The course is intended to familiarise the students with financial market operations in India

**CO3CRT10. Marketing Management**

- The objective of this course is to provide a sound understanding of the basic principles of marketing management and their applications in the business and industry

### Optional Course

#### **CO3OCT02. Information Technology for Business**

- To make the students aware of the role of information technology in business and make them capable of developing web pages for business

### **Semester 4**

#### Core Course

#### **CO4CRT11. Corporate Accounts II**

- To equip the students with the preparation of financial statements of insurance companies and to understand the accounting procedure for reconstruction and liquidation of companies.

#### **CO4CRT12. Quantitative Techniques for Business- II**

- The objective of this course is to familiarize the students with more advanced tools of data analysis and forecasting and also to have an understanding of the fundamentals of theory of probability.

#### **CO4CRT13. Entrepreneurship Development and Project Management**

- To develop entrepreneurial spirit among students.
- To empower students with sufficient knowledge to start up their venture with confidence.
- To mould young minds to take up challenges and become employer than seeking employment.
- To make them aware of the opportunities and support for entrepreneurship in India.

### Optional Course

#### **CO4OCT02. Information Technology For Office**

- The objective of this course is to make the students capable of managing the office activities with the help of information technology.

### **Semester 5**

#### Core Course

#### **CO5CRT14. Cost Accounting – 1**

- To familiarise the students with cost concepts and to make the students learn the Fundamentals of cost accounting as a separate system of accounting.

#### **CO5CRT15. Environment Management and Human Rights**

- To give the students an understanding of natural resources and ecosystems.
- To create awareness among students about the importance of biodiversity and its conservation.
- To familiarize students with human rights.
- To examine the application of Human rights in the field.

### Complementary Course

#### **CO5CMT08. Programming in C**

- To gain the skills of Structured (Procedural/Functional) Programming using C Language

### Optional Course

#### **CO5OCT02. Computerised Accounting**

- To equip the students to meet the demands of the industry by mastering them with industry sought after computerised accounting packages.
- To expose the students to computer applications in the field of accounting.
- To develop practical skills in the application of Tally Accounting Package.

### Open Course

#### **CO5OP03. Fundamentals of Accounting**

- To familiarize the students with the basic concepts and practice of banking and the principles of Insurance

### **Semester 6**

### Core Course

#### **CO6CRT17. Cost Accounting – 2**

- To acquaint the students with different methods and techniques of costing. and to enable the students to identify the methods and techniques applicable for different types of industries.

#### **CO6CRT18. Advertisement and Sales Management**

- To make the students aware of the strategy, concept and methods of advertising and sales promotion.

#### **CO6CRT20. Management Accounting**

- To acquaint the students with management accounting techniques for the analysis and interpretation of financial statements and to study the basic framework of financial reporting.

### Complementary Course

#### **CO6CMT10. Database Management System**

- To familiarize the students with the concepts of database management and to equip them to handle the database for business firms.

### Optional Course

#### **CO6OCT01. SOFTWARE FOR BUSINESS AND RESEARCH**

- To impart knowledge to use IT in business research analysis.
- To develop practical skills in the applications of business software.

### Core Course

#### **CO6PR01. Project and Viva**

**DEPARTMENT OF COMMERCE**  
**PROGRAMME OUTCOME**  
**B.Com Model 1 Finance and Taxation (SF)**

Taxation and revenue collection forms the core of the administrative and functional responsibilities of a state. A state is run on the resources collected from citizens in the form of taxes. Hence, it becomes essential that proper collection and utilisation of funds is ensured for public welfare.

Management of the collected finance is also important both at the public and private level so as to keep the engine of the economy going. This management and collection function requires effective and qualified professionals who are trained to tackle the situations in practical domain. Apart from that the expanding business and growth opportunities emerging out nowadays require a dedicated set of personnel who can handle finance related matters in an effective and efficient manner.

B.Com in Finance and Taxation course delivers to this demand of the economy by churning out qualified and skilled professionals out of graduate level students with a background in commerce. The course attains its aim through structured and organised curriculum and subject division.

**AIM AND OBJECTIVES**

*At the end of 3 year B.Com model 1 programme with specialisation in Finance and Taxation the Students will be able to:-*

- Acquire knowledge in the field of accounting, business management & taxation subjects.
- Understand the application of commerce in both theoretical and practical aspects.
- Equip with skill and knowledge to excel in their future career.
- Gain knowledge, skill and attitude of financial management, environmental friendly business entrepreneurship and taxation procedure..

**COURSE OUTCOME**

**SEMESTER 1**

Core Course

**CO1CRT01. Dimensions and Methodology of Business Studies**

- To understand business and its role in society
- To have an understanding of Business ethics and CSR
- To comprehend the business environment and various dimensions
- To familiarise Technology integration in business
- To introduce the importance and fundamentals of business research

**CO1CRT02. Financial Accounting I**

- To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings

**CO1CRT03. Corporate Regulations and Administration**

- To familiarise the students with the management and administration of joint stock companies in India as per Companies Act, 2013

### Complementary Course

#### **CO1CMT01. Banking and Insurance**

- To familiarise the students with the basic concepts and practice of banking and the principles of Insurance.

### **Semester 2**

#### Core Course

#### **CO2CRT04. Financial Accounting II**

- To acquaint the students with the preparation of books of accounts of various types of business activities and application of important accounting standards.

#### **CO2CRT05. Business Regulatory Framework**

- The course is intended to familiarise the students with the legal framework influencing business decisions.

#### **CO2CRT06. Business Management**

- To familiarise the students with concepts and principles of management

### Complementary Course

#### **CO2CMT02. Principles of Business Decisions**

- The course is intended to familiarise the students with the economic concepts and principles underlying business decision making

### **Semester 3**

#### Core Course

#### **CO3CRT07. Corporate Accounts I**

- To make the students familiarise with corporate accounting procedures and to understand the accounting for banking companies.

#### **CO3CRT08. Quantitative Techniques for Business- 1**

- To make the students understand the role of statistics and quantitative techniques in business and familiarise them with basic tools applied

#### **CO3CRT09. Financial Markets and Operations**

- The course is intended to familiarise the students with financial market operations in India

#### **CO3CRT10. Marketing Management**

- The objective of this course is to provide a sound understanding of the basic principles of marketing management and their applications in the business and industry

### Optional Course

#### **CO3OCT01. Goods and Services Tax**

- To give the students a general understanding of the GST law in the country with a practical perspective and employability to the students in the commercial tax practices.

## **Semester 4**

### Core Course

#### **CO4CRT11. Corporate Accounts II**

- To equip the students with the preparation of financial statements of insurance companies and to understand the accounting procedure for reconstruction and liquidation of companies.

#### **CO4CRT12. Quantitative Techniques for Business- II**

- The objective of this course is to familiarise the students with more advanced tools of data analysis and forecasting and also to have an understanding of the fundamentals of theory of probability.

#### **CO4CRT13. Entrepreneurship Development and Project Management**

- To develop entrepreneurial spirit among students.
- To empower students with sufficient knowledge to start up their venture with confidence.
- To mould young minds to take up challenges and become employer than seeking employment.
- To make them aware of the opportunities and support for entrepreneurship in India.

### Optional Course

#### **CO4OCT01. Financial Services**

- To provide the students with an overall idea of financial services available in the country and to create an understanding about recent trends in financial services sector.

## **Semester 5**

### Core Course

#### **CO5CRT14. Cost Accounting – 1**

- To familiarise the students with cost concepts and to make the students learn the Fundamentals of cost accounting as a separate system of accounting.

#### **CO5CRT15. Environment Management and Human Rights**

- To give the students an understanding of natural resources and ecosystems.
- To create awareness among students about the importance of biodiversity and its conservation.
- To familiarise students with human rights.
- To examine the application of Human rights in the field.

#### **CO5CRT16. Financial Management**

- To familiarise the students with the functional areas and principles of financial management.

### Optional Course

#### **CO5OCT01. Income Tax- I**

- To familiarise the students with Income Tax Act 1961 and to enable the students to compute Income taxable under the first three heads of Income.



Open Course

**CO5OP03. Fundamentals of Banking and Insurance**

- To familiarize the students with the basic concepts and practice of banking and the principles of Insurance

**Semester 6**

Core Course

**CO6CRT17. Cost Accounting – 2**

- To acquaint the students with different methods and techniques of costing. and to enable the students to identify the methods and techniques applicable for different types of industries.

**CO6CRT18. Advertisement and Sales Management**

- To make the students aware of the strategy, concept and methods of advertising and sales promotion.

**CO6CRT19. Auditing and Assurance**

- To familiarise the students with the principles and procedure of auditing
- To enable the students to understand the duties and responsibilities of auditors and to undertake the work of auditing.

**CO6CRT20. Management Accounting**

- To acquaint the students with management accounting techniques for the analysis and interpretation of financial statements and to study the basic framework of financial reporting.

Optional Course

**CO6OCT01. Income Tax- II**

- To have an understanding of determination of Total Income and tax payable and to get an overview regarding returns to be filed by an individual and also assessment procedure

Core Course

**CO6PR01. Project and Viva**

# DEPARTMENT OF HINDI

## THE COCHIN COLLEGE

### COMMON COURSE HINDI

#### AIM

The courses aim to provide the learner in-depth knowledge of Hindi language and literature. The language skills and literary know how will enhance their knowledge. The literary sensibility of the students will improve through grammatical study of Hindi and by giving an insight of the origin and development of literature through the ages. It will also motivate the student to acquire proficiency in the National language and official language, Hindi, ideal for everyday life.

#### COURSE OUTCOME

1. To enable the students to learn Hindi language for effective communication.
2. To familiarize the learners with practical use of grammar.
3. To create awareness regarding culture and social responsibility.
4. To create interest in students towards appreciation of literature and thereby develop their aesthetic sense.
5. To develop the art of translation.
6. To make the learner competent in the use of Hindi as the official language.
7. To develop competency in practical implementation of functional Hindi in the fields of Administration, Science and Technology.
8. To equip the students to become competent professionals in fields of Media, Translation, Correspondence, Language teaching, Administration etc.
9. To make the students aware about the environment, Human rights, and gender issues.

## ADDITIONAL LANGUAGE- MALAYALAM

### COURSE OUT COME

1. To develop keen interest in Malayalam literature and its cultural background.
2. To identify the multifarious possibilities of the culture of Kerala.
3. To appreciate the principles of aesthetics .
4. To familiarise the basic tenets of modern language theories.
5. To create awareness on the past and present of Malayalam literary criticism.
6. To delineate the nuances of audio, visual and print media.
7. To evaluate the socio- cultural growth and development of the art forms of Kerala.
8. To discern the theoretical premises of historiography.

## COURSE OUTCOME (ADDITIONAL LANGUAGE -FRENCH)

- 1.The course aims at providing the students a basic understanding of the French language and to develop their verbal and written skills for effective communication.
2. To strengthen the student's competency in the four skills: listening,speaking,reading and writing, focusing on written comprehension and expression which would eventually enable them to take the DELF/DALF tests.
- 3.To create an awareness of similarities and differences between the home and French culture.
4. Familiarize them to the social and cultural environment of Europe, France and other French speaking countries.
5. Acquire basic skills in verbal and written French which will serve to improve job perspectives.

## **REPORT OF THE EXPERT COMMITTEE FOR FRENCH (UG)**

**Choice based course – Credit- semester  
System and Grading  
2017 admissions onwards**

**SCHEME AND SYLLABI  
for  
COMMON COURSE  
for  
BA, B.Sc & B.Com**

**in  
FRENCH**

**Mahatma Gandhi University  
KOTTAYAM**

**CONTENTS**

<b>1. BOARD OF STUDIES</b>	<b>1</b>
<b>2. ACKNOWLEDGEMENT</b>	<b>2</b>
<b>3. INTRODUCTION</b>	<b>3</b>
<b>4. AIM AND OBJECTIVES</b>	<b>4</b>
<b>5. CONSOLIDATED SCHEME</b>	<b>5-6</b>
<b>6. EVALUATION OF INTERNAL ASSESSMENT</b>	<b>6-7</b>
<b>7. PATTERN OF QUESTIONS</b>	<b>7</b>
<b>8. SYLLABUS</b>	<b>8-21</b>
<b>9. MODEL QUESTION PAPERS FOR ALL SEMESTERS</b>	<b>21-57</b>

## **BOARD OF STUDIES IN FRENCH**

### **Chairperson**

Mrs Sabeena Bhaskar  
Associate Professor in French,  
St Teresa's College, Ernakulam.

### **Board Members**

- Ms.Shoba Liza John,  
Assistant Professor in French,  
Sacred Heart College, Thevara.
  
- Ms.Janu.V.Kumar,  
Assistant Professor in French,  
The Cochin College, Cochin

## **ACKNOWLEDGEMENT**

I acknowledge that without the valuable help, guidance and co-operation I have received from various quarters, I would not have been able to function smoothly.

The guidance of Dr. Ansy Sebastian, Associate Professor in French, Retired from The Cochin College helped to give shape to the overall structure. I wish to express my sincere thanks to my board of studies members Ms. Shoba Liza John, Assistant Professor, Department of French, Sacred Heart College, Thevara and Ms. Janu.V.Kumar, Assistant Professor, Department of French, The Cochin College, Cochin for their selfless and timely service and for giving me all the help and guidance needed. I also acknowledge my thanks to Ms. Adila Alfred, and Ms. Jennifer D'silva, Assistant Professor, Department of French, St. Teresa's College, Ernakulam for their valuable suggestions in designing the syllabus. I express my gratitude to everyone who has helped me in this venture and making it fruitful.

**Sabeena Bhaskar**  
**Associate Professor & Head,**  
Department of French  
St. Teresa's College,  
Ernakulam.

## **INTRODUCTION**

French is one of the leading languages of Europe and the world. More than 200 million people speak

French in five continents. It is an official language of many of the world's organizations such as the United Nations, NATO, UNESCO, the International Red Cross Association, and numerous other international committees and organizations. French is a great step towards building a world-class education that can open many doors in employment in a variety of occupations such as Teaching, Interpreting and Translation, the Travel industry, and many more. Learning the importance of French can even help you understand your own language better!

French is the language of culture opening your door to art, music, dance, fashion, cuisine, and cinema. Learning French is the pleasure of learning a beautiful, rich, melodious language, often called the language of love. French is also an analytical language that structures thought and develops critical thinking, which is a valuable skill for discussions and negotiations.

The French Department's overarching learning goal is to give students the linguistic competency, cultural literacy, writing and speaking skills, and thereby providing them an additional advantage of learning a foreign language in a variety of situations both here and abroad. The course also gives an exposure to French language and culture.

## **AIM AND OBJECTIVES**



**Aim of the Course:** The course aims at strengthening the student's competency in the four skills, listening, speaking, reading and writing, already acquired focusing on written comprehension and expression.

### **Course Objectives:**

- Develop the language skills through audio-visual aids and language lab.
- Develop the reading and writing skills by introducing them to the world of books.
- Insisting the students to watch French channel TV5 and French films and thereby develop the listening skills.
- Create an awareness of similarities and differences between the home and French culture.
- Familiarise them to the social and cultural environment of Europe, France and other French speaking countries.
- Acquire basic skills in verbal and written French which will serve to improve job perspectives.

## **CONSOLIDATED SCHEME**

**Scheme of distribution of Instructional hours for Common courses – BA, B.Sc & B.Com – Additional Language - French (Model – 1)**

Semester	Code	Title of the Course	Instructional Hours	Credits	Total Hrs
1	FR1CCT01	French Language & Communicative Skills - I	4	4	72
2	FR2CCT02	French Language & Communicative Skills - II	4	4	72
3	FR3CCT03	An Advanced Course in French – I	5	4	90
4	FR4CCT04	An Advanced Course in French – II	5	4	90
1	FR1CCT05	French for Business Communication – I	4	4	72
2	FR2CCT06	French for Business Communication – II	4	4	72

**Scheme of distribution of Instructional hours for Common courses – BA, B.Sc & B.Com – Additional Language - French (Model – 2)**

Semester	Code	Title of the Course	Instructional Hours	Credits	Total Hrs
1	FR1CCT07	BA: Communicative Skills in French for Arts - I	5	4	90
2	FR2CCT08	BA: Communicative Skills in French for Arts - II	5	4	90
1	FR1CCT09	B.Sc.: Communicative Skills in French for Science - I	5	4	90
2	FR2CCT10	B.Sc.: Communicative Skills in French for Science - II	5	4	90
1	FR1CCT11	B.Com: Business Communicative Skills in French - I	5	4	90

2	FR2CCT12	B.Com: Business Communicative Skills in French - II	5	4	90
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## EVALUATION

The evaluation of each course shall contain two parts – Internal Assessment and External Assessment. The Internal and External Assessments shall be made using a Mark- based Grading system based on a 10 point scale. Overall Internal: External ratio will be maintained as 20:80.

### INTERNAL ASSESSMENT

The Internal evaluation is to be done by continuous assessment of the following components. The components of the evaluation for theory and their marks are as below.

#### I. **Distribution of internal marks:**

- Attendance- 5 marks
- Assignment- 5 marks
- Test paper- 10 marks

**Total -20marks**

#### II. **Attendance Evaluation**

A student should have a minimum of 75% attendance. Those who do not have the minimum requirement for attendance will not be allowed to appear for the Final Examinations.

### EXTERNAL ASSESSMENT

The final examination of all semesters shall be conducted by the close of each semester. For reappearance/ improvement, students may appear along with the next batch.

## **Pattern of Questions**

The pattern of questions are listed below.

1. The duration of examination is 3 hours.
2. Each question paper has four parts A, B, C & D.
3. Part A contains 12 short answer type questions of which the candidate has to answer 9 questions. Each question carries 2 marks.
4. Part B contains 9 paragraph type questions of which the student has to answer 6 questions. Each question carries 4 marks.
5. Part C contains 5 problem type questions / short essays spanning the entire syllabus and the candidate has to answer 3 questions. Each question carries 6 marks.
6. Part D contains 4 essay type questions spanning the entire syllabus and the candidate has to answer 2 questions. Each question carries 10 marks.
7. The total marks for external examination are 80.

## **Model I 2017 Admissions**

### **BA, B.Sc/B.Com**

#### **SYLLABUS**

**Syllabi – Additional Language (B.A./B.Sc & B.Com) Model -1**

### **Semester 1**

**COURSE 1: FRENCH LANGUAGE AND COMMUNICATIVE SKILLS -I**

**Course Code** : FR1CCT01

**Name of the Course:** French Language and Communicative Skills - I

**Duration** : One Semester

**Total Lecture Hours:** 72

**Aim of the course:** This course aims at introducing the basics of French language and grammar to the students.

**Course Objectives:** This course helps the students to develop the four language skills at the initial level. It covers the fundamentals of French language, such as French alphabets and phonetics, essential grammar and simple vocabulary.

**Syllabus Content:**

**Module 1 Basics of pronunciation, grammar, lexical items, discourse, models – oral and written.**

**Module 2 Communication skills in everyday situations.**

**Module 3 Competency in dealing with specific situations.**

**Module 4 Training in creative writing.**

**Syllabus:**

Text- Champion 1 by Annie Monnerie – Goarin, Evelyne Sirejole.

Publishers: CLE International. Copies available at Goyal Publishers, Delhi.

Note: Use of the audio cassettes is strongly recommended.

**First Semester BA/B.Sc French Examination 2017**

**French language and Communicative Skills-I**

Text: 1. Champion: Units 1-4 (Pages 3 – 43) – Annie Monnerie – Goarin, Evelyne Sirejols, CLE International 2001, Paris.

2. Two audio cassettes, CLE International

## Semester 2

### COURSE 2: FRENCH LANGUAGE AND COMMUNICATIVE SKILLS -II

**Course Code** : FR2CCT02

**Name of the Course:** French Language and Communicative Skills - II

**Duration** : One Semester

**Total Lecture Hours:** 72

**Aim of the course:** This course aims at introducing the basics of French language and grammar to the students.

**Course Objectives:** This course helps the students to develop the four language skills at the initial level. It covers the fundamentals of French language, such as French alphabets and phonetics, essential grammar and simple vocabulary.

#### **Syllabus Content:**

**Module 1 On va au cinéma**

**Module 2 Partir**

**Module 3 Achats**

**Module 4 Au restaurant**

Syllabus:

Text- Champion 1 by Annie Monnerie – Goarin, Evelyne Sirejole.

Publishers: CLE International. Copies available at Goyal Publishers, Delhi.

Note: Use of the audio cassettes is strongly recommended.

### **Second Semester BA/B.Sc French Examination 2018**

French language and Communicative Skills-II

Text: 1. Champion: Units 5-8 (Pages 44 – 73) – Annie Monnerie – Goarin, Evelyne Sirejols, CLE International 2001, Paris.

2. Two audio cassettes, CLE International

## Semester 3

### COURSE 1: AN ADVANCED COURSE IN FRENCH - I

**Course Code** : FR3CCT03

**Name of the Course:** An Advanced Course in French - I

**Duration** : One Semester

**Total Lecture Hours:** 90

**Aim of the course:** This course aims at developing the student's language proficiency at a higher level by building on the skills acquired at the previous level.

**Course Objectives:** This course is comprised of important grammatical topics such as syntax and morphology to facilitate oral and written expression and comprehension of the French language.

**Syllabus Content:**

**Module 1 J'ai oublié mon sac**

**Module 2 Visite guidée à Paris**

**Module 3 Louer une voiture**

**Module 4 Quelles vacances!**

Syllabus:

Text- Champion 1 by Annie Monnerie – Goarin, Evelyne Sirejole.

Publishers: CLE International. Copies available at Goyal Publishers, Delhi.

Note: Use of the audio cassettes is strongly recommended.

### Third Semester BA/B.Sc French Examination 2018

An Advanced Course in French - I

Text: 1. Champion: Units 9-12(Pages 74 – 101) – Annie Monnerie – Goarin, Evelyne Sirejols, CLE International 2001, Paris.

2. Two audio cassettes, CLE International

## Semester 4

### COURSE 2: AN ADVANCED COURSE IN FRENCH - II

**Course Code** : FR4CCT04

**Name of the Course:** An Advanced Course in French - II

**Duration** : One Semester

**Total Lecture Hours:** 90

**Aim of the course:** It aims at strengthening the student's competency in the four skills already acquired, focusing on written comprehension and expression.

**Course Objectives:** This course is comprised of important grammatical topics such as syntax and morphology to facilitate oral and written expression and comprehension of the French language.

**Syllabus Content:**

**Module 1 Au club de gymnastique**

**Module 2 Chez le médecin**

**Module 3 Trouver un emploi**

**Module 4 Discussion au café**

Syllabus:

Text- Champion 1 by Annie Monnerie – Goarin, Evelyne Sirejole.

Publishers: CLE International. Copies available at Goyal Publishers, Delhi.

Note: Use of the audio cassettes is strongly recommended.

**Fourth Semester BA/B.Sc French Examination 2019**



An Advanced Course in French - II

Text: 1. Champion: Units 13-16 (Pages 104 –129) – Annie Monnerie – Goarin, Evelyne Sirejols, CLE International 2001, Paris.

2. Two audio cassettes, CLE International

## **Syllabus for B.Com**

### **Semester 1**

#### **COURSE 1: FRENCH FOR BUSINESS COMMUNICATION -I**

**Course Code** : FR1CCT05

**Name of the Course:** French For Business Communication -I

**Duration** : One Semester

**Total Lecture Hours:** 72

**Aim of the course:** The aim of the course is to sensitise the students to the French commercial vocabulary.

**Course Objectives:** It is centred on business contacts, business etiquette, office environment, preparation of CV, official letters.

**Syllabus Content:**

**Module 1 Premiers mots, Bonjour, je m'appelle..., Ça va, et vous?**

**Module 2 Vous travaillez où?, Adresse, telephone, e-mail, Objets utiles**

**Module 3 Avoir ou ne pas avoir, Objets ici et là**

**Module 4 Objets comme ça, Qu'est-ce que vous préférez?**

**Syllabus:**

Text: 1. Français.com – by Jean – Luc Penfornis

Publisher: CLE International, 2007, Paris, Copies available at Goyal Publishers, Delhi.

2. Two audio cassettes, CLE International

## **First semester B. Com French examination 2017**

French for business Communication – I

**Text:** Français.com by Jean-Luc Penfornis, Units 1&2 (Pages 3 – 40) CLE International 2007, Paris

## **Semester 2**

### **COURSE 2: FRENCH FOR BUSINESS COMMUNICATION -II**

**Course Code** : FR2CCT06

**Name of the Course:** French for Business Communication -II

**Duration** : One Semester

**Total Lecture Hours:** 72

**Aim of the course:** The aim of the course is to sensitise the students to the French commercial vocabulary.

**Course Objectives:** It is centred on business contacts, business etiquette, office environment, preparation of CV, official letters.

**Syllabus Content:**

**Module 1** Quelle heure est-il ?, Journée de travail, Habitudes

**Module 2** Mois et saisons, Rendez-vous, A l'hôtel

**Module 3** Itinéraires, Déplacements professionnels

**Module 4** Conseils au voyageur, Prendre le train

**Syllabus:**

Text: 1. Française.com – by Jean – Luc Penfornis

Publisher: CLE International, 2007, Paris, Copies available at Goyal Publishers, Delhi.

2. Two audio cassettes, CLE International

**Second semester B. Com French examination 2018**

French for Business Communication – II

**Text:** Français.com by Jean-Luc Penfornis, Units 3&4 (Pages 41 – 72) CLE International 2007, Paris

## **Model II 2017 Admissions**

### **BA, B.Sc/B.Com**

#### **French syllabus and scheme for 2017 admissions- Model –II COMMON COURSE – 06**

##### **SEMESTER 1**

##### **COMMUNICATIVE SKILLS IN FRENCH FOR SCIENCE I**

**Course Code** : FR1CCT09

**Name of the Course:** COMMUNICATIVE SKILLS IN FRENCH FOR SCIENCE I

**Duration** : One Semester

**Total Lecture Hours:** 90

Aim of the Course

To give the students a basic understanding of the French Language, and to develop their verbal and written skills for effective communication.

<p>Course Objective</p> <ol style="list-style-type: none"> <li>1. To enable the student to study a modern foreign language, right from the basics.</li> <li>2. To provide basic communicative skills to the student to cope with everyday situations.</li> <li>3. To enable the student to write simple structures in French.</li> <li>4. To develop systematically, oral, written and comprehensive skills so as to enable the student to take eventually the DELF/DALF examinations.</li> </ol>
<p>Course Outline – 2 Modules (Credits-4)</p> <ol style="list-style-type: none"> <li>1. Module 1 – Basics of pronunciation, grammar, lexical items, discourse models-oral and written.</li> <li>2. Module 2- Communicative skills in everyday situations.</li> </ol> <p>Syllabus: Text- 1. Le Nouveau Sans Frontières Publishers: CLE International, 2003Paris. Copies available at Goyal Publishers, Delhi.</p> <p><b>First semester B.Sc French examination 2017</b></p> <p>Communicative Skills In French For Science-I Text: 1. Le Nouveau Sans Frontière: Unit 1 (Lessons 1 to 5 and Bilan )– CLE International 2003, Paris.</p>

## SEMESTER II

### COMMUNICATIVE SKILLS IN FRENCH FOR SCIENCE II

**Course Code** : FR2CCT10

**Name of the Course:** COMMUNICATIVE SKILLS IN FRENCH FOR SCIENCE II

**Duration** : One Semester

**Total Lecture Hours:** 90

<p style="text-align: center;">Aim of the Course</p> <p>To give the students a basic understanding of the French Language, and to develop their verbal and written skills for effective communication</p>
<p style="text-align: center;">Course Objective</p>

1. To enable the student to study a modern foreign language, right from the basics.
2. To provide basic communicative skills to the student to cope with everyday situations.
3. To enable the student to write simple structures in French.

To develop systematically, oral, written and comprehensive skills so as to enable the student to take eventually the DELF/DALF examinations

Course Outline – 2 Modules (Credits-4)

1. Module 1 – Basics of pronunciation, grammar, lexical items, discourse models-oral and written.
2. Module 2- Communicative skills in everyday situations.

Syllabus: Text- 1. Le Nouveau Sans Frontières

Publishers: CLE International, 2003Paris. Copies available at Goyal Publishers, Delhi.

## **Second semester B.Sc French examination 2018**

Communicative Skills In French For Science-II

Text: 1. Le Nouveau Sans Frontière: Unit 2 (Lessons 1 to 5 and Bilan ) – CLE International 2003, Paris.

## **B.COM –FRENCH**

### **SEMESTER I**

#### **BUSINESS COMMUNICATIVE SKILLS IN FRENCH - I**

**Course Code** : FR1CCT11

**Name of the Course:** Business Communicative Skills in French - I

**Duration** : One Semester

**Total Lecture Hours:** 90

**Aim:** To provide the student with the basics of a modern foreign language having great relevance in the commercial, hospitality and tourism sectors. In the context, the acquisition of basic skills in verbal and written French will serve to improve job perspectives for the keen and ambitious student, while earning for himself international acceptance.

**Objectives:**

1. To enable the student to acquire basic communicative skills in French to be of use to him in the business sphere.
2. To equip the student to meet the challenges of the international market.

### **Course Outline – 2 Modules**

Module 1: French pronunciation, grammar, lexical items, discourse models-oral and written.

Module 2: Communication skills for everyday situations as well as for business purposes.

#### **Syllabus:**

Text: 1. LE FRANÇAIS À GRANDE VITESSE –

Publisher: Hachette Livre, 1994, Paris, Copies available at Goyal Publishers, Delhi.

2. Audio cassettes

### **First semester B. Com French examination 2017**

Business communicative skills in French – I

**Text:** A Grande Vitesse , Units 1to 7 (Pages 9 – 76 ) Hachette livre,1994,Paris

## **SECOND SEMESTER**

### **BUSINESS COMMUNICATIVE SKILLS IN FRENCH - II**

**Course Code** : FR2CCT12

**Name of the Course:** Business Communicative Skills in French - II

**Duration** : One Semester

**Total Lecture Hours:** 90

**Aim:** To provide the student with the basics of a modern foreign language having great relevance in the commercial, hospitality and tourism sectors. In the context, the acquisition of basic skills in verbal and written French will serve to improve job perspectives for the keen and ambitious student, while earning for himself international acceptance.

#### **Objectives:**

1. To enable the student to acquire basic communicative skills in French to be of use to him in the business sphere.
2. To equip the student to meet the challenges of the international market.

### **Course Outline – 2 Modules**

Module 1: French pronunciation, grammar, lexical items, discourse models-oral and written.

Module 2: Communication skills for everyday situations as well as for business purposes.

**Syllabus:**

Text: 1. LE FRANÇAIS À GRANDE VITESSE –

Publisher: Hachette Livre, 1994, Paris, Copies available at Goyal Publishers, Delhi.

2. Audio cassettes

**Second semester B. Com French examination 2018**

Business communicative skills in French – II

**Text:** A Grande Vitesse, Units 8 to 14 (Pages 77 – 141) Hachette livre, 1994, Paris

## COURSE OUTCOMES

### Vocational Course – Plant Biotechnology

#### **SEMESTER I**

**Course Name : Vocational Course-1 Introduction to Biotechnology**

**Course Code : BO1VO4T01**

<b>Sl.No</b>	<b>Course Outcome</b>
1	Students should describe the field of biotechnology.
2	Learners should explain various principles and practices in biotechnology.
3	Students will Identify various fields of Biotechnology
4	Students will Illustrate different applications of Biotechnology

**Course Name : Vocational Course-2 Microbiology**

**Course Code : BO1VO4T02**

<b>Sl.No</b>	<b>Course Outcome</b>
1	Learners should give a definition on Microbiology
2	Students will recall various contributions by famous scientists in the field of Microbiology
3	Students will be able to compare different groups of microorganisms
4	Students will be able to explain cellular structure and reproduction in various microorganisms
5	Students should identify and explain the working principle and uses of common instruments used in a microbiology laboratory
6	Learners should be able to explain various laboratory operations in the field of microbiology

#### **SEMESTER II**

**Course Name : Vocational Course-3 Molecular Biology**

**Course Code : BO1VO4T03**

<b>Sl.No</b>	<b>Course Outcome</b>
1	Learners should be able to explain the structure and function of DNA molecule inside a cell
2	Students will demonstrate basic concepts of gene, genome and chromosome
3	Learners will Illustrate various aspects of gene expression
4	Students should explain molecular biology of cancer



**Course Name : Vocational Course-4 Fundamentals of Enzymology and Radiobiology**

**Course Code : BO1VO4T04**

Sl.No	Course Outcome
1	Students should explain concepts of properties of water, pH and solutions
2	Learners will be able to discuss various methods of measuring pH and pH meters
3	Students need to compare and explain various groups of enzymes and their properties
4	Students should be able to explain basic aspects on enzyme kinetics and enzyme inhibition, as well as their applications in genetic engineering, molecular biology and medicine.
5	Learners should discuss various applications of common radioactive isotopes used in Biology and medicine
6	Learners should be able to explain various laboratory operations in the field of Biochemistry and Enzymology

### **SEMESTER III**

**Course Name : Vocational Course-5 Biotechniques and Instrumentation**

**Course Code : BO1VO4T05**

Sl.No	Course Outcome
1	Students will be able to identify and describe various techniques used in the field of Biotechnology
2	Learners should explain the principles of various techniques used in Biotechnology
3	Students are able to discuss the applications of different techniques
4	Students will be able to demonstrate various techniques in the field of biotechnology

**Course Name : Vocational Course-6 Basics of Molecular Cloning Techniques**

**Course Code : BO1VO4T06**

Sl.No	Course Outcome
1	Learners will be able to identify and list out various tools used for molecular cloning
2	Students need to explain different types of vectors and modifying enzymes used in genetic engineering and molecular cloning
2	Students will be able to discuss various molecular probes and nucleic acid hybridization assays used for identifying a cloned gene
3	Learners should explain various methods of DNA sequencing and their significance
4	Students will be able to explain and discuss principle, methodology, types and applications of Polymerase Chain Reaction (PCR)

**SEMESTER IV****Course Name : Vocational Course-7 Genetic Engineering****Course Code : BO1VO4T07**

<b>Sl.No</b>	<b>Course Outcome</b>
1	Students need to outline various aspects of genetic engineering
2	Students will be able to explain various gene cloning strategies
3	Students should discuss the methods and applications of genetic transformation in plants
4	Learners will be able to explain genetically modified crops and their applications
5	Students will be able to illustrate various aspects of gene libraries
6	Learners should identify and discuss drawbacks of recombinant DNA technology

**Course Name : Vocational Course-8 Plant Tissue Culture****Course Code : BO1VO4T08**

<b>Sl.No</b>	<b>Course Outcome</b>
1	Students should describe basic concepts of plant tissue culture along with brief history of its development as a branch of biotechnology.
2	Learners will be able to list out various facilities required for plant tissue culture and explain various methods of sterilization and culture media.
3	Students will be able to explain various methods used for sterilization and different growth regulators used in plant tissue culture
4	Learners should explain the importance and significance of various culture techniques in plant tissue culture
5	Students will be able to discuss application of plant tissue culture in various fields and role in the industrial production of secondary metabolites
6	Students will be able to demonstrate various tissue culture techniques

## **OUTCOMES OF BIOCHEMISTRY**

- Biochemistry has broadened our understanding of how biochemical changes relate to physiological alteration in the body.
- To learn regulation of chemical reactions in living cells.
- To understand metabolism well enough to predict and control changes that occur in cells.
- To learn the structure of biomolecules, and how they interact in essential processes and pathways in our cells.
- To study the actions of enzymes, and how they can be inhibited by drugs, as well as genetic engineering and molecular biology.
- To know the applications of biochemistry in various areas, including medicine, dentistry, industry, and agriculture and food science

## COURSE OUTCOME

### COMPLEMENTARY COURSE HISTORY

The meaning and purpose of an undergraduate history programme should be to cultivate an appreciation and understanding among students for the various historical processes that have gone into the making of societies, cultures and civilizations. It should prod students to not take ideas, institutions and practices as given, but as aspects that have evolved over a period of time across different spatial contexts, and continue to be engaged in the process of becoming. Most importantly, an undergraduate history programme should take students beyond the mundane textbook oriented history that is so prevalent in our times, which reduces history to certain disembodied facts that need to be memorized and regurgitated, and introduce them to the exciting ways in which a historian practices his/her craft using highly developed tools and skills, and produces history.

The course intends to give the students a general idea on the origins of the modern world and the force and course of various developments in different parts of the world.

Department : Mathematics(Subsidiary)

- 1) Students can aware of basic concepts of Mathematics
- 2) Students can familiarise with foreign text books
- 3) Students can correlate mathematical technique to other subjects
- 4) Through mathematical class rooms students can actively participate in the class room learning
- 5) It covers almost all the areas of basic mathematics
- 6) Students can aware of different branches of mathematics



## DEPARTMENT OF PHYSICAL EDUCATION

### COURSE OUTCOME

1. The course creates consciousness among the students towards health, fitness and wellness and in developing and maintaining a healthy life style.
2. The course is intended to familiarize the students towards the concepts of health and physical education and the relative contribution of physical education and sports for the life skills development.
3. It also provides awareness about the scientific basis and benefits of physical activity, health, nutrition and first aid measures, fundamentals of health and physical fitness.
4. It also helps students to lead a healthy lifestyle and acquire basic knowledge about various sports and games and their influence in the society.

THE COCHIN COLLEGE  
DEPARTMENT OF ENGLISH (SELF FINANCING)

Programme Outcome –Bcom CA,Bcom Tax,Bsc Maths,BBA,BCA

The programme introduces the students to the essence and aesthetics of English Literature and improves their language skills. The courses serve to familiarize the students with different forms of literatures. Discussion of diverse literary forms enables the students to become active readers of literature with well-defined perspectives. The course is framed to guide the students to develop social commitment and an inclusive world view. The study aims at introducing the student to the tremendous scope English language plays today with special emphasis on career opportunities. The learners are exposed to the concepts of nationalism, secularism, democracy and love of nature through literary works. The programme is designed keeping in mind the changing demands of the job market. It also helps the students to refine their communicative skills by providing special focus to improving their grammar, listening and writing skills.

Programme Specific Outcome

- To enhance LSWR skills so that students may effectively communicate in the English language
- To sensitize the learners about contemporary issues of concern; to enhance their linguistic skills in English language.
- The course is intended to sensitize students to the various ways in which literature serves as a platform for forming, consolidating, critiquing and re-working the issue of identity at various levels.
- Introduce students to the different forms of inspiring and motivating literature.
- Introduce students to different genres of literature and the niceties of literary expression
- Introduce the students to the time tested world classics

Course Outcome

- **Fine-tune Your English (EN1CCT01 )**= The course aims at training students in the usage of English Language in various contexts and enabling them to communicate effectively in English . To re-introduce students to the basics of English grammar and to speak English confidently and effectively and to introduce basics of English grammar.
- **Issues that Matter (EN2CCT03)** = The course seeks to enable the students to grow into responsible citizens taking pride in the secular and democratic traditions

help them to fight against the of the country. This course would inculcate a cosmopolitan outlook in the students and will divisive forces in the society. Moreover, it will make the students aware of the consequences of the mindless exploitation of nature.

- **Literature and/as Identity (EN3CCT05)** = The course is an introduction to the patterns and negotiations of identity formation – from diasporic to regional and alter identity and how identity is constructed in literature. Become familiar with the subtle negotiations of Indigenous and Diasporic identities with-in Literature . Understand the fissures, the tensions and the interstices present in South Asian regional identities . Learn about the emergence of Life Writing and alternate/alternative/marginal identities and to become familiar with the subtle negotiations of Indigenous and Diasporic identities with-in Literature . Understand the fissures, the tensions and the interstices present in South Asian regional identities .
- **Illuminations (EN4CCT06)** =It introduce students to various kinds of literature and to provide an understanding of world literature and to gain multiple perspectives of life from the viewpoint of great minds and the student shall be able to maintain a positive attitude to life and evaluate and overcome setbacks based on the insights that these texts provide.
- **Gems of Imagination (EN3CCT07)** = Discover the joy of reading literature and get exposed to different genres of literature . Appreciate the aesthetic value of literature . Sensitize learners to the cultural and social aspects of literature . Improve the learners' use of language as a means of subjective expression.
- **Revisiting the Classics (EN4CCT08)** = This paper presents the time-tested classics from diverse cultures, spread in four modules it portrays the 'universals' of human condition.



## DEPARTMENT OF ELECTRONICS

### Programme Outcome:

1. Read, understand and interpret physical information – verbal, mathematical and graphical.
2. Impart skills required to gather information from resources and use them.
3. To give need based education in physics of the highest quality at the undergraduate level.
4. Offer courses to the choice of the students.
5. Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties.
6. Provide an intellectually stimulating environment to develop skills and enthusiasms of students to the best of their potential.
7. Use Information Communication Technology to gather knowledge at will.
8. Attract outstanding students from all backgrounds.

### Course Outcome:

1. To provide in depth knowledge of scientific and technological aspects of Electronics
2. To familiarize with current and recent technological developments
3. To enrich knowledge through programmes such as project lab and seminars
4. To train students in skills related to electronics industry and market.
5. To create foundation for research and development in Electronics
6. To develop analytical abilities towards real world problems
7. To help students build-up a progressive and successful career in Electronics
8. To produce electronic professionals who can be directly employed or start his/her own work as Electronic circuit Designer, Electronics consultant, testing professional, Service engineer and even an entrepreneur in electronic industry.
9. To train students to a level where they can readily compete for seats for advanced degree courses like MSc (Electronics) and other related disciplines.

## PROGRAMME OUTCOME

- മാതൃഭാഷയെ കുറിച്ച് ആത്മാഭിമാനം വിദ്യാർത്ഥികളിൽ ഉളവാക്കുന്നു.
- ജീവിത ദർശനവും മൂല്യബോധവും സ്വരൂപിക്കുന്നു.
- സാമാന്യമായ പരിചയവും വായനഭിരുചിയും കാഴ്ചപ്പാടുകളും സൃഷ്ടിക്കുന്നു.
- സർഗ്ഗാത്മക ശേഷിയും ആസ്വാദന ശേഷിയും പോഷിപ്പിക്കുന്നു.
- രചനശേഷിയെ പോഷിപ്പിക്കുന്നു.

## PROGRAMME SPECIFIC OUTCOME

- സാഹിത്യ പഠനത്തെ കുറിച്ച് ബോധ്യപ്പെടുത്തുന്നു.
- കവിതാസ്വാദനപാടവം വളർത്തുന്നു.
- കവിതയിലെ ഭാവുകത്വ പരിണാമം മനസിലാക്കുക.
- അനുഭവം, കരുത്തുത്പാദനം, സർഗ്ഗാത്മകത എന്നിവ കവിതയിൽ കടന്നു വരുന്നത് എങ്ങനെയെന്ന് മനസ്സിലാക്കുന്നു.
- വ്യവഹാര ഭാഷയിൽ മാതൃഭാഷ ഉപയോഗിക്കുന്നതിനുള്ള കഴിവ്.
- വർഗ്ഗപരമായ പ്രതിനിധാനങ്ങൾ (ലൈംഗികത, കീഴാളത്വം ) കവിതയിൽ ആഖ്യാനം ചെയ്യപ്പെടുന്നത് മനസിലാക്കുന്നു.

## COURSE OUTCOME

- കവിതാഭിരുചി വളർത്തുന്നു.
- ഗദ്യ സാഹിത്യത്തിൽ വരുന്ന ചരിത്രവും സാംസ്കാരികവുമായ മാറ്റങ്ങൾ മനസ്സിലാക്കുക.
- ആധുനികാനന്തര സാഹിത്യ സമീപനങ്ങൾ തിരിച്ചറിയുന്നു.
- മലിനീകരണ പ്രശ്നങ്ങളും പരിസ്ഥിതി ശാസ്ത്രത്തെയും കുറിച്ച് ബോധം ആർജ്ജിക്കുന്നു.
- ജാതി വിരുദ്ധ പ്രക്ഷോഭങ്ങളെ കുറിച്ചുള്ള അറിവ്.
- ആധുനിക ഗദ്യം, ശാസ്ത്രം തുടങ്ങിയവയും വളർച്ച മനസിലാക്കുന്നു.
- സമൂഹവും സാഹിത്യവും തമ്മിലുള്ള ബന്ധം തിരിച്ചറിയുന്നു.

- സാഹിത്യകാരിയെ കൃതികളെ മുൻനിർത്തി മനസിലാകുന്നു.
- ആഖ്യാന രീതികൾ, അനുഭവ കർതൃത്വത്തിന്റെ ഭിന്നവഴികൾ തുടങ്ങിയവ മനസിലാകുന്നു.
- സാമാന്യമായ സാഹിത്യ പരിചയവും വായനഭിരുചിയും വളർത്തിയെടുക്കുക.
- കാലഘട്ടത്തിന്റെ പൊതു പ്രവണതകളെ തിരിച്ചറിയുന്നു.
- മലയാള ഗദ്യത്തിന്റെ ശക്തിയും സാധ്യതയും മനസിലാകുന്നു.
- അനുഭവം, ആത്മകഥ എന്നീ മേഖലകളെ കുറിച്ച് അവബോധം നേടുന്നു.
- യാത്ര വിവരണങ്ങളുടെ പ്രധാന്യം മനസിലാകുന്നു.
- കാവ്യആസ്വാദന ശേഷി വളർത്തുന്നു.
- പരിസ്ഥിതി, ദളിത്, സ്ത്രീ, ന്യൂനപക്ഷ അനുഭവങ്ങളുടെ ആവിഷ്കരണത്തിലെ ബഹുസ്വര സ്വഭാവം മനസിലാകുന്നു.