SACRED HEART COLLEGE FOR WOMEN

CHALAKUDY, THRISSUR, KERALA

AQAR 2020-21

Criterion II - Teaching Learning & Evaluation

SUB CRITERION **- 2.6.1 - Programmes and course outcomes for all the programmes offered by the institution are stated and displayed on the website and communicated to the teachers and students.**

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ECONOMICS

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MA ECONOMICS

Course Outcomes

Semester I
Course Category: Core Course - I
Paper name: MICROECONOMICS: THEORY AND APPLICATIONS-I
Code: ECO1 C01

Course Outcomes:

CO1 : To understand the function of an economy in application level of microeconomic theory
CO2: To critically evaluate the working of economy under uncertainitye.
CO3 : To analyse the operations of different markets in the economy

Semester I
Course Category: Core Course - II
Paper name: MACROECONOMICS: THEORIES AND POLICIES I
Code: ECO1 C02

Course Outcomes:

CO1 : To understand the trends in aggregate variables like national income,Employment, price level and investment.
CO2 :To explore and understand the determinants of short run fluctuations and long run movements in these variables.
CO3: To give an idea about the need for and the way in which government Intervention is required in a modern economy.
CO4 :To explain how output and employment are determined in classical and Keynesian systems. Student should also be able to explain why actual output will fall short of the Productive capacity of the economy

Semester I
Course Category: Core Course - III
Paper name: INDIAN ECONOMY: PROBLEMS AND POLICIES
Code: ECO1 C03

Course Outcomes:

CO1 : To expose the learners to some of the key issues facing the Indian economy both at national and regional levels.
CO2 :To critically assess the role of the government in various economic spheres.
CO3 :To critically evaluate numerical information relating to various aspects of Indian economy and India's economic policies.
CO4 : To develop analytical skills, interpret the economic events and visualise the economic future of India

Semester I
Course Category: Core Course - IV
Paper name: QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS I
Code: ECO1 C04

Course Outcomes:

CO1 : To Equip the students to quantify economic variables
CO2 : To enable them to apply statisticalTechniques in Economics.
CO3 :To apply statistical and mathematical techniques in Economics
CO4: To transmit quantitative methods for economic analysis for students in a broader way.

Semester II
Course Category: Core Course - V
Paper name: MICROECONOMICS: THEORY AND APPLICATIONS-II
Code: ECO2 C05

Course Outcomes:

CO1 : To introduce assymetric information arises in the economy.
CO2 : To give conceptual clarity to the student coupled with the use of the Micro economic analysis to the decision making of firms and market.
CO3 : To apply the principles of micro economics, to the decision making of firms and the functioning of the market
.

Semester II
Course Category: Core Course - VI
Paper name: MACROECONOMICS: THEORIES AND POLICIES II
Code: ECO2 C06

Course Outcomes:

CO1 : To distinguish between Classical and Keynesian system
CO2 : To critically evaluate New Classical Macroeconomics, Real Business Cycle School and Supply Side Economics
CO3 : To understand the concept of New Keynesian Economics

Semester II
Course Category: Core Course - VII
Paper name: PUBLIC FINANCE: THEORY AND PRACTICE
Code: ECO2 C07

Course Outcomes:

CO1 : To know the fuctions of fiscal federalism.
CO2 : To identify the concept of Public Expenditure and Debt
CO3 : To critically evaluate Indian Public Finance

.

Semester II
Course Category: Core Course - VIII
Paper name: QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS II
Code: ECO2 C08

Course Outcomes:

CO1 :To transmit the body of application of statistics and mathematics that Enables the study of economic theory at the Post graduate level.
CO2 : To Equip the students to quantify economic variables
CO3 : To apply Analysis of variance in Economics.
CO4: To understand the concept of Testing of Hypothesis

Semester III
Course Category: Core Course - IX
Paper name: INTERNATIONAL TRADE
Code: ECO3 C09

Course Outcomes:

CO1 : To critically evaluate developments in Trade Theories
CO2 : To critically evaluate International Trade Policies
CO3 :To analyse the operation of economic integration

Semester III
Course Category: Core Course - X
Paper name: GROWTH AND DEVELOPMENT
Code: ECO3 C10

Course Outcomes:

CO1 : To understand the concepts and measurement of growth and development.
CO2 : To aware about how our economy reach stages of development .
CO3 : To know the meaning Financing Economic Development

Semester III
Course Category: Core Course - XI
Paper name: BASIC ECONOMETRICS
Code: ECO3 C11

Course Outcomes:

CO1 : To provide a basic idea about econometrics.
CO2 : To understand the econometric models .
CO3 : To apply econometric methods to further reasearch activity.

Semester IV
Course Category: Core Course - XII
Paper name: INTERNATIONAL FINANCE
Code: ECO4 C12

Course Outcomes:

CO1 : To distinguish between BOP and BOT
CO2 : To critically evaluate the fuctioning of foriegn exchange market.
CO3 : To aware about operation of international monetary system.

Semester IV
Course Category: Core Course - XIII
Paper name: FINANCIAL MARKETS
Code: ECO4 C13

Course Outcomes:

CO1 : To critically evaluate the functioning of capital market and money market
CO2 : To identify the concept of finacial markets
CO3 : To critically evaluate the functions of Global Financial Markets

ELECTIVE COURSES

Semester IV
Course Category: Elective Course - I
Paper name: BUSINESS ECONOMICS
Code: ECO4 E02

Course Outcomes:

CO1 : To give basic idea about business economics.
CO2 : To helps the students to underatand need of demand forcasting .
CO3 : To understand the function of Pricing og goods and services.

Semester IV
Course Category: Elective Course X
Paper name: AGRICULTURAL ECONOMICS
Code: ECO4 E06

Course Outcomes:

CO1 : To understand agricultural in economic development.
CO2 : To critically evaluate the operation of agricultural marketing.
CO3 : To critically evaluate structural and institutional changes in indian agriculture.

BA ECONOMICS

Course Outcomes

CORE COURSES

Semester I

Course Category: Core Course I

Paper name: Microeconomics – I

Code: ECO1 B01

Course Outcome:

CO1	To identify the difference between Micro and Macro Economics
CO2	To analyze different concept of demand and supply in Economics
CO3	To understand the theory of consumer behaviour using ordinal and cardinal approach.
CO4	To identify the theory of production and costs in Economics

Semester II

Course Category: Core Course II

Paper name: Macroeconomics – I

Code: ECO2 B02

Course Outcome:

CO1	To understand the trends in aggregate variables like national income, employment, price level and investment
CO2	To analyze the working of an economy at the aggregate level .
CO3	To identify the need for and the way in which government intervention is required in a modern economy.
CO4	To compare how output and employment are determined in classical and Keynesian systems
CO5	To explain why actual output will fall short of the productive capacity of the economy.
CO6	To understand the importance of money in the economy
CO7	To explain the liquidity preference theory and Keynesian Liquidity Trap

Semester III

Course Category: Core Course III

Paper name: Quantitative Methods for Economic Analysis - I

Code: ECO3 B03

Course Outcome

CO1	. To understood basic concepts related to quantitative methods in economics
CO2	To inculcate quantitative skills to collect, analyse and interpret empirical data
CO3	To create the capability of data management using spread sheet
CO4	To develop skill in statistical and mathematical techniques that are required for a meaningful study of applied economics

Course Category: Core Course IV

Paper name: Microeconomics II

Code: ECO3 B04

Course Outcome:

CO1	To introduce fundamental market concepts and structures .
CO2	To apply the principles of micro economics to the decision making of firms and the functioning of the market
CO3	To understood the concept of Price Discrimination in Monopoly
CO4	To understood the concept of Product Differentiation in Monopolistic Competition
CO5	To identify the pricing and employment of outputs

Paper name: Quantitative Methods for Economic Analysis II

Code: ECO4 B05

Course Outcome:

CO1	To explain the way fiscal and monetary policy works, using the ISLM framework
CO2	To explain the concept and measurement of inflation and unemployment.
CO3	To identify the necessary ideas and tools to understand the working of an economy at the aggregate level.
CO4	To give an idea about the need for and way in which government intervention is required in a modern economy

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Course Category: Core Course VI

Paper name: Macroeconomics II

Code: ECO4 B06

Course Outcome:

CO1	To explain the way fiscal and monetary policy works, using the ISLM framework
CO2	To explain the concept and measurement of inflation and unemployment.
CO3	To identify the necessary ideas and tools to understand the working of an economy at the aggregate level.
CO4	To give an idea about the need for and way in which government intervention is required in a modern economy

Semester V

Course Category: Core Course VII

Paper name: Fiscal Economics

Code: ECO5 B07

Course Outcome:.

CO1	To understand the meaning and scope of fiscal economies
CO2	To apply the techniques, methods and principles of Economics for decision making in fiscal economics.
CO3	To understand the meaning and scope of fiscal economies
CO4	To learn how the principles of economics can be applied to sound decision making in public finance
CO5	To understand the important economic issues that government agents face

Course Category: Core Course VIII

Paper name: Indian Economic Development

Code: ECO5 B08

Course Outcome :

CO1	To understand the key issues facing the Indian economy both at national and regional levels
CO2	To develop analytical skills, interpret the economic events and visualise the economic future of India
CO3	To classify various aspects of Indian economy and India‘s economic policies
CO4	To critically assess the role of the government in various economic spheres
CO5	To critically evaluate Kerala Model Of Development

Course Category: Core Course IX

Paper name: Economics of Capital Market

Code: ECO5 B09

Course Outcome:

CO1	To understand different finacial assets in the economy
CO2	To introduce new and diversified financial instruments and financial practices
CO3	To providing a platform to the students of economics in developing the skills required to take up a career in financial sector
CO4	To understand the functioning stock market in India

Course Category: Core Course X

Paper name: Mathematical Economics

Code: ECO5 B10

Course Outcome:

CO1	To develop a good proficiency in the fundamental methods of mathematical economics
CO2	To understand marginal concepts in economics
CO3	To inculcate critical thinking, and problem-solving, empirical research and model building capabilities of the student
CO4	To critically evaluate Market Equilibrium in different markets

Semester VI

Course Category: Core Course XI

Paper name: Financial Economics

Code: ECO6 B11

Course Outcome:

CO1	To develop comprehensive knowledge on the role of finance in the operation of an economy.
CO2	To critically evaluate the Modigliani and Miller hypothesis.
CO3	To know the operation of the Indian Financial System and activities in the financial markets
CO4	To know the operation of the capital market in India
CO5	To understand concept of financial derivatives in India

Course Category: Core Course XII

Paper name: International Economics

Code: ECO6 B12

Course Outcome:

CO1	To understand the different terms related to international economics
CO2	To explain the theories of international trade
CO3	To analyze the different theories of commercial policies.
CO4	To acquire skills related to interpret functioning of foriegn exchange
CO5	To distinguish between BOT and BOP

Course Category: Core Course XIII

Paper name: Development of Economic Thought

Code: ECO6 B13

Course Outcome :

CO1	To understand historical evolution of economic thought.
CO2	To critically evaluate the contribution of british political economist
CO3	To critically evaluate the concept of socialism
CO4	To critically evaluate the contribution of Indian economic thought

Course Category: Core Course XIV

Paper name: Economics of Growth and Development

Code: ECO6 B14

Course Outcome:

CO1	To undestand the concept of development and underdevelopment
CO2	To provide the theoretical framework for growth and development
CO3	To analyze the factors affecting the long run economic growth, both from a positive and negative sense
CO4	To use theories of growth and development to analyze the problems of the developing world
CO5	To critically evaluate the development and environment

Course Category: Core Course XV

Paper name: Project work/Research Methodology

Code: ECO6 B15

Course Outcome:

CO1	To understand the basic problems in an economy
CO2	To understand the concept of demand and supply
CO3	To know the production function in an economy
CO4	To undestand the ntional income concepts and meaning
CO5	To distiguish between Classicals and Keynesian economics

Semester I/II

Course Category: Complementary Course

Paper name: Mathematical Tools for Economics-I

Code: ECO1 C04

Course Outcome:

CO1	To understand demand for and supply of money
CO2	To critically evaluate the functions of finance commission
CO3	To distinguish between BOP and BOT
CO4	To critically evaluate the India as a developing economy

Semester IV/III

Course Category: Complementary Course

Paper name: Mathematical Tools for Economics-II

Code: ECO4 C04

Course Outcome:

CO1	To assess a good proficiency in the fundamental methods of mathematical economics
CO2	To understand econometric principles in economics.
CO3	To understand fundamental aspects of mathematical economics and econometrics.
CO4	To develop critical thinking, and problem-solving, empirical research and model building capabilities of the student

OPEN COURSE

Semester V

Course Category: Open Course

Paper name: Economics in Everyday Life

Code: ECO5 D01

Course Outcome:

CO1	To introduce a non- economics students to the subject matter of economics by familiarising with the most basic concepts of economics
CO2	To include concepts that are used in everyday life.

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ELECTIVE COURSE

Semester VI

Course Category: Elective Course

Paper name: Urban Economics

Code: ECO6 B18

Course Outcome:

CO1	To critically evaluate urbanization in India
CO2	To understand the basic theoretical premises and analytical tools that are used in urban economics
CO3	To analyse the current policy issues and programmes on urban economic growth,

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ENGLISH

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Core Courses

Semester I

Paper name: INTRODUCING LITERATURE

Code: ENG1B01

Course Outcome: Students should be able to differentiate between with the different aspects of the language of literature. Discover the linguistic structures of poetic texts. Distinguish diverse points of view within a single text and locate the rationale of polyphony. Determine and interpret the dominant voice/s within the text and its agendas. Discriminate marginalized voices and determine themselves to the voices of the child, Dalit, transgender and female.

Semester II

Paper name: APPRECIATING POETRY

Code: ENG2B02

Course Outcome: Students should be able to outline the basic elements of poetry, the stylistic and rhetorical devices and various genres of poetry. Analyze and identify the trends in poetry and the linguistic structures of poetic texts. Discover various perspectives in reading poetry like gender, race, caste, ethnicity, religion, region, environment and nation. Define different forms of poetry in British and American literature and classify different forms and themes of poetry across the globe in the history of literature. Appreciate poetry as an art form.

Semester III

Paper name: APPRECIATING PROSE

Code: ENG3B03

Course Outcome: Students should be able to develop critical thinking. Interpret and appreciate different types of prose. Identify different styles of prose writing and understand the use of literary devices. Identify, analyze, interpret and describe the critical ideas, values, and themes that appear in literary and cultural texts. Develop creative writing skills.

Paper name: ENGLISH GRAMMAR AND USAGE

Code: ENG3B04

Course Outcome: Students should be able to determine the key concepts of English grammar and to apply them more sensitively in their day-to-day communication needs. Manipulate the language in a better way by understanding of the sentence patterns in English. Develop a sense of English grammar, idioms, syntax, semantics and their usage. Develop the logical and

analytical skills in the use of language for communication. Appraise contemporary English usage.

Semester IV

Paper name: APPRECIATING FICTION

Code: ENG4B05

Course Outcome: Students should be able to develop critical thinking and imagination through long and short fiction. Interrelate cultural diversity through different representative samples of fiction. Discover the pleasures in reading fiction. Critique human condition and the complexities of life. Discover different types of fiction and analyze them.

Paper name: LITERARY CRITICISM

Code: ENG4B06

Course Outcome: Students should be able to differentiate between judgment and appreciation. Identify various movements and schools of thought. Critique plays, passages and poems. Recognize the history and principles of literary criticism since Plato. Develop the philosophical and critical skills with which literature can be appreciated. Appraise important texts and movements in the history of literary criticism. Demonstrate how literary criticism shapes literature and culture across centuries. Recognize and critique the major arguments underlying critical writings. Compare and contrast critical perspectives of Indian Poetics and Western critical concepts.

Semester V

Paper name: APPRECIATING DRAMA AND THEATRE

Code: ENG5B07

Course Outcome: Students should be able to establish and illustrate the basic elements of drama, including the historical progress of drama in different continents. Appreciate drama as an art form. Identify the different genres and masters of drama. Assess the theatrical performances and the texts and evaluate them critically from various standpoints. Explain the insights, conventions and experimentations associated with English Drama. Demonstrate how writers use the resources language as creativity. Point out the entire range of human experience through drama as a literary form.

Paper name: LITERARY THEORY

Code: ENG5B08

Course Outcome: Students should be able to develop an understanding of important texts and movements in the history of literary theory. Critique literature and culture in the context of theory. Develop various perspectives of thinking and critique the major arguments presented in theory. Construct a pluralistic perspective of culture and literature in a multicultural society. Identify, analyze, interpret and describe the critical ideas, values, and themes that appear in literary and cultural texts. Identify the origin of critical ideas in literature. Define the function of criticism.

Paper name: LANGUAGE AND LINGUISTICS

Code: ENG5B09

Course Outcome: Student should be able to recognize key concepts of Linguistics and develop awareness of latest trends in Language Study. Point out the features of languages, their sounds, their ways of forming words, their sentence structures, and their systems of expressing meaning. Examine through an objective study the relation of language with human mind and communicative action. Operate the features of pronunciation and their general standards in every day conversation and in reading. Develop a sense of English syntax and will be able to provide complete syntactic analyses for sentences of English. Develop a sense of awareness of principles of language that govern the distribution of morphology and how morphology interacts with other components of language. Recognize the fundamental topics in semantics and develop a concept of different semantic levels.

Paper name: INDIAN WRITING IN ENGLISH

Code: ENG5B10

Course Outcome: Students should be able to correlate the various phases of the evolution of Indian writing in English. Delineate the thematic concerns, genres and trends of Indian writing in English. Recognize the pluralistic aspects of Indian culture and identity. Determine how and why Indian literature emerged as a distinct field of study. Identify the development of history of Indian English literature from its beginning to the present day. Interpret the works of great writers of Indian writers in English. Demonstrate, through discussion and writing, an understanding of significant cultural and societal issues presented in Indian English literature.

Semester VI

Paper name: VOICES OF WOMEN

Code: ENG6B11

Course Outcome: Students should be able to generalize and infer on what grounds women's writings can be considered as a separate genre. Interpret texts written by Women writers across different cultures. Differentiate between sex and gender and how the latter is a social

construction. Identify the issues and concerns of the women writers of the developed, developing and under-developed countries. Identify the misconceptions regarding women and to evolve a human perspective about them. Develop a keen interest in analysing critically the diversity of women's experiences across the world and to marvel at their creative skills.

Paper name: CLASSICS OF WORLD LITERATURE

Code: ENG6B12

Course Outcome: Students should be able to identify the classic literature and thereby composite cultures of the world. Develop cross cultural perspectives. Classify literary texts in English or English translation in terms of their main stylistic and thematic features. Describe the literary, historical, social and cultural backgrounds of these texts. Identify some of the main theoretical and methodological issues involved in reading World Literature.

Paper name: FILM STUDIES

Code: ENG6B13

Course Outcome: Students should be able to appraise film as an art form and its aesthetics. Relate and connect film with history, politics, technology, psychology and performance. Appraise the nature of representation on screen and how class, race ethnicity and sexuality are represented. Develop analytical skills so that the student can produce informed and thorough close readings of films. Discover the articulation of a film’s content, form and structure. Identify and define the formal and stylistic elements of film. Develop an understanding of film language and terminology, and analyze the ways in which that this language constructs meaning and ideology. Identify and interpret significant film movements and key concepts. Point out the diverse forms of the moving image, including, for example, the feature film, experimental and avant-garde cinema, video art and moving image installation, television and digital media.

Paper name: NEW LITERATURES IN ENGLISH

Code: ENG6B14

Course Outcome: Students should be able to distinguish diverse cultures and modes of expression. Discuss issues of cultural plurality and hybridity. Identify literary negotiations of colonization and decolonization, identity, inequality, marginalization and so on. Point out the canon of English literature, Commonwealth literature, Post Colonialism and the context of New Literatures.

Complementry Courses:

Semester I/II

Paper name: Introduction to Electronic Media

Code: JOU1(2)C02

Course Outcome: Make them aware of communication and radio. Stress the importance of radio as a mass media. Introduce them to the New Media and the writing practices.

Semester III/IV

Paper name: Introduction to T.V. and Cinema

Code: JOU4(3)C02

Course Outcome: Introduce the TV Broadcast journalism to the students. Introduce the students the medium cinema and its characteristics.

Open Courses

Semester V

Paper name: ENGLISH FOR COMPETITIVE EXAMINATIONS

Code: ENG5D01

Course Outcome: To help the students to approach and qualify competitive examinations by introducing the usually discussed areas in the exams. To enable the learners to acquire necessary professional skills in the usage of English. To provide opportunities for the students to improve their listening and reading comprehension skills.

Elective Courses

Semester VI

Paper name: SHAKESPEARE

Code: ENG6B20

Course Outcome: To expose students to the universality of Shakespeare and his relevance for all times. To appreciate the polyphonic quality of Shakespeare's works and to learn the different modes of approaching Shakespeare. To develop the students' skill of formulating his/her own critical position

Project Work/ Research Methodology

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HISTORY

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B A HISTORY-As per 2019 Syllabus Revision

Programme Outcomes (PO)

PO1: Impart intellectual skills to make sense of the past.
PO2: Develop the critical faculty of the students.
PO3: Developing an understanding of the present-ness of the past
PO4: To create interest towards the cultural and historical background of India.
PO5: To understand the various historical incidents and to help students for preparing competitive examination.
PO6: To help the students to identify and evaluate conflicting interpretations.
PO7: It inspire the students through bravery and courage of our forefather.
PO8: It inculcates critical thinking, reading, writing and research skills among students.
PO9: Inculcating curiosity about past

COURSE OUTCOMES

SL NO	Paper code and Name	Outcome
1	**HIS1B01 TRENDS IN HISTORIOGRAPHY**	● Expose the basic understanding regarding the development of History as a discipline. ● The emphasis will be on the major trends in the arena of Historical Writing and Thought. ● Illustrate how the methodological and philosophical shifts have contributed for the development of History as a discipline
2	**HIS2 B02 Trends in Indian Historiography**	● Get the basic understanding regardingthe development of Historical consciousness in India. ● Provide a basic understandingregarding the major trends in the arena of Historical Writing and Thought in India. ● Expose the students to the major paradigms associated with the study of Indian History, whichwill help them to understand the Indian

		History Courses in the following semesters.
3	**HIS3B03 WORLD HISTORY -1**	● To know a general time line and outline of ancient civilizations, including key events and cultural achievements of different ancient civilizations ● The course provides an overview of early cultures and meetings between cultures and similar trends across cultures Compares and contrasts past with current events, issues and problems ● Ability to recognize the multiple spatial and temporal contexts and to look at one's own society and civilization in contrast to other societies and civilizations. ● Ability to recognize the influence of global forces and identify their connections to local and national developments.
4	**HIS3 B04 INDIAN HISTORY-1**	● To provide a broad historic outline about the process of socio-political formations in the north and south India up to 1300 CE. F ● The course provide four main process of the socio-political formations; the emergence of the first

		urbanization in the north western part of early India during bronze age, the socio-political formations of IndoGangetic plains in the Iron Age, the emergence of an empire under Mauryas in the north and Muvendars in the South and the formation of feudal cultures in the north and south
5	**HIS4 B05 WORLD HISTORY- 2**	● The course is prepared to create knowledge on medieval world through which students could able to understand different state systems, its socio- cultural contributions and its impact on later society. ● Along with a study on medieval European state and society, it focuses on the sociopolitical and economic currents of medieval Central Asia, West Asia and East Asia ● The course would provide an understanding on scientific and intellectual interactions that taken place between the East and the West in the medieval period ● It also explains the pattern of medieval medicinal system and its efficacy in dealing

		contagious diseases of the period.
6	**HIS4B06 INDIAN HISTORY-2**	● The course is framed to explicate the nature of state and society in Medieval India ● It familiarizes the students with process of state formation; economic pattern of medieval India along with the social and cultural developments of the period ● . It explains the process of medieval trade related to Arabian Sea and Indian Ocean. Students could able to understand changing pattern of agrarian system in medieval India ● A new phase in Indian History began with the advent of the Arabs in Sindh in A.D.712. ● The Arabs brought a new religion, a new culture and civilization to the Indian Sub-Continent. ● The new form of religious ideas, culture, fine arts etc. have lasting impact on India
7	**HIS5 B07 WORLD HISTORY- 3**	● Students acquaint with 'transition in history' by looking at social, political, economic and technological changes from medieval to modern.

		• Develop new perspectives on American War of Independence, English and French Revolution. • Create a fresh look at Industrial Revolution and consequent development in all walks of modern world. It will peep into the colonialism and anti-colonial movements. • Appreciate the mass mobilization in Third World countries and appreciate the democratic ideologies tagged along with it.
8	**HIS5 B08 INDIAN HISTORY - 3**	• Realise the impact of colonialism and its presence in contemporary India • Appreciate the values and ideologies of freedom struggle • Trace the mass basis of Indian national movement • Trace the dynamics of Indian economy that have rooted in both colonial and Native practices • Understand the process of class formations in Modern India
9	**HIS5 B09- KERALA HISTORY-1**	• New thinking on major aspects of the evolution of Kerala history and culture in the light of new researches and findings

		● Realise the importance of landscape and seascape of Kerala and its climate and engage in the activities related to the balanced use of natural resources ● Realise the evolution of land relations in Kerala and its impact on social life ● Identify the trade items of Kerala related to Arabian Sea and Indian Ocean ● Realise the changes occurred in the landscape of Kerala especially its flora and fauna with the arrival of foreigners
10	**HIS5 B10 - METHODOLOGY OF THE WRITING OF HISTORY**	● Enable the student to understand the techniques of writing History and the evolution of such a techniques. ● Students will learn the theory and practice of historical research as practiced by professionals in the field including traditional and current research methodologies. ● It enables the student to develop a thesis/argument, evaluate its historical probability, and place that argument in a historiographical context ● It helps to develop a historian's skills, including reading, writing, speaking,

		and critical inquiry and would be able to execute and guided independent research projects in accord with the research manuals. ● Distinguish between various forms of presentation of history and the basic elements of research in history. ● Prepare students for writing the local history projects
11	**HIS6 B11-INDIAN HISTORY- 4**	● Realise the social and economic issues of contemporary India and engage in the socially useful productive works ● Define a pluralistic society and its relationship to our democratic principle ● Realise the importance of the constitution of India and recognize the contribution of leaders and personalities who prepared it. ● Aware of the environmental issues of the country and contributed to the sustainable development activities ● Identifying the cardinal principles of Foreign Policy of India and think highly of national leaders who contributed to the ideology of peaceful co existence

12	**HIS6 B12- KERALA HISTORY- 2**	• Identify the real nature of the colonial intervention in Kerala • Trace the historical roots of progressive contemporary Kerala • Analyse critically the role of leaders and movements in the transformation of modern Kerala • Familiarise with Kerala Model of Development and engage in the rebuilding process of Kerala economy • Understand the issues in contemporary Kerala so as to be responsive to the same.
13	**HIS6 B13-GENDER STUDIES**	• Explain conventional social norms about male-female dichotomy and can device policies and strategies to foster gender equality and gender justice • Contribute to creative interventions that may result in a world with less inequality • Critically interrogate and actively engage in social processes related to the construction of gender • Analyse social and cultural phenomena through the lens of gender in a way that appreciates a range of disciplinary perspectives

14	**HIS6 B14-INDIAN HERITAGE AND PLURALITY OF CULTURES**	• Realise the diverse nature of Indian culture • Involve in nation building process with an understanding on multicultural system of the country • . Realise the values and ideologies of secular movements and ideologies of the Country
	OPEN COURSE	
1.	**HIS5D01 HISTORICAL TOURISM**	• Realise the Tourism potential of India and Kerala • Serve as mentors and tourism operators • Realise the importance of eco tourism and sustainable tourism
	ELECTIVE COURSE	
1.	**HIS6 B16 HISTORY OF ARCHAEOLOGY IN INDIA**	• Engaged in excavation process to recover historical traits and cultural sites • Experimenting with various scientific dating methods • Expertise in setting of Museum and conservation and preservation of artifacts
	Complementary Courses	
1.	**HIS1(2) C01 MODERN INDIAN HISTORY (1857 TO THE PRESENT**): I	• Modern Indian History focusing the Colonialism and National Movement • It will expose the students to the major events and periods

		which constructs the discourses in Modern Indian History, which will help them to understand the making of India as a Nation.
2	**HIS4(3) C01 MODERN INDIAN HISTORY (1857 TO THE PRESENT**): II	● Explain the history of Colonialism and National Movement from the Gandhian Age to the Age of Globalization. ● Expose the students to the nature and methods of Indian National Movement and the serious debates happened in the period.

SACRED HEART COLLEGE FOR WOMEN

CHALAKUDY, THRISSUR, KERALA

AQAR 2020-21

MALAYALAM

Criterion II - Teaching Learning & Evaluation

SUB CRITERION **- 2.6.1 - Programmes and course outcomes for all the programmes offered by the institution are stated and displayed on the website and communicated to the teachers and students.**

COURSE OUTCOMES

B.com COMMON COURSE (Malayalayam-2016)

First Semester

Paper Code: MALIA01

Malayala Sahithya Padanam -1

1. Be interested in Literature.
2. To understand different literary movements.

Second Semester

Paper Code: MALIA02 (1)

Malayala Sahithya Padanam -2

1. To understand various literary of language.
2. To understand trends in various periods in the history of Malayalam poetry and literature.

B.com COMMON COURSE (Malayalayam-2019)

First Semester

Paper Code: MALIA07 (2)

Malayala Sahithya Padanam -1

3. Be interested in Literature.
4. To understand different literary movements.

Second Semester

Paper Code: MAL2A08 (2)

Malayala Sahithya Padanam-2

3. To understand various literary of language.
4. To understand trends in various periods in the history of Malayalam poetry and literature.

COURSE OUTCOMES- BA/B.Sc MALAYALAM

COMMON COURSE (2016)

First Semester

Paper Code: MALIA01

Malayala Sahithyam -1

1. To understand the change of Malayalam literature in different periods.
2. To understand the writings of Malayalam writers.

Second semester

Paper Code: MALZA02

Malayala Sahithyam-2

1. Understand the stages of growth in Malayalam poetry.
2. Formulate common ground on the progression of prose and critical literature.

Third semester

Paper Code: MAL3A03

Malayala Sahithyam -3

1. Get acqlianted with the tide of drama, screen play, autography.
2. To understand general knowledge about film art.

Fourth semester

Paper Code: MAL4A04

Malayala Sahithyam-4

1. Gain the ability to translate from Malayalam and English.
2. To understand about novel literature.

COURSE OUTCOMES- BA/B.Sc MALAYALAM

COMMON COURSE (2019)

First Semester

Paper Code: MAL1A07 (1)

Malayala Sahithyam -1

3. To understand the change of Malayalam literature in different periods.
4. To understand the writings of Malayalam writers.
5. To develop interest in mother tongue and literature.
6. Malayalam literature and language usage of different eras.
7. Introduce various literary and discourse forms in Malayalam.

Second semester

Paper Code: MAL2A08 (1)

Malayala Sahithyam-2

3. Understand the stages of growth in Malayalam poetry.
4. Formulate common ground on the progression of prose and critical literature.

Third semester

Paper Code: MAL3A09

Malayala Sahithyam-3

3. Get acqlianted with the tide of drama, screen play, autography.
4. To understand general knowledge about film art.

Fourth semester

Paper Code: MAL4A10

Malayala Sahithyam-4

3. Gain the ability to translate from Malayalam and English.
4. To understand about novel literature.

SACRED HEART COLLEGE FOR WOMEN

CHALAKUDY, THRISSUR, KERALA

AQAR 2020-21

CHEMISTRY

Criterion II - Teaching Learning & Evaluation

SUB CRITERION **- 2.6.1 - Programmes and course outcomes for all the programmes offered by the institution are stated and displayed on the website and communicated to the teachers and students.**

BSc. Chemistry Core course outcomes

Name of the course	Course code	Course outcomes
Theoretical and Inorganic Chemistry- I	CHE1B01	CO1: To apply the methods of a research project. CO2: To understand the principles behind volumetry. CO3: To analyse the characteristics of different elements. CO4: To distinguish between different acid base concepts. CO5: To analyse the stability of different nuclei.
Theoretical and Inorganic Chemistry- II	CHE2B02	CO1: To understand the importance and the impact of quantum revolution in science. CO2: To understand and apply the concept that the wave functions of hydrogen atom are nothing but atomic orbitals. CO3: To understand that chemical bonding is the mixing of wave functions of the two combining atoms. CO4: To understand the concept of hybridization as linear combination of orbitals of the same atom. CO5: To inculcate an atomic/molecular level philosophy in the mind.
PHYSICAL CHEMISTRY - I	CHE3BO3	CO1: To understand the properties of gaseous state and how it links to thermodynamic systems. CO2: To understand the concepts of thermodynamics and it's relation to statistical thermodynamics. CO3: To apply symmetry operations to categorize different molecules.
ORGANIC CHEMISTRY–I	CHE4BO4	CO1: To apply the concept of stereochemistry to different compounds. CO2: To understand the basic concepts of reaction mechanism. CO3: To analyse the mechanism of a chemical reaction. CO4: To analyse the stability of different aromatic systems.

INORGANIC CHEMISTRY PRACTICAL - I	CHE4BO5(P)	CO1: To enable the students to develop skills in qualitative analysis and preparing inorganic complexes. CO2: To understand the principles behind quantitative analysis. CO3: To apply appropriate techniques of volumetric quantitative analysis in estimations. CO4: To analyse the strength of different solutions.
INORGANIC CHEMISTRY – III	CHE5BO6	CO1: To understand the principles behind qualitative and quantitative analysis. CO2: To understand basic processes of metallurgy and to analyse the merits of different alloys. CO3: To understand the applications of different inorganic polymers. CO4: To analyse different polluting agents. CO5: To apply the principles of solid waste management.
ORGANIC CHEMISTRY - II	CHE5BO7	CO1: To understand the difference between alcohols and phenols. CO2: To understand the importance of ethers and epoxides. CO3: To apply organometallic compounds in the preparation of different functional groups. CO4: To apply different reagents for theinterconversion of aldehydes, carboxylic acids and acid derivatives. CO5: To apply active methylene compounds in organic preparations.
PHYSICAL CHEMISTRY - II	CHE5BO8	CO1: To apply the concept of kinetics, catalysis and photochemistry to various chemical and physical processes. CO2: To characterise different molecules using spectral methods. CO3: To understand various phase transitions and its applications.

OPEN COURSE ENVIRONMENTAL CHEMISTRY	CHE5D01	CO 1: Recall the technical/scientific terms involved in pollution. CO 2: Understand the causes and effects of air pollution. CO 3: Understand the sources, types and effects of water pollution. CO 4: Describe water quality parameters. CO 5: Know soil, noise, thermal and radioactive pollutions and their effects. CO 6: Study various pollution control measures. CO 7: Understand the basics of green chemistry.
INORGANIC CHEMISTRY- IV	CHE6BO9	CO1: To understand the principles behind different instrumental methods. CO2: To distinguish between lanthanides and actinides. CO3: To appreciate the importance of CFT. CO4: To understand the importance of metals in living systems. CO5: To distinguish geometries of coordination compounds.
ORGANIC CHEMISTRY - III	CHE6B10	CO1: To elucidate the structure of simple organic compounds using spectral techniques. CO2: To understand the basic structure and tests for carbohydrates. CO3: To understand the basic components and importance of DNA. CO4: To understand the basic structure and applications of alkaloids and terpenes. CO5: To distinguish different pericyclic reaction
PHYSICAL CHEMISTRY - III	CHE6B11	CO1: To understand the basic concepts of electrochemistry. CO2: To understand the importance of colligative properties. CO3: To relate the properties of materials/solids to the geometrical properties and chemical compositions.

ADVANCED AND APPLIED CHEMISTRY	CHE6B12	CO1: To understand the importance of nanomaterials. CO2: To appreciate the importance of green approach in chemistry. CO3: To understand the uses and importance of computational calculations in molecular design. CO4: To understand the role of chemistry in human happiness index and life expectancy
ELECTIVE POLYMER CHEMISTRY	CHE6B13(E2)	CO1: To understand various classification of polymers and types of polymerisation methods. CO2: To understand the important characteristics of polymers such as average molecular weight, glass transition temperature, viscoelasticity and degradation. CO3: To appreciate the importance of processing techniques. CO4: To characterise different commercial polymers and to un - recycling.
PHYSICAL CHEMISTRY PRACTICAL	CHE6B14(P)	CO1: To enable the students to develop analytical skills in determining the physical properties (physical constants). CO2: To develop skill in setting up an experimental method to determine the physical properties. CO3: To understand the principles of Refractometry, Potentiometry and Conductometry.

ORGANIC CHEMISTRY PRACTICAL	CHE6B15(P)	CO1: To enable the students to develop analytical skills in organic qualitative analysis. CO2: To develop talent in organic preparations to ensure maximum yield. CO3: To apply the concept of melting or boiling points to check the purity of compounds. CO4: To analyse and characterise simple organic functional groups. CO5 :To analyse individual amino acids from a mixture using chromatography
INORGANIC CHEMISTRY PRACTICAL - II	CHE6B16(P)	CO1: To enable the students to develop analytical skills in inorganic quantitative analysis. CO2: To understand the principles behind gravimetry and to apply it in quantitative analysis. CO3: To understand the principles behind colorimetry and to apply it in quantitative analysis.
INORGANIC CHEMISTRY PRACTICAL - III	CHE6B17(P)	CO1: To enable the students to develop skills in inorganic quanlitative analysis. CO2: To understand the principles behind inorganic mixture analysis and to apply it in qualitative analysis. CO3: To analyse systematically mixtures containing two cations and two anions.
PROJECT WORK	CHE6B18(Pr)	CO1: To understand the scientific methods of research project. CO2: To apply the scientific method in life situations. CO3: To analyse scientific problems systematically.

BSc. Chemistry Complementary course outcomes

Name of the course	Course code	Course outcomes
GENERAL CHEMISTRY	CHE1CO1	CO1: To understand and to apply the theories of quantitative and qualitative analysis. CO2: To understand the theories of chemical bonding. CO3: To appreciate the uses of radioactive isotopes. CO4: To understand the importance of metals in biological systems.
PHYSICAL CHEMISTRY	CHE2CO2	CO1: To understand the importance of free energy in defining spontaneity. CO2: To realise the theories of different states of matter and their implication. CO3: To understand the basic principles of electrochemistry.
ORGANIC CHEMISTRY	CHE3CO3	CO1: To understand the basic concepts involved in reaction intermediates. CO2: To realise the importance of optical activity and chirality. CO3: To appreciate the importance of functional groups and aromatic stability. CO4: To understand the basic structure and importance of carbohydrates, nucleic acids, alkaloids and terpenes.
PHYSICAL AND APPLIED CHEMISTRY	CHE4CO4	CO1: To understand the basic concepts behind colloidal state and nanochemistry. CO2: To understand the importance of green chemistry and pollution prevention.

		CO3: To appreciate the importance of different separation methods and spectral techniques. CO4: To understand the extent of chemistry in daily life.
CHEMISTRY PRACTICAL	CHE4CO5(P)	CO1: To understand the basic concepts of inter group separation. CO2: To enable the students to develop analytical and preparation skills.

MSC CHEMISTRY

Course Outcomes

Name of the course	Course code	Course outcomes
QUANTUM MECHANICS AND COMPUTATIONAL CHEMISTRY	CHE1C01	CO1: To learn the fundamental principles of the properties of matter and energy quantization. CO2: To understand the application of energy quantization and symmetry properties of molecules . CO3: To understand the different approximation techniques used in molecular quantum mechanics CO4: To describe and identify the various methods' advantages / disadvantages for simulating/modeling various scientific problems.
ELEMENTARY INORGANIC CHEMISTRY	CHE1C02	CO1: To understand the chemistry of main block elements, structure and bonding concepts , systematic CO2: To understand the systematic chemical reactivity. CO3 : To understand the relationship between the electronic structure and physical and chemical properties of transition and inner transition elements and their compounds. CO4: To identify and define various types of nuclear changes or processes including fission, fusion and decay reactions.
STRUCTURE AND REACTIVITY OF ORGANIC COMPOUNDS	CHE1C03	CO1: To provide a comprehensive information about the basic principles to understand the structure and reactivity of organic molecules. CO2: To understand substitution and elimination reactions of aliphatic and aromatic compounds. CO3: To understand the conformations analysis of

		different molecules and various concepts such as stereochemistry and fundamental principles of stereoselectivity in organic chemistry CO4: To understand the general strategy of asymmetric synthesis and the classification into chiral substrate, auxiliary, reagent and catalyst controlled processes.
THERMODYNAMICS, KINETICS AND CATALYSIS	CHE1C04	CO1: To understand the concepts in fundamentals laws of thermodynamics . CO2: To understand the concepts of reaction rates of reaction involving free radicals . CO3: To understand the theoretical models describing molecular collision- and reaction dynamics. CO4: To understand the principles of surface chemistry , its applications adsorption and adsorption isotherms and types of catalysts and their importance in the industry.
GROUP THEORY and CHEMICAL BONDING	CHE2C05	CO1: To determine symmetry operations and to determine spectroscopic selection rules based on molecular symmetry. CO2 :To understand the connection between symmetry and electronic and spectroscopic properties of molecules CO3: To provide a systematic treatment of symmetry in chemical systems within the mathematical framework known as group theory.
CO-ORDINATION CHEMISTRY	CHE2C06	CO1: To understand the properties of coordination compounds ,relate VBT and hybridization , CFT and MOT CO2:To understand the characterization techniques of coordination complexes

		CO3: To understand the mechanisms for reactions of transition metal complexes CO4: To understand the fundamentals and types of photochemical reaction in metal complexes.
REACTION MECHANISM IN ORGANIC CHEMISTRY	CHE2C07	CO1: To understand the mechanism and stereochemistry , to recognize, classify, explain, and apply fundamental organic reactions such as SN2, SN1, E2, E1, alkene addition, electrophilic aromatic substitution, 1,2/1,4-additions. CO2: To understand the reactions of carbon Hetero multiple bonds and mechanism of ester hydrolysis and esterification. CO3: To understand the concepts and applications in concerted organic reactions and organic photochemistry. CO4: To understand the different types of alkaloids, flavonoids & terpenoids , their chemistry and medicinal importance.
ELECTROCHEMISTRY, SOLID STATE CHEMISTRY AND STATISTICAL THERMODYNAMICS	CHE2C08	CO1 : To understand the behaviour of ions in solution phase under different conditions and its application towards different energy storage devices. CO2: To apply the Nernst, Butler-Volmer and Tafel equations to electrochemical systems CO3: To understand the structure of solids and the importance of chemical and physical bonds, crystal (dis)order and deffects for materials properties. CO4: To understand the physical interpretation of partition functions and be able to calculate thermodynamic properties of model systems with using Boltzmann -, Fermi-

		Dirac and Bose-Einstein statistics.
INORGANIC CHEMISTRY PRACTICALS- I & II	CHE1L01 & CHE2L04	CO1: To prepare the exact solutions for quantitative analysis. CO2: To apply the knowledge of quantitative analysis for the determination of metals from ores/alloys. CO3: To synthesize Inorganic complexes and also find their purity. CO4: To understand Ion-exchange chromatography for separation of metal ions. CO5: To understand the principle and working of different instruments like colourimeter, conductometer, spectrophotometer .
ORGANIC CHEMISTRY PRACTICALS – I & II	CHE1L02 & CHE2L05	CO1:To synthesize organic molecules. CO2: To maintain reaction conditions. CO3: To arrangement of assembly. CO4: To understand the methods of purification of samples.
PHYSICAL CHEMISTRY PRACTICALS – I & II	CHE1L03 & CHE2L06	CO1: To prepare the solution of the desired concentration and the desired volume CO2: To know the principle and handling of pH meter, Potentiometer, conductivitymeter, colorimeter, viscometer,etc. CO3: To plot accurate graphs of the desired scale for the calculations
MOLECULAR SPECTROSCOPY	CHE3C09	CO1: To understand basic aspects of microwave,IR,Raman and UV spectroscopy. CO2: To know how to solve problems based on H1 and C13 NMR CO3: To know applications of mass spectroscopy in determination of structures. CO4: To understand methods of solving combines problems

		on all spectroscopic techniques.
ORGANOMETALLIC AND BIOINORGANIC CHEMISTRY	CHE3C10	CO1: To understand the applications of organometallic compounds in organic reactions. CO2: To understand the mechanisms of organometallic reactions. CO3: To understand metal-metal bonds and metal clusters. CO4: To understand the importance of inorganic elements in vital systems.
REAGENTS AND TRANSFORMATIONS IN INORGANIC CHEMISTRY	CHE3C11	CO1: To understand various ways of attack on electrophilic species by a nucleophile CO2: To understand hetrocyclic and supramolecular chemistry. CO3: To understand mechanisms in asymmetric reaction. CO4: To understand the synthetic applications of reagents. CO5: To understand the rearrangements occurring through carbocations , carbanions ,carbenes and nitrenes .
GREEN AND NANOCHEMISTRY	CHE3E03	CO1: To understand the importance of green synthesis in reactions CO2: To understand microwave mediated organic synthesis. CO3: To understand the alternative synthesis,reagents and reaction conditions in green reactions. CO4: To understand the importance of nanomaterials and their synthetic methods. CO5: To understand the techniques for characterisation of nanoscale materials. CO6: To understand the importance and applications of carbon clusters and nanostructures.
INSTRUMENTAL METHODS OF ANALYSIS	CHE4C12	CO1. To understand the treatment of analytical data. CO2. To understand

		conventional analytical procedures. CO3. To understand potentiometry and amperometry. CO4. To understand theory, instrumentation and application of different spectrophotometry. CO5. To understand thermal and radiochemical methods and chromatography.
INDUSTRIAL CATALYSIS	CHE4E05	CO2 :To understand adsorption/desorption and the kinetics of catalytic reactions on a surface. CO2: To understand the preparative methods of catalyst, deactivation method and phase transfer catalysis. CO3: To understand how enzyme works and biocatalysis. CO4: To understand oil based chemistry in industrial catalysis.
ORGANOMETALLIC CHEMISTRY	CHE4E08	CO1: To understand classification, synthesis structure and application of organometallic compounds. CO2: To understand organometallic reactions. CO3: To understand homogeneous catalysis. CO4: To understand polymers with organometallic moieties in the main groups.
INORGANIC CHEMISTRY PRACTICALS III & IV	CHE3L07 & CHE4L10	CO1: To understand estimation involving quantitative separation of binary mixtures of ions in solution. CO2: To understand colorimetric estimation. CO3: To understand the preparation of inorganic complexes.
ORGANIC CHEMISTRY PRACTICALS III & IV	CHE3L08 & CHE4L11	CO1: To understand estimation of equivalent weight of acid, nitrogen, acid value and iodine value. CO2: To understand column chromatography and TLC.

		CO3: To understand colorimetric estimation of antibiotics – penicillin streptomycin.
PHYSICAL CHEMISTRY PRACTICALS III & IV	CHE3L09 & CHE4L12	CO1: To understand the determination of specific reaction rate of acid hydrolysis, Arrhenius parameters and other chemical kinetics . CO2: To understand adsorption experiments. CO3: To understand the phase equilibrium.
RESEARCH PROJECT	CHE4P01	CO1: To understand the scientific methods of research project. CO2: To apply the scientific method in life situations. CO3: To analyse scientific problems systematically.

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AQAR 2020-21

COMPUTER SCIENCE

Criterion II - Teaching Learning & Evaluation

SUB CRITERION **- 2.6.1 - Programmes and course outcomes for all the programmes offered by the institution are stated and displayed on the website and communicated to the teachers and students.**

Semester I

Course Category: Complementary Course I

Paper name: Computer Fundamentals

Code: CSC1C01

Course Outcome:

Impart the students with fundamental principles and operations of various units of computer and to impart them with the basic skill in application packages.

· Learn the basics of computer hardware units and how they work together

· Acquire basic skills with office packages

Semester II

Course Category: Complementary Course II

Paper name: Fundamentals of System Software, Networks and DBMS

Code: CSC2C02

Course Outcome:

Impart the students with the basic concepts of the system software, Computer Networks and Databases.

· Learn the basic concepts of various system software

· Learn the basics of Computer Networks

· Learn the basics of Databases

Semester III

Course Category: Complementary Course III

Paper name: Problem Solving Using C

Code: CSC3C03

Course Outcome:

Equip the students with the basic concepts of problem-solving using computers.

· Learn the concepts of programming.

· Learn the C language and Practice how to do the programme

Semester IV

Course Category: Complementary Course IV

Paper name: Data Structure Using C

Code: CSC4C04

Course Outcome:

· Introduce the concept of data structures

· Make the students aware of various data structures

· Equip the students to implement fundamental data structure programmes

MSC COMPUTER SCIENCE

Course Outcomes

Semester I
Paper name: DISCRETE MATHEMATICAL STRUCTURES
Code: CSS1C01

Course Outcomes:

CO1: Verify the validity of an argument using propositional and predicate logic.
CO2: Understand allocations of set theory by applying operations on set.
CO3: Apply operations of relations and functions in discrete structures.
CO4: Understand applications of Lattices and Boolean algebra in computer science domain.
CO5: Identify Group, Ring and Field in Group Theory
CO6: Understand applications of Graph Theory and Tree
CO7: Apply the concepts of graph theory and trees to formulate problem solving

Semester I
Paper name: ADVANCED DATA STRUCTURES
Code: CSS1C02

Course Outcomes:

CO1: Summarize different categories of data structures.
CO2: Design algorithms to perform operations with linear and non – linear data structures.
CO3: Describe how arrays, linked lists, stacks, queues, trees and graphs are represented in memory and used by algorithms.
CO4: Describe common applications for arrays, linked lists, stack, queue, tree and graphs.
CO5: Demonstrate different methods for traversing trees.
CO6: Design and implement an appropriate hashing function for an application.
CO7: Discuss the computational efficiency of the principal algorithms for sorting, searching and hashing.
CO8: Describes various types of trees and heap structures.

Semester I
Paper name: THEORY OF COMPUTATION
Code: CSS1C03

Course Outcomes:

CO1: Describe broad overview of the theoretical foundations of computer science.
CO2: Understand regular languages and finite automata.
CO3: Apply the concept of context free languages in problem solving.
CO4: Solve various problems of applying normal form techniques, push down automata and Turing Machines.
CO5: Propose solutions for the problems based on computability and decidability.

Semester I
Paper name: THE ART OF PROGRAMMING METHODOLOGY
Code: CSS1C04

Course Outcomes:

CO1: Improve ability to develop effective algorithms.
CO2: Understand the fundamental principles of problem-solving using computers.
CO3. Demonstrate the applications of the programming constructs including decision making, looping, arrays and strings.
CO4. Conceptualize modular programming basics using functions, structures and Unions
CO5. Understand features like pointers and macros and to become familiar with programming with files
CO6: Design, develop, implement, test and document well-structured and reliable computer programs using the C programming language.

Semester I
Paper name: COMPUTER ORGANIZATION & ARCHITECTURE
Code: CSS1C05

Course Outcomes:

CO1: Identify, understand and apply different number systems and codes.
CO2: Understand the digital representation of data in a computer system.
CO3: Understand the general concepts in digital logic design and their use in sequential and combinational circuit design.
CO4: Describe fundamental organization of a computer system.
CO5: Explain addressing modes, instruction formats and program control statements.
CO6: Understand computer arithmetic formulae and solve problems.
CO7: Distinguish the organization of various parts of a system memory hierarchy.
CO8: Identify and compare different methods for computer I/O

Semester I
Paper name: PRACTICAL I
Code: CSS1L01

Course Outcomes:

CO1: Develop programming skills using the fundamentals and basics of C language.
CO2: Develop programs using the basic elements like control statements, arrays and strings.
CO3: Design and implement the effective usage of arrays, structures, functions and pointers.
CO4: Implement files handling and command line arguments.
CO5: Demonstrate the concepts of stack, queue and linked list and apply various operations on them.
CO6: Demonstrate the concept of tree traversal and its operations.
CO7: Design program based on the concepts of sorting and searching techniques.

Semester I
Paper name: INTRODUCTION TO RESEARCH (ABILITY ENHANCEMENT AUDIT COURSE)
Code: CSS1A01

Course Outcomes:

CO1: Understand research terminology.
CO2: Apply the ethical principles of research.
CO3: Identify the components of a literature review process.
CO4: Critically analyze published research works.
CO5: Innovate and apply research methods in the discipline of computing.

Semester II
Paper name: DESIGN AND ANALYSIS OF ALGORITHMS
Code: CSS2C06

Course Outcomes:

CO1: Design algorithms in context of space and time complexity and apply asymptotic notation.
CO2: Analyze the problem and develop the algorithms related to these problems.
CO3: Classify the problems and apply the appropriate design strategy to develop algorithms.
CO4: Analyze the problem and develop the algorithms related to these problems.
CO5: Demonstrate the use of parallel algorithms.

Semester II
Paper name: OPERATING SYSTEM CONCEPTS COURSE
Code: CSS2C07

Course Outcomes:

CO1: Understand the basic components of a computer operating system.
CO2: Compare and interpret the applications of Process and threads.
CO3: Describe the policies for scheduling, deadlocks, synchronization, system calls, and file systems.
CO4: Illustrate the functioning of process management, memory management and file management Modules present in an OS.
CO5: Differentiate various types of scheduling algorithms.
CO6: Understand the concepts of Three-Tier Client/Server Architecture, Middleware and the characteristics of mobile operating systems.

Semester II
Paper name: COMPUTER NETWORKS
Code: CSS2C08

Course Outcomes:

CO1: Understand the basics concepts of computer network organization and implementation.
CO2: Describe theoretical understanding of layered network models - OSI and TCP/IP Models.
CO3: Illustrate the functionalities of different network layers.
CO4: Analyze the network application such as data transmission between client and server, file transfer, real-time and multimedia transmission.
CO5: Explain the security aspects in networks and principles of cryptography.

Semester II
Paper name: COMPUTATIONAL INTELLIGENCE
Code: CSS2C09

Course Outcome:

CO1: Apply the basic principles, models, and algorithms of AI to recognize, model, and solve problems in the analysis and design of information systems.
CO2: Conceptualize various knowledge representation techniques.
CO3: Analyze the problem-solving methods and algorithms related to searching, reasoning, game playing and machine learning.
CO4: Understand the functioning of expert systems and its importance.
CO5: Demonstrate the implementation various AI algorithms to solve real life problems.

Semester II
Paper name: PRINCIPLES OF SOFTWARE ENGINEERING
Code: CSS2C10

Course Outcomes:

CO1: Understand the software process and development models.
CO2: Understand the software design process and structured analysis of systems.
CO3: Distinguish different types of modelling like DFD and UML.
CO4: Illustrate the knowledge about the design of user interface.
CO5: Apply the skill of project management and report preparation.

Semester II
Paper name: PRACTICAL II
Code: CSS2L02

Course Outcomes:

CO1: Discuss and formulate the problems based on the basic principles of networks.
CO2: Implementation of different memory management techniques in OS.
CO3: Implement various system operations of the operating system and also the various process scheduling algorithms.
CO4: Understand the TCP/IP configuration for Windows and Linux.
CO5: Design and implement various network applications such as data transmission between client

and server, file transfer, real-time multimedia transmission.
CO6: Understand different Linux/UNIX shell scripts and execute various shell programs.

Semester II
Paper name: TERM PAPER (PROFESSIONAL COMPETENCY AUDIT COURSE)
Code: CSS2A02

Course Outcomes:

CO1: Apply critical thinking skills analytical ability in problem solving.
CO2: Apply foundational research skills to address research problem.
CO3: Innovate, experiment and analyze research findings.
CO4: Demonstrate capacity to lead and manage change through a collaborative environment.
CO5: Innovate, experiment and analyze research findings and practice the process of scientific publishing.

Semester III
Paper name: ADVANCED DATABASE MANAGEMENT SYSTEM
Code: CSS3C11

Course Outcomes:

CO1: Explain the basics of database management system, concepts of relational data model, entity-relationship model, relational database design, relational algebra and calculus.
CO2: Apply the normalization techniques to improve the database design.
CO3: Describe various database manipulation commands in SQL.
CO4: Understand Transaction Processing & Locking using the concept of Concurrency control.
CO5: Conceptualize advanced features of Object-Oriented Database Management Systems and Distributed databases.

Semester III
Paper name: OBJECT ORIENTED PROGRAMMING CONCEPTS
Code: CSS3C12

Course Outcomes:

CO1: Recall the object-oriented programing concepts and basics of Java.
CO2: Design and implement object-oriented programs including packages and interfaces.
CO3: Explain and handle exceptions and threads.
CO4: Develop interactive programs using applets, AWT and swings.
CO5: Explain the concepts of JDBC, sockets and gives an introduction to Unified Modelling Language (UML).

Semester III
Paper name: PRINCIPLES OF COMPILERS
Code: CSS3C13

Course Outcomes:

CO1: Understand the major phases of compilation, identify tokens of a typical high -level programming language, define regular expressions for tokens, design and implement a lexical analyzer.
CO2: Develop the parsers and experiment the knowledge of different parsers design without automated tools.
CO3: Construct the intermediate code representations and generation.
CO4: Explain the role of different types of runtime environments and memory organization for implementation of typical programming languages.
CO5: Apply the optimization techniques to have a better code for code generation.

Semester III
Paper name: PRACTICAL III
Code: CSS3L03

Course Outcomes:

CO1: Design and development of relational database systems.
CO2: Understand various advanced queries execution such as relational constraints, joins, set operations, aggregate functions, trigger and views.
CO3: Apply various software to design and build ER Diagrams, UML, Flowchart for related database systems.
CO4: Design and implement database applications on their own.
CO5: Apply JDBC to provide a program level interface for communicating with database using Java programming.
CO6: Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
CO7: Understand Java programming concepts and utilize Java Graphical User Interface in program writing.
CO8: Design and develop Java programs that solve real-world problems.

Semester IV
Paper name: PROJECT WORK
Code: CSS4P01

Course Outcomes:

CO1: Demonstrate a depth of knowledge of modern technology.
CO2: Practice to communicate effectively and to present ideas clearly and coherently to specific audiences in both the written and oral forms.
CO3: Understand the project requirements, reflect on their learning and take appropriate actions to implement it.
CO4: Estimate, plan, calculate, and adjust project variables.
CO5: Understand the importance of iteration, evaluation and prototyping in design of a software system.

ELECTIVE COURSES

Semester III
Paper name: COMPUTER GRAPHICS
Code: CSS3E01

Course Outcomes:

CO1: Understand the basics of computer graphics, different graphics systems and applications of computer graphics.
CO2: Extract scene with different clipping methods and its transformation to graphics display device.
CO3: Explore projections and visible surface detection techniques for display.
CO4: Explore object representations and surface detection methods.
CO5: Understand techniques and OpenGL programming concepts.

Semester III
Paper name: DATA WAREHOUSING AND DATA MINING
Code: CSS3E02

Course Outcomes:

CO1: Understand the basic concepts of Data mining and warehousing.
CO2: Identify the different techniques of data preprocessing.
CO3: Analyze patterns that can be discovered by classification and clustering.
CO4: Understand data mining techniques of clustering.
CO5: Identify complex data types based on spatial and web mining.

Semester IV
Paper name: SYSTEM SECURITY
Code: CSS4E03

Course Outcomes:

CO1: Familiarize with different types of securities in information systems, security goals and CIA.
CO2: Illustrate computer system threats and various types of system attacks
CO3: Identify different issues associated with system attacks and how attacking occurs; and various types of attackers
CO4: Provide knowledge in operating system security, file protections, security assurance
CO5: Understand important elements of Database security
CO6: Define security planning, various types of security policies and risk analysis.

Semester IV
Paper name: DIGITAL IMAGE PROCESSING
Code: CSS4E04

Course Outcomes:

CO1: Understand the fundamental concepts of a digital image processing
CO2: Apply various image enhancement techniques
CO3: Describe various image enhancement techniques
CO4: Implement algorithms for handling intensive image restoration problems.
CO5: Identify and compare various image segmentation and representation techniques
CO6: Understand various image compression procedures.

SACRED HEART COLLEGE FOR WOMEN

CHALAKUDY, THRISSUR, KERALA

AQAR 2020-21

MATHEMATICS

Criterion II - Teaching Learning & Evaluation

SUB CRITERION **- 2.6.1 - Programmes and course outcomes for all the programmes offered by the institution are stated and displayed on the website and communicated to the teachers and students.**

2.6.1Describe Student Performance and Learning Outcome (60)

Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution.

Describe Course Outcomes (COs) for all courses and mechanism of communication within a minimum of 500 characters and maximum of 500 words

Programme specific outcomes:

PSO's	M. Sc Mathematics Programme Specific Outcomes
PSO1	Help students to grab skills to analyse problems, formulate an hypothesis, evaluate and validate results, and draw reasonable conclusions thereof
PSO2	To Provide a strong foundation in various areas of Mathematics, so as the students can compete with their contemporaries and excel in the various careers in Mathematics
PSO3	To encourage problem solving skills, thinking, creativity of the students through assignments, project Work
PSO4	To convey knowledge of a wide range of mathematical techniques and application of mathematical methods/tools in other scientific and engineering domains
PSO5	To enable integral development of the personality of the student to deal with ethical and professional issues, and also to develop ability for independent and lifelong learning.
PSO6	To inspire and prepare the students to pursue higher studies and research, thus contributing to the ever increasing academic demands of the country

Course outcomes

Name of the Course	Course code	Course outcomes	PSO addressed
Algebra – I	MTH1C01	● To get the idea of different types of groups and group action on a set ● To understand the concept of isomorphism theorems and their significance, Sylow theorems and its applications ● To understand factorization of a polynomial over a field, homomorphism and factor rings	PSO1, PSO2

		.	
Linear Algebra	MTH1C02	● To understand the concept of vector spaces, their basis, dimension and linear transformations ● To understand more about linear transformations and some of its important properties, elementary canonical forms ● To introduce the concept of Inner product spaces, orthogonal compliment and direct sums of vector spaces.	PSO2, PSO3
Real Analysis – I	MTH1C03	● To introduce the concept of basic topology, difference between continuous and uniformly continuous functions and its properties. ● To understand the concept of differentiation of vector valued functions and integration of functions. ● To understand the difference between pointwise convergence and uniform convergence of sequence of functions, convergence of series of functions	PSO1, PSO2
Discrete Mathematics	MTH1C04	● To study about Boolean algebra and Boolean functions. ● To learn basics about graphs and trees. ● To study about planarity and connectivity ● To know the basic about automata. ● To learn about DFA and NFA	PSO3, PSO4
Number Theory	MTH1C05	● To introduce Arithmetical functions, Dirichlet multiplication and derivatives of arithmetical functions, Averages of arithmetic. ● To understand the Equivalent forms of prime number theorem, Partial sums of Mobius function. ● To understand the quadratic residues and quadratic reciprocity law, Jacobi's symbol, basics of cryptography, types of cryptosystem and its cryptanalysis.	PSO6, PSO4
Ability Enhancement Course	MTH1A01	● Provide an opportunity to learn from professionals in the field of Mathematics ● Presentation of seminar based on topics in Mathematics beyond the prescribed syllabus. ● Initial steps towards research through case study/book reviews/paper presentations.	PSO5,PSO6

Algebra- II	MTH2C06	• To introduce the concept of finite and extension fields, geometric constructions etc. • To understand the concept of Isomorphism Extension Theorem, Splitting and Separable Extensions. • To understand Galois theory and the Insolvability of the Quintic	PSO2 , PSO4
Real Analysis II	MTH2C07	• To introduce the concept of Sigma Algebra, Borel sets, Lebesgue Measure, Lebesgue Measurable Functions • To understand the concept of Lebesgue integration, the L^p spaces : Completeness and Approximation • To understand the concept of differentiation and integration.	PSO1, PSO2
Topology	MTH2C08	• To introduce the concept of basic topology, topological space, different types of topologies. • To understand the concept of making functions continuous, quotient spaces • To understand the separation axioms, the Urysohn characterization of normality, Tietz characterization of normality	PSO2
ODE & calculus of Variations	MTH2C09	• To understand the power series solutions of ordinary differential equations and the significance of special functions • To know more about special functions, systems of first order equations and nonlinear equations • To understand the qualitative nature of solutions and calculus of variation	PSO3, PSO4
Operations Research	MTH2C10	• To study about convex functions • To learn about methods to solve LPP and transportation problems • To know about sensitivity in LPP and methods to solve networks. • To understand game theory.	PSO4, PSO3

Multivariable Calculus & Geometry	MTH3C11	● To study about functions of several variables ● To learn about the analytical and geometric concepts of curves and its variations ● To study about cuvature and sufaces ● To know The Gauss and Weingarten maps, ● To learn Guassian and mean curvature.	PSO1,PSO2
Complex Analysis	MTH3C12	● To introduce the concept of Power series and Analytic functions ● To understand the concept of Cauchy's Theorem and Integral Formula, Open Mapping Theorem and Goursat's Theorem. ● To understand the Argument Principle, the Maximum Principle and Schwarz's Lemma.	PSO1,PSO2

Functional Analysis	MTH3C13	• To study about normed spaces and its properties • To learn about Hilbert spaces, Projection and Linear functionals. • To study about duality.	PSO2, PSO4
PDE & Integral Equations	MTH3C14	• To study solutions of PDE and to understand the nature of solutions via characteristic curves, graphical method. • To study methods of solving second order PDE, elliptic PDEs and energy method • To understand the relation between differential equation and integral equations, also different methods to solve integral equations.	PSO3, PSO4
Cryptography	MTH3E02	• To study about classical cryptosystems and its cryptanalysis. • To learn Shannon's theory and perfect secrecy • To study about product cryptosystems • To know about construction of various block ciphers. • To learn about iterated hash functions	PSO6
Advanced Functional Analysis	MTH4C15	• To study about spectrum and self adjoint operators • To learn about orthoprojection and spectral integral. • To learn Hahn Banach theorem and its corollaries	PSO2, PSO4
Algebraic Number Theory	MTH4E06	• Awareness about different types of numberfield and their properties. • Able to check unique factorization in fields and also can provide examples of nonunique factorizations. • To understand the geometric representation of algebraic numbers	PSO3, PSO4

Differential Geometry	MTH4E09	• To introduce the concept of graphs and level sets, basics of surfaces and notion of tangent space and Gauss map. • To understand the concept of parallel transport, local and global parametrization, arc length and line integral. • To understand the principal ,Gaussian ,Gauss Kronecker and Mean curvature, and parametrized surfaces.	PSO1, PSO3
Graph Theory	MTH4E11	• To introduce the concept of basic graph theory, trees, cut vertices and cut edges, Euler tour and Hamilton cycles • To understand the concept of matchings and covering, Edge colouring. • To understand the concepts of vertex colouring and it's important results. Planar graphs and dual graphs	PSO4, PSO5
Project	MTH4P01	• Learn the basics of research theory and techniques • Understand how to do a literature review, and how to appraise the literature to address questions • Explore an area of interest, develop some expertise and a deeper understanding of a topic • Learn to communicate scientific research in verbal presentations and written form.	PSO5, PSO6
Viva Voce	MTH4V01	• To replicate the learnt topics and to interconnect various branches of the subject • Enhance the ability to communicate Mathematics Effectively	PSO5, PSO6

SACRED HEART COLLEGE FOR WOMEN

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AQAR 2020-21

PHYSICS

Criterion II - Teaching Learning & Evaluation

SUB CRITERION **- 2.6.1 - Programmes and course outcomes for all the programmes offered by the institution are stated and displayed on the website and communicated to the teachers and students.**

B.Sc. Physics

PROGRAMME OUTCOME

PO1. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid ,and looking at our ideas and decisions (intellectual ,organizational and personal)from different perspectives.

PO2. Problem solving: Understand and solve the problems of relevance to society to meet the specific needs using the knowledge, skills and attitudes acquired from humanities/sciences/mathematics /social sciences.

PO3. Effective communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books,media and technology.

PO4. Effective citizenship: Demonstrate empathic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5. Environment and sustainability: Understand the issues of environmental contexts and sustainable development.

PO6. Self directed and lifelong learning: Acquire the ability to engage in independent and lifelong learning in the broadest context of socio-technological changes.

PROGRAMME SPECIFIC OUTCOME

PSO1: Understand the basic concepts of methodology of science and the fundamentals of mechanics, properties of matter and electrodynamics.

PSO2: Understand the theoretical basis of Quantum mechanics, Relativistic physics, Nuclear physics, Optics, Spectroscopy, Solid state Physics, Astrophysics, Statistical Mechanics, Photonics and Thermodynamics.

PSO3: Understand and apply the concepts of electronics in the designing of different analog and digital circuits

PSO4: Understand the basics of computer programming and numerical analysis.

PSO5: Apply and verify theoretical concepts through laboratory experiments.

COURSE OUTCOME
(2020-21)

PHY1 B01: MECHANICS – I

Semester: 1
Course Number: I
Number of hours of Lectures per week: 2
Number of Credits: 2
Number of Contact Hours: 36
Course Evaluation: Internal – 15 Marks + External – 60 Marks

OBJECTIVES

- To get a general idea about basic concepts of Newtonian Mechanics and how to apply these concepts to Physical Systems.
- To understand and apply the basic idea of work-energy theorem to physical systems.
- To understand the basic concept of rotational dynamics of rigid bodies and its applications in real life situations.

COURSE OUTCOMES

CO1	Understand and apply the basic concepts of Newtonian Mechanics to Physical Systems
CO2	Understand and apply the basic idea of work-energy theorem to physical systems
CO3	Understand and apply the rotational dynamics of rigid bodies

PHY 2 B02: MECHANICS – II

Semester: 2
Number of hours of Lectures per week: 2
Number of Credits: 2
Number of Contact Hours: 36
Course Evaluation: Internal – 15 Marks + External – 60 Marks

OBJECTIVES

- To Learn the basics of non-inertial systems and analyze different fictitious forces in such systems.
- To get a basic idea about central force, its general properties and analyze the features of central forces with respect to planetary forces.
- To Learn the fundamentals of harmonic oscillator model, including damped and forced oscillators and grasp the significance of terms like quality factor and damping coefficient.
- To get the basic concepts of wave motion.

COURSE OUTCOMES

CO1	Understand the features of non-inertial systems and fictitious forces
CO2	Understand and analyze the features of central forces with respect to planetary forces
CO3	Understand the basic ideas of Harmonic Oscillations
CO4	Understand the analyze the basic concepts of wave motion

PHY3B03: ELECTRODYNAMICS I

Semester: 3
Number of hours of Lectures per week: 3
Number of Credits: 3
Number of Contact Hours: 54
Course Evaluation: Internal – 15 Marks + External – 60 Marks

OBJECTIVES

- To understand mathematical methods physicists often use, including differential Calculus,The operator ∇- Gradient, Divergence, Curl, integral calculus, matrices and curvilinear coordinates.
- To Understand and analyze the electrostatic properties of physical systems.
- To Understand the mechanism of electric field in matter.
- To Understand and analyze the magnetic properties of physical systems
- To Understand the mechanism of magnetic field in matter.

COURSE OUTCOMES

CO1	Understand and apply the fundamentals of vector calculus
CO2	Understand and analyze the electrostatic properties of physical systems
CO3	Understand the mechanism of electric field In matter.
CO4	Understand and analyze the magnetic properties of physical systems
CO5	Understand the mechanism of magnetic field in matter.

PHY4B04: ELECTRODYNAMICS II

Semester: 4
Number of hours of Lectures per week: 3
Number of Credits: 3
Number of Contact Hours: 54
Course Evaluation: Internal – 15 Marks + External – 60 Marks

OBJECTIVES

- To enable to solve a variety of problems related to Faraday's law of induction and Maxwell's equations.
- To understand the relevance of displacement current in the context of electromagnetic wave propagation.
- To study in depth the transient current response of CR, LC, CR and LCR circuits, which is essential in designing as well as understanding the working of electronic circuits.
- To solve complex problems involving linear electrical networks employing the symmetry concepts together with various network theorems .

COURSE OUTCOMES

CO1	Understand the basic concepts of electrodynamics
CO2	Understand and analyze the properties of electromagnetic waves
CO3	Understand the behavior of transient currents
CO4	Understand the basic aspects of ac circuits
CO5	Understand and apply electrical network theorems

PH4B05 Practical-I (Credit 5)

Semester: 1,2,3 &4
Course Number: V
Number of hours of Lectures per week: 4
Number of Credits: 5
Number of Contact Hours: 36 hours in each semester
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objectives

- To Apply and illustrate the concepts of properties of matter through experiments.
- To Apply and illustrate the concepts of electricity and magnetism through experiments.
- To Apply and illustrate the concepts of optics through experiments.
- To Analyze and apply the principles of electronics through experiments

COURSE OUTCOMES

CO1	Apply and illustrate the concepts of properties of matter through experiments
CO2	Apply and illustrate the concepts of electricity and magnetism through experiments
CO3	Apply and illustrate the concepts of optics through experiments
CO4	Apply and illustrate the principles of electronics through experiments

PH5 B07: QUANTUM MECHANICS

Semester: 5
Number of hours of Lectures per week: 3
Number of Credits: 3
Number of Contact Hours: 54
Course Evaluation: Internal – 20 Marks + External – 80 Marks

OBJECTIVES

- To become familiar with Blackbody radiation, Ultraviolet catastrophe,PhotoElectric effect and Compton Effect
- To gain a clear knowledge about wave properties of particles,De Broglie waves and its implications on the uncertainty principle.
- To Study the Bohr Atom model in detail and understand about atomic excitations
- To grasp the idea of Wave Mechanics and gain the concept of eigen values, eigen functions and learn the basic postulates of quantum mechanics
- To find solution to Schrödinger's equation for many systems such as particle in a box, Hydrogen Atom and familiarize with different quantum numbers.

COURSE OUTCOMES

CO1	Understand the particle properties of electromagnetic radiation
CO2	Describe Rutherford – Bohr model of the atom
CO3	Understand the wavelike properties of particles
CO4	Understand and apply the Schrödinger equation to simple physical systems
CO5	Apply the principles of wave mechanics to the Hydrogen atom

PH5 B08: PHYSICAL OPTICS AND MODERN OPTICS

Semester: 5
Course Number:VIII
Number of hours of Lectures per week: 3
Number of Credits: 3
Number of Contact Hours: 56
Course Evaluation: Internal – 20 Marks + External – 80 Marks

OBJECTIVES

1. To give the idea about the basic Fermat's Principle
2. To empower students to understand the concept of interference
3. To understand the concept of diffraction.
4. To give a thorough understanding about holography and its applications
5. To acquire the basic knowledge Fibre optics

.

COURSE OUTCOMES

CO1	Understand the fundamentals of Fermat's principles and geometrical optics
CO2	Understand and apply the basic ideas of interference of light
CO3	Understand and apply the basic ideas of diffraction of light
CO4	Understand the basics ideas of polarization of light
CO5	Describe the basic principles of holography and fibre optics

PH5 B09: ELECTRONICS (ANALOG & DIGITAL)

Semester: 5
Number of hours of Lectures per week: 4
Number of Credits: 4
Number of Contact Hours: 72
Course Evaluation: Internal – 20 Marks + External – 80 Marks

OBJECTIVES

The objectives are to study

1. To give the idea about the basic principles of rectifiers and dc power supplies.
2. To empower students to understand the principles of transistors.
3. To prepare students to perform the designing of transistor amplifiers and oscillators.
4. To give a thorough understanding of the basic operation of Op –Amp and its applications.
5. To acquire the basic knowledge of digital logic levels and application of knowledge to understand digital electronics circuits.

COURSE OUTCOMES

CO1	Understand the basic principles of rectifiers and dc power supplies
CO2	Understand the principles of transistor
CO3	Understand the working and designing of transistor amplifiers and oscillators
CO4	Understand the basic operation of Op –Amp and its applications
CO5	Understand the basics of digital electronics

PH5 D01(1): NON CONVENTIONAL ENERGY SOURCES

Semester: 5
Course Number: Open course I
Number of hours of Lectures per week: 2
Number of Credits: 2
Number of Contact Hours: 36
Course Evaluation: Internal – 10 Marks + External – 40 Marks

OBJECTIVES

1. To Demonstrate the generation of electricity from various Non-Conventional sources of energy
2. To Estimate the solar energy, Utilization of it, Principles involved in solar energy collection and conversion of it to electricity generation.
3.To Explore the concepts involved in the wind energy conversion system by studying its components, types and performance.
4. To Illustrate ocean energy and explain the operational methods of their utilization.
5. To Acquire the knowledge on Geothermal energy.

COURSE OUTCOMES

CO1	Understand the importance of non conventional energy sources
CO2	Understand basic aspects of solar energy
CO3	Understand basic principles of wind energy conversion
CO4	Understand the basic ideas of geothermal and biomass energy and recognize their merits and demerits
CO5	Understand the basic ideas of oceans and chemical energy resources and recognize their merits and demerits

PH6 B10: THERMAL AND STATISTICAL PHYSICS

Semester: 6
Number of hours of Lectures per week: 4
Number of Credits: 4
Number of Contact Hours: 72
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objectives

- To Become familiar with various thermodynamic processes and work done in each of these processes.
- To Have a clear understanding about Reversible and irreversible processes and also working of a Carnot engine, and knowledge of calculating change in entropy for various processes.
- To Realize the importance of Thermo dynamical functions and applications of Maxwell's relations.
- To Familiarize in depth about statistical distribution and have basic Ideas about Maxwell Boltzmann,Bose-Einstein and Fermi Dirac Statistics and their applications

COURSE OUTCOMES

CO1	Understand the zero and first laws of thermodynamics
CO2	Understand the thermodynamics description of the ideal gas
CO3	Understand the second law of thermodynamics and its applications
CO4	Understand the basic ideas of entropy
CO5	Understand the concepts of thermodynamic potentials and phase transitions

PH6 B11 : SOLID STATE PHYSICS, SPECTROSCOPY AND LASER PHYSICS

Semester: 6
Number of hours of Lectures per week: 4
Number of Credits: 4
Number of Contact Hours: 72
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objectives

- To Have a clear picture of crystal structures and a clear understanding about x-ray diffraction
- To gain knowledge of superconductivity,,its underlying principles and its applications in modern world

- To Become familiar with molecular spectroscopy and have gained basic ideas regarding microwave spectroscopy, infrared spectroscopy and Raman Spectroscopy.
- To gain basic knowledge of laser and working of different type of lasers

COURSE OUTCOMES

CO1	Understand the basic principles of statistical physics and its applications
CO2	Understand the basic aspects of crystallography in solid state physics
CO3	Understand the basic elements of spectroscopy
CO4	Understand the basics ideas of microwave and infra red spectroscopy
CO5	Understand the fundamental ideas of Laser physics

PH6 B12 : NUCLEAR PHYSICS, PARTICLE PHYSICS & ASTROPHYSICS

Semester: 6
Number of hours of Lectures per week: 4
Number of Credits: 4
Number of Contact Hours: 72
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objectives

- To get a clear picture of nuclear composition and various nuclear models.
- To get deep knowledge about Radioactivity,nuclear Fission and Nuclear Fusion,the relevance of nuclear transformation.
- To Understand the working of nuclear detectors and counters,realize the importance of Cosmic rays and its effects on earth
- To familiarize with nuclear particles and different particle accelerators.
- To get Peripheral ideas about astronomy and astrophysics

COURSE OUTCOMES

CO1	Understand the basic aspects of nuclear structure and fundamentals of radioactivity
CO2	Describe the different types of nuclear reactions and their applications
CO3	Understand the principle and working of particle detectors
CO4	Describe the principle and working of particle accelerators
CO5	Understand the basic principles of elementary particle physics

PH6 B13(E1): Elective- Computational Physics

Semester: 6
Number of hours of Lectures per week: 3
Number of Credits: 3
Number of Contact Hours: 54
Course Evaluation: Internal – 20 Marks + External – 80 Marks

Objectives

- To get a clear picture of Python programming
- To get deep knowledge about Numerical methods in Physics
- To Introduce computational approach in Physics

COURSE OUTCOMES

CO1	Introduction to programming language Python
CO2	Applying Numerical Methods in physics
CO3	Understanding Computational approach in physics

PH6B14 - Practical II & PHY6B16: PRACTICAL III

Semester: 5 & 6
Number of hours of Lectures per week: 4
Number of Credits: 5
Number of Contact Hours:72 + 72
Course Evaluation: Internal – 30 Marks + External – 120 Marks

Objectives

- To Apply and illustrate the principles of semiconductor diode and transistor through experiments
- To Apply and illustrate the principles of transistor amplifier and oscillator through experiment
- To Apply and illustrate the principles of digital electronics through experiments
- To Analyze and apply computational techniques in Python programming

COURSE OUTCOMES

CO1	Apply and illustrate the principles of semiconductor diode and transistor through experiments
CO2	Apply and illustrate the principles of transistor amplifier and oscillator through experiments
CO3	Apply and illustrate the principles of digital electronics through experiments
CO4	Analyze and apply computational techniques in Python programming

MSc. Physics- Course Outcomes

Semester I **Paper name: CLASSICAL MECHANICS** **Code: PHY1C01**
Course Outcomes: **CO1:TheLagrangian and Hamiltonian approaches in classical mechanics.** **CO2: The classical background of Quantum mechanics and get familiarized with Poisson brackets and Hamilton -Jacobi equation** **CO3: Kinematics and Dynamics of rigid body in detail and ideas regarding Euler's equations of motion** **CO4: Theory of small oscillations in detail along with the basis of Free vibrations.** **CO5: Basic ideas about Non linear equations and chaos.**
Semester I **Paper name: MATHEMATICAL PHYSICS** **Code: PHY1C02**
Course Outcomes: **CO1:Learn about Gradient, Divergence and Curl in orthogonal curvilinear and their typical applications in physics.** **CO2: Learn about special types of matrices that are relevant in physics and then learn about tensors.** **CO3: Learn different ways of solving second order differential equations and familiarize with singular points and the Frobenius method.** **CO4:Get introduced to Special functions like Gamma function, Beta function, Delta function, Dirac delta function, Bessel functions and their recurrence relations** **CO5:Learn the fundamentals and applications of Fourier series, Fourier and Laplace transforms,their inverse transforms etc**
Semester I **Paper name: ELECTRODYNAMICS AND PLASMA PHYSICS** **Code: PHY1C03**
Course Outcomes: **CO1: have gained a clear understanding of Maxwell's equations and electromagnetic boundary conditions.** **CO2: know that laws of reflection, refraction are outcomes of electromagnetic boundary conditions. They will also be able design dielectric coatings which act like antireflection coatings. They will be able to distinguish between a good metal and a good dielectric.** **CO3: have grasped the idea of electromagnetic wave propagation through waveguides and transmission lines.** **CO4: extend their understanding of special theory of relativity by including the relativistic electrodynamics.** **CO5: understand the rather complex physical phenomena observed in plasma.**

Semester I
Paper name: ELECTRONICS
Code: PHY1C04

Course Outcomes:
CO1:Field Effect Transistors, their principles and applications
CO2: Photonic devices like LED, Laser diode, photodetectors, solar cells etc and their working in detail
CO3: Basic operational amplifier characteristics, OPAMP parameters and frequency response
CO4:OPAMP applications as inverter, integrator, differentiator ,active filters and multivibrator etc
CO5: Digital electronics discussing logic gates and working of major digital devices like flip flops, CMOS ,CCD etc Karunaghmaps,flipFlops,counters and working of Microprocessors in detail.

Semester II
Paper name: QUANTUM MECHANICS-I
Code: PHY2C05

Course Outcomes:
CO1:Linear vector spaces, Hilbert space, concepts of basis and operators and bra and ket notation
CO2: Both schrodinger and Heisenberg formulations of time development and their applications
CO3: Theory of angular momentum and spin matrices, orbital angular momentum and Clebsch Gordan Coefficient
CO4:Study about central potentials and its applications.
CO5: Space-time symmetries and conservation laws, theory of identical particles

Semester II
Paper name: MATHEMATICAL PHYSICS-II
Code: PHY2C06

Course Outcomes:
CO1:know the method of contour integration to evaluate definite integrals of varying complexity.
CO2:Understand group theory and its applications.
CO3: be able to apply calculus of variations to diverse problems in physics including isoperimetric problems.
CO4:to find solutions to integral equations using different methods.
CO5:to become familiar with the method of Green's function to solve linear differential equations with inhomogeneous term

Semester II
Paper name: STATISTICAL MECHANICS
Code: PHY2C07

Course Outcomes
CO1:Explain statistical physics and thermodynamics as logical consequences of the postulates of statistical mechanics
CO2: Apply the principles of statistical mechanics to selected problems in Classical basis Grasp the basis of ensemble approach in statistical mechanics to a range of situations
CO3:To learn the fundamental differences between classical and quantum statistics and learn about quantum statistical distribution laws
CO4:Study important examples of ideal Bose systems
CO5:Study important examples of ideal Fermi systems

Semester II
Paper name: COMPUTATIONAL PHYSICS
Code: PHY2C08

Course Outcomes:
CO1:Have a strong base in Python language regarding different data types such as list,sets,dictionary etc.
CO2: It helps to understand the different modules like NUMPY, Matplotlib Etc Understand Arrays and matrices and enables data visualization
CO3:Gets a wide knowledge of numerical methods in computational Physics that can be used to solve many problems which does not have an analytic solution
CO4:Numerical methods for solving ordinary differential equations
CO5: Solve problems in physics such Freely falling body, projectile motion, planetary motion and oscillatory motion in python language.

Semester I & II
Paper name: GENERAL PHYSICS (Practicals)
Code: PHY1P01 & PHY2P03

Course Outcomes:
- **Learn various experimental and computational tools thereby developing analytical abilities to address real world problems.**
- **Adopt the skills related to research, education, and industry- academia**

Semester I & II
Paper name: ELECTRONICS (Practicals)
Code: PHY1P02 & PHY2P04

Course Outcomes:

- **Understand the behaviour of electronic components and perform analysis and design of bias circuits for diodes, transistors etc.**
- **Set up testing strategies and select proper instruments to evaluate performance characteristics of electronic circuits.**
- **Choosing testing and experimental procedures on different types of electronic circuit and analyse their operation under different operating conditions.**

Semester III
Paper name: QUANTUM MECHANICS –II
Code: PHY3C09

Course Outcomes:
CO1: To study about time-independent perturbation problems
CO2:The variational equation and its application to ground state of the hydrogen and Helium atom
CO3: Perturbation theory and Interaction of an atom with the electromagnetic field
CO4:To get an idea of Scattering, its parameters and its application
CO5: Relativistic Quantum Mechanics using Dirac equation, Dirac matrices,. The Klein Gordon equation etc

Semester III
Paper name: NUCLEAR AND PARTICLE PHYSICS
Code: PHY3C10

Course Outcomes:
CO1:have a basic knowledge of nuclear size ,shape , binding energy.etc and also the characteristics of nuclear force in detail.
CO2:acquire knowledge about nuclear decay processes and their outcomes. Have a wide understanding regarding beta and gamma decay.
CO3:be able to gain knowledge about various nuclear models and potentials associated. Grasp knowledge about Nuclear reactions, Fission and Fusion and their characteristics.
CO4:To acquire knowledge on nuclear radiation detectors.
CO5: understand the basic forces in nature and classification of particles and study in detail conservations laws and quark models in detail

Semester III
Paper name: SOLID STATE PHYSICS
Code: PHY3C11

Course Outcomes:
CO1: have a basic knowledge of crystal systems and spatial symmetries ,- be able to account for how crystalline materials are studied using diffraction, including concepts like reciprocal lattice and Brillouin zones
CO2: know what phonons are, and be able to perform estimates of their dispersive and thermal properties , be able to calculate thermal and electrical properties in the free-electron model
CO3: know Bloch's theorem and what energy bands are and know the fundamental principles of semiconductors
CO4:know the fundamentals of dielectric and ferroelectric properties of materials
know basic models of dia, para and ferro magnetism
CO5: be able to explain superconductivity using BCS theory

Semester IV
Paper name: ATOMIC AND MOLECULAR SPECTROSCOPY
Code: PHY4C12

Course Outcomes:
CO1: know about different atom model and will be able to differentiate different atomic systems, different coupling schemes and their interactions with magnetic and electric fields.
CO2:Have gained ability to apply the techniques of microwave and infrared spectroscopy to elucidate the structure of molecules
CO3:Be able to apply the principle of Raman spectroscopy and its applications in the different field of science & Technology.
CO4:To become familiar with different resonance spectroscopic techniques and its applications
CO5:to find solutions to problems related to different spectroscopic systems(Spin Resonance spectroscopy).

Semester III & IV
Paper name: MODERN PHYSICS (Practicals)
Code: PHY3P05 & PHY4P06

Course Outcomes:

- **This laboratory course focuses on the advanced physics experiments chosen from Atomic and Molecular Physics, Experimental techniques, Nuclear Physics andCommunication Electronics.**
- **It provides an insight to students about experimental techniques, data analysis, error analysis while investigating physical phenomena.**
- **This course provides practical knowledge to students as they perform experiments and correlate it to theory.**

Semester IV
Paper name: COMPUTATIONAL PHYSICS PRACTICAL
Code: PHY4P07

Course Outcomes:

- **For modern day technology students need to learn programming and Python is a very useful one for Physics students.**
- **In this laboratory course students get the lessons in computer programming using Python.**

ELECTIVE COURSES

Semester III
Paper name: EXPERIMENTAL TECHNIQUES
Code: PHY3E05

Course Outcomes:
CO1:Have gained a clear understanding of different vacuum pumps and the production and maintenance of vacuum systems and its uses and needs in Physics
CO2:Understands in depth about thin film preparation and production controlling techniques and the application of thin films in the field of science & Technology
CO3:Have grasped the idea accelerator techniques and its applications
Extend their understanding of various particle accelerators and its industrial uses.
CO4: understand about different material analysis techniques and applications.
CO5:aquire knowledge about XRD and its applications

Semester IV
Paper name: COMMUNICATION ELECTRONICS
Code: PHY4E14

Course Outcomes:
CO1: Describe different types of noise and predict its effect on various analog communication systems.Express the basic concepts of analog modulation schemes.
Evaluate analog modulated waveform in time/frequency domain and also find modulation index
CO2:To understand about pulse modulation and its applications
CO3:Analyse different characteristics of the receiver.
CO4:To understand about types of signals and its characteristics.
CO5:Discuss antenna and its properties and propagation of radio waves.

Semester IV
Paper name: MICROPROCESSORS AND APPLICATIONS
Code: PHY4E20

Course Outcomes:

CO1: Study the Organization and internal architecture of the Intel 8085, learn assembly language programming and arithmetic

CO2:Aware of Memory interfacing, and different Data transfer schemes,

CO3: Learn interfacing with peripheral I/O devices

CO4:Learn about AVR microcontroller and assembly level programming

CO5:Understand about AVR programming in c

SACRED HEART COLLEGE FOR WOMEN

CHALAKUDY, THRISSUR, KERALA

AQAR 2020-21

ZOOLOGY

Criterion II - Teaching Learning & Evaluation

SUB CRITERION **- 2.6.1 - Programmes and course outcomes for all the programmes offered by the institution are stated and displayed on the website and communicated to the teachers and students.**

BSC ZOOLOGY

Course Outcomes

CORE COURSES

Semester I Course Category: Core Course I Paper name: ANIMAL DIVERSITY: NON-CHORDATA PART- I Code: ZOL1B01T	
Course Outcomes	
CO1	Describe the principles of classification and nomenclature.
CO2	Explain the five kingdom classification of living organisms.
CO3	Understand the concepts of classification of animals.
CO4	Explain the classification with examples and characteristic features of kingdom Protista and describe the morphology and structural organization of Paramecium
CO5	Describe the characteristic features of subkingdom Mesozoa
CO6	Explain the classification of phylum Porifera and elucidate the salient features of each class
CO7	Describe the characteristic features of phylum Cnidaria and Ctenophora, illustrate the classification of phylum Cnidaria down to classes and explain the structural organization of Obelia
CO8	Explain the salient features of phylum Platyhelminthes and illustrate its classification down to classes.
CO9	Explain the characteristic features and classification of super-phylum Aschelminthes and phylum Nematoda
CO10	Elucidate the characters of Pseudocoelomate minor phyla Rotifera and Gastrotricha
Semester II Course Category: Core Course II Paper name: ANIMAL DIVERSITY: NON-CHORDATA PART – II Code: ZOL2B02T	
Course Outcomes	
CO1	Explain the classification with examples and characteristic features of phylum Annelida and describe the morphology and structural organization of Neanthes
CO2	Describe the distribution, peculiarities and affinities of phylum Onychophora
CO3	Explain the classification of phylum Arthropoda;elucidate the salient features of each class and describe the morphology and structural organization of Penaeus

CO4	Describe the characteristic features of phylum Mollusca, illustrate its classification down to classes and explain the structural organization of Pila globosa
CO5	Explain the salient features of phylum Echinodermata and illustrate its classification down to classes
CO6	Understand the salient features and affinities of phylum Hemichordata
CO7	Elucidate the characters of coelomate minor phyla Phoronida, Ectoprocta and Echiura
Semester III Course Category: Core Course III Paper name: ANIMAL DIVERSITY: CHORDATA PART - I Code: ZOL3B03T	
Course Outcomes	
CO1	Explain the characteristics of chordates and outline classification of the phylum Chordata
CO2	Describe the salient features and affinities of subphylum Urochordata and its classification down to classes; elucidate the morphology and structural organization of Ascidia
CO3	Explain the salient features and affinities of subphylum Cephalochordata with reference to Branchiostoma
CO4	Describe the salient features of subphylum Vertebrata, illustrate its classification down to classes and elucidate the characteristics of division Agnatha
CO5	Enumerate the salient features of superclass Pisces and illustrate its classification down to orders and the morphology and structural organization of Mugil cephalus
CO6	Describe the salient features and affinities of class Amphibia and its classification up to orders; explain the morphology and organ systems of Hoplobatrachus tigerinus
CO7	Elucidate the characteristic features of the class Reptilia and its classification down to orders; describe the morphology and organ systems of Calotes versicolor
Semester IV Course Category: Core Course IV Paper name: ANIMAL DIVERSITY: CHORDATA PART-II Code: ZOL4B04T	
Course Outcomes	
CO1	Describe the classification of class Aves down to orders, salient features of each order with suitable examples
CO2	Describe the external characters and functional systems of Columba livia
CO3	Enumerate the salient features and classification of class Mammalia down to orders with suitable examples
CO4	Elucidate the external characters and functional systems of Oryctolagus cuniculus
CO5	Compare the circulatory, excretory and nervous systems of vertebrates

Semester IV **Course Category: Core Course IV** **Paper name: ANIMAL DIVERSITY: CHORDATA PART-II** **Code: ZOL4B04T**	
Course Outcomes	
CO1	Describe the classification of class Aves down to orders, salient features of each order with suitable examples
CO2	Describe the external characters and functional systems of Columba livia
CO3	Enumerate the salient features and classification of class Mammalia down to orders with suitable examples
CO4	Elucidate the external characters and functional systems of Oryctolagus cuniculus
CO5	Compare the circulatory, excretory and nervous systems of vertebrates
Semester I to IV **Course Category: Core Course** **Paper name: PRACTICAL – I: ANIMAL DIVERSITY** **Code: ZOL4B05P**	
Course Outcomes	
CO1	Identify and describe specified protists and acoelomate & pseudocoelomate nonchordates and perform the culture of selected protists; understand the histological features of coelenterate, platyhelminth and nematode.
CO2	Identify and describe specified coelomate non-chordates and the transverse sections of annelids; Perform mounting of the specified organs of selected nonchordates
CO3	Identify and describe specified chordates and specified bones of chordates; Prepare key for identification of venomous snakes; Perform mounting and dissection of specified organ systems of chordates.
CO4	Identify and describe selected vertebrates and specified bones of vertebrates.
Semester V **Course Category: Core Course V** **Paper name: CELL BIOLOGY AND GENETICS** **Code: ZOL5B06T**	
Course Outcomes	
CO1	Understand the principles and applications of various types of light microscopes, electron, Scanning-tunnelling and Atomic force microscope and illustrate the histological and histochemical processing of tissues
CO2	Explain the basic structure of a eukaryotic cell and the structure and functions of plasma membrane, mitochondria, lysosome, cytoskeletal elements and interphase nucleus
CO3	Illustrate the nucleosome organization of chromatin and higher order structures; structure of chromosomes and giant chromosomes
CO4	Enumerate eukaryotic cell cycle and cell division by amitosis, mitosis and meiosis

CO5	Explain the causes of transformation, characteristics of transformed cells and the role of protooncogenes and tumor suppressor genes in malignant transformation; mechanism and significance of apoptosis
CO6	Enumerate allelic and non-allelic gene interactions; supplementary, complementary, polymeric, duplicate and modifying genes and polygenic inheritance
CO7	Illustrate multiple allelism and solve problems related to blood group inheritance
CO8	Explain characteristics of linkage groups and linkage map; crossing over and calculation of recombination frequency; sex-linked, sex-influenced and sex-limited characters; sex differentiation and disorders of sexual development
CO9	Describe the mechanisms of sex determination including chromosomal, genic, haploid-diploid mechanisms; the hormonal and environmental influence on sex determination and gynandromorphism
CO10	Explain mutagenesis, mutagens and chromosomal and gene mutations
CO11	Enumerate the classification and grouping of human chromosomes; numerical and mutational human autosomal and sex chromosomal anomalies; polygenic human traits and genetic counseling
Semester V **Course Category: Core Course VI** **Paper name: BIOTECHNOLOGY, MICROBIOLOGY AND IMMUNOLOGY** **Code: ZOL5B07T**	
Course Outcomes	
CO1	Illustrate the steps in genetic engineering and animal cell culture
CO2	Explain transfection methods, transgenic animals and ethical issues of transgenic animals
CO3	Enumerate the applications of biotechnology
CO4	Understand the biological diversity of microbial forms and the various techniques for handling microbes in the laboratory
CO5	Enumerate the basic structure and life cycle of bacteria and virus
CO6	Understand the industrial and medical importance of microorganisms
CO7	Describe different types of immunity and the cells and organs of the immune system
CO8	Explain antigen, antibody, immunity and major histocompatibility complex
CO9	Enumerate autoimmune and immunodeficiency diseases and immunology of tumor and organ transplantation
Semester V **Course Category: Core Course VII** **Paper name: BIOCHEMISTRY AND MOLECULAR BIOLOGY** **Code: ZOL5B08T**	
Course Outcomes	

CO1	Understand the elements of biological importance and the non-covalent interactions that stabilize biomolecules
CO2	Describe the classification, types, structure, reactions and biological roles of carbohydrates, and diabetes Type I and II
CO3	Enumerate the properties and classification of amino acids and their standard abbreviations; hierarchial levels of protein structure, classification, separation, purification and sequencing of proteins
CO4	Explain the classification and functions of lipids and fatty acids; chemistry and structure of nucleic acids and sequencing of DNA
CO5	Understand the classification, nomenclature and properties of enzymes; enzyme action, co-enzymes, cofactors, isozymes, ribozymes and allosteric enzymes
CO6	Explain glycolysis, Kreb's cycle, glycogenesis, glycogenolysis, gluconeogenesis, HMP pathway; amino acid and fatty acid oxidation and oxidative phosphorylation
CO7	Describe the mechanism of DNA duplication and the role of enzymes
CO8	Understand the concept of gene and gene expression; genetic code and wobble hypothesis
CO9	Explain the mechanism of transcription and post-transcriptional modification of hnRNA
CO10	Enumerate the processes of translation and post-translational modification and targeting of peptides
CO11	Describe the regulation of trp operon, C-value, repetitive DNA, satellite DNA, selfish DNA, overlapping genes, pseudogenes, cryptic genes, transposons and retrotransposons
CO12	Explain the structure and life cycle of bacteriophages and the gene transfer mechanisms in bacteria
Semester V **Course Category: Core Course VIII** **Paper name: METHODOLOGY IN SCIENCE, BIOSTATISTICS AND BIOINFORMATICS** **Code: ZOL5B09T**	
Course Outcomes	
CO1	Explain science, its importance, disciplines and the major steps in formulating a hypothesis, various hypothesis models, theory, law and importance of animal models, simulations and virtual testing
CO2	Illustrate the principles and procedures in designing experiments and elaborate the requirements for carrying out experiments
CO3	Describe the ethical concerns in practicing science
CO4	Understand the Scope and role of statistics; methods and procedures of sampling; Construction of tables, charts and graphs
CO5	Calculate central tendency and measures of dispersion and application of its knowledge on hypothesis testing as well as in problem solving
CO6	Enumerate major biological databases and database search engines
CO7	Perform DNA and protein sequence analysis, including sequence alignment and sequence similarity search using BLAST, FASTA, CLUSTAL W and CLUSTAL X

CO8	Understand molecular phylogenetics and tools and methods for construction of phylogenetic trees
CO9	Explain genome sequencing technologies, functional genomics, proteomic technologies and molecular docking and drug design
Semester V Course Category: Core Course Paper name: PRACTICAL – II Code: ZOL6B15P	
Course Outcomes	
CO1	Perform experiments in cell biology and genetics including demonstration of Barr body in buccal epithelial cells of man, polytene chromosome in the salivary glands of D. melanogaster larva, mitotic division in onion root tip cells, micrometry of microscopic objects, prepare whole mounts of microscopic objects, and calculate mitotic and metaphase index from slides.
CO2	Enumerate the inheritance of major human genetic traits, pedigree chart, normal and abnormal human karyotypes, phenotypic differences of male and female Drosophila and solve problems on Monohybrid, dihybrid crosses, blood groups and sex-linked inheritance.
CO3	Understand electrophoresis, PCR, Northern blotting, Southern blotting and Western blotting, DNA sequencing and fingerprinting and isolation of genomic DNA.
CO4	Perform gram staining and preparation of culture media for bacteria and demonstrate bacterial motility by standard laboratory protocols.
CO5	Understand the detection of human blood groups and organs of immune system
CO6	Perform standard biochemical tests for the detection of reducing and nonreducing sugars, polysaccharides, proteins and lipids.
CO7	Understand the staining of mitochondria, tissue homogenization and isolation of nuclei, effect of colchicines on cell division, extraction of DNA and polyacrylamide and agaros egel electrophoresis
CO8	Solve basic problems in biostatistics and Bioinformatics
Semester VI Course Category: Core Course IX Paper name: PHYSIOLOGY AND ENDOCRINOLOGY Code: ZOL6B10T	
Course Outcomes	
CO1	Describe the regulation of digestion in man, nutrition in pregnancy and infancy, nutritional disorders, balanced diet, starvation, fasting and obesity.
CO2	Understand the mechanism of transport and exchange of respiratory gases and its neurophysiological control and physiological problems in diving mammals, new-born and aged individuals.
CO3	Describe functions, composition, coagulation, transfusion, agglutination and clinical analysis of blood, haemoglobinopathies, types of heart and common cardio-vascular problems.
CO4	Understand the osmoregulatory mechanisms in animals; excretion and its hormonal control and common renal disorders in man.

CO5	Explain the ultrastructure of skeletal muscles and biochemical events and energetics of muscle contraction.
CO6	Understand the different types of nerve cells, glial cells and nerve fibres, and the mechanism of nerve impulse transmission
CO7	Understand the types, physiology and significance of bioluminescence, and the structure and functions of electric organs.
CO8	Describe invertebrate neuro-endocrine organs and hormones, vertebrate endocrine glands, their hormones and functions
CO9	Understand the concept of neurosecretion and the mode of action of peptide and steroid hormones.
Semester VI Course Category: Core Course X Paper name: REPRODUCTIVE AND DEVELOPMENTAL BIOLOGY Code: ZOL6B11T	
Course Outcomes	
CO1	Explain the reproductive strategies in invertebrates and vertebrates and structural and functional features of human reproductive system.
CO2	Describe process of fertilization, pregnancy, gestation, placentation, parturition and lactation in humans.
CO3	Explain the scope of reproductive technologies in infertility management; prenatal diagnostic techniques and methods of fertility control.
CO4	Understand the phases and theories of development, and classification of eggs
CO5	Enumerate the types of cleavage, arrangement of blastomeres, germ layers and their derivatives, cell lineage in Planocera and different types of blastula.
CO6	Illustrate the early developmental process of egg in Amphioxus, frog, chick and man
CO7	Explain the basics of cell differentiation and its genetic control, stem cells and applications of stem cell technology
CO8	Describe parthenogenesis, types, and significance
CO9	Explain fate map construction, Spemann's constriction experiments on amphibian embryos, organizers in development, embryonic induction, gradient experiments in sea urchin eggs, cloning experiments in sheep and teratogenesis
Semester VI Course Category: Core Course XI Paper name: ENVIRONMENTAL AND CONSERVATION BIOLOGY Code: ZOL6B12T	
Course Outcomes	
CO1	Explain the structure of ecosystem and its functioning through energy flow and nutrient cycling.
CO2	Enumerate biogeochemical cycles and understand the concept of limiting factors
CO3	Describe the ecology of population, community and habitat as a self regulating system
CO4	Understand various types of population interactions and appraise the co-evolution

CO5	Comprehend the diverse environmental and sustainability challenges ranging from local to global and the establishment of perfect harmony between economic development, social issues and environmental conservation
CO6	Enumerate the several tools and techniques employed for studies on populations, communities and ecosystems.
CO7	Understand the threats to biodiversity, and strategies adapted for the conservation of diversity of organisms.
CO8	Describe the various international strategies for conserving biodiversity
CO9	Describe the toxic chemicals, their toxicity levels and the health hazards caused by them
Semester VI Course Category: Core Course XII Paper name: ETHOLOGY, EVOLUTION AND ZOOGEOGRAPHY Code: ZOL6B13T	
Course Outcomes	
CO1	Describe the patterns and mechanisms of animal behaviour
CO2	Illustrate biological rhythms and the chemical basis of communication
CO3	Identify major evolutionary transitions over time, and explain the tools and evidences that support current hypotheses of the history of life on earth
CO4	Describe the evidences for evolution and its required corollaries
CO5	Explain the various theories of evolution
CO6	Describe the mechanisms by which evolution occurs
CO7	Recognize the significance of reproductive isolation in reducing gene flow between populations, biological and morphological species concepts and distinguish between prezygotic and postzygotic barriers to reproduction
CO8	Review the events in human evolution
CO9	Explain ecological and historical foundations for understanding the distribution and abundance of species, and their changes over time and comprehend the basic principles of biogeography as a discipline
Semester VI Course Category: Core Course Paper name: PRACTICAL – III Code: ZOL6B16P	
Course Outcomes	
CO1	Perform standard laboratory experiments for the estimation of Hb, presence of hCG/abnormal constituents in urine, detection of blood pressure, bleeding and clotting time and identification of formed elements in blood
CO2	Identify selected stages in the development of frog and chick and chosen larval forms of invertebrates and vertebrates

CO3	Carry out experiments of laboratory standards to estimate water quality parameters including, dissolved Oxygen, Carbon dioxide, hardness and pH; determination of adulteration of selected food items and identify marine planktons and soil organisms
CO4	Demonstrate the behavioural response of earthworm/dipteran larva to selected stimuli
CO5	Describe homologous , analogous and vestigial organs, connecting links, adaptive radiation and evolution of man
CO6	Illustrate zoogeographical realms, Wallace line, Weber line, Wallacea and the distribution of Peripatus, lung fishes, Sphenodon, monotremes and marsupials
CO7	Identify the normal and selected abnormal human karyotypes and inheritance of chosen traits from pedigree charts/describe ornamental and other culture fishes/ describe chosen beneficial and harmful insects

ELECTIVE COURSES

Semester VI
Course Category: Elective Course I
Paper name: AQUACULTURE, ANIMAL HUSBANDRY AND POULTRY SCIENCE
Code: ZOL6B14(E)02T

Course Outcomes

CO1	Explain aquaculture and the process of prawn, mussel and pearl culture
CO2	Illustrate the methodology of pisciculture and understand common culture fishes and ornamental fishes
CO3	Identify major fishing crafts and gear and enumerate fish utilization and preservation
CO4	Enumerate the poultry rearing techniques and understand major breeds of fowl
CO5	Understand the major breeds of cattle, cattle feeds and diseases of cattle
CO6	Illustrate the steps in dairy processing and identify the role of dairy development in rural economy

OPEN COURSES

Semester V
Course Category: Open Course I
Paper name: REPRODUCTIVE HEALTH AND SEX EDUCATION
Code: ZOL5D01T

Course Outcomes

CO1	Understand the reproductive health, and importance of sex education for teen and youth.

CO2	Explain the chromosomal mechanism of sex determination and sex chromosomal anomalies.
CO3	Describe the structural and functional features of human reproductive system, fertilization, implantation, pregnancy, gestation, placenta, parturition and lactation.
CO4	Explain the scope of reproductive technologies in infertility management and the assisted reproductive techniques.
CO5	Understand the different methods of prenatal diagnosis and associated ethical issues
CO6	Describe the different methods of fertility control.
CO7	Understand the symptoms, mode of transmission, diagnosis and treatment of different sexually transmitted diseases and their socio economic dimensions.
CO8	Describe sexual orientation, sexual abuse and myths
CO9	Understand the ethical aspects of sex

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COMMERCE

Criterion II - Teaching Learning & Evaluation

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Programme Specific Outcomes(PSOs)

PSOs	PROGRAMME SPECIFIC OUTCOMES
PSO1	The students can get the knowledge, skills and attitudes during the end of the course.
PSO2	By goodness of the preparation they can turn into a Manager, Accountant, Management Accountant, Bank Manager, Auditor, Company Secretary, Teacher, Professor, Stock Agents, Government employment and so on
PSO3	Students will prove themselves in different professional exams like CA, CMA, CS,KPSC,UPSC,SSC etc.
PSO4	The students will acquire the knowledge, skills in different areas of communication, decision making, innovation and problem solving in day to day business activity.
PSO5	Students will gain thorough subject skills within various disciplines of finance, auditing and taxation, accounting, management, communication, computer
PSO6	Students can also get practical skills to work as accountant, audit assistant, tax consultant, computer operator and as well as other financial supporting services.
PSO7	Students will learn relevant advanced accounting carrier skills, applying both quantitative and qualitative knowledge to their future careers in business.
PSO8	Students will be able to do their higher education and can make research in the field of finance and commerce.
PSO9	Students will be able to do computerised office work and accounting.

BCOM FINANCE

NAME OF THE COURSE	COURSE CODE	COURSE OUTCOMES	PSO ADDRESSED
BUSINESS MANAGEMENT **Core 1**	**BCMIB01**	This course is designed to understand the process of business management and its functions. To familiarize the students with current management practices. To understand the importance of ethics in business. To acquire knowledge and capability to develop ethical practices for effective management.	PSO1
FINANCIAL ACCOUNTING Core 2	BCM2B02	This course is designed to equip the students with the skills of preparing financial statements for various types of organizations. To enable the students to acquire knowledge about financial reporting standards and to understand	PSO2 nd PSO3

		corporate accounting methods.	
BUSINESS REGULATIONS	BCM3BO3	To familiarize the students with certain statutes concerning and affecting business organizations in their operations	PSO3 and PSO4
CORPORATE ACCOUNTING	**BCM3 BO4**	To help the students to acquire conceptual knowledge of the fundamentals of the corporate accounting and the techniques of preparing the financial statements	PSO2, PSO3 & PSO4
COST ACCOUNTING	**BCM4B05**	To familiarize the students with the various concepts and elements of cost. To create cost consciousness among the students	PSO2, PSO3
CORPORATE REGULATIONS	**BCM4BO6**	To familiarise the students with corporate law and to make them aware of the importance of corporate governance in the management of organizations.	PSO3

ACCOUNTING FOR MANAGEMENT	**BCM5B07**	To enable the students to understand the concept and relevance of Management Accounting. To provide the students an understanding about the use of accounting and costing data for planning, control, and decision making	PSO2, PSO5, PSO6, PSO4
BUSINESS RESEARCH METHODS	**BCM5B08**	To enable the students to acquire basic knowledge in business research methods and to develop basic skills in them to conduct survey researches and case studies.	PSO8
INCOME TAX LAW AND ACCOUNTS	**BCM5 B09**	To impart basic knowledge and equip students with application of principles and provisions Income - tax Act, 1961 amended up to date	PSO5
INCOME TAX AND GST	**BCM6 B12**	To impart basic knowledge and equip students with application of principles and provisions Income - tax Act, 1961 and GST Act 2016	PSO5, PSO6

AUDITING AND CORPORATE GOVERNANCE	**BCM6B13**	To provide knowledge of auditing principles and techniques and to familiarize the students with the understanding of issues and practices of corporate governance in the global and Indian context.	PSO3, PSO5
MANAGERIAL ECONOMICS	**BCM1C01**	The objective of the course is to acquaint students with the basic principles of micro and macroeconomics for developing the understanding of theory of the firm, markets and the macro environment, which would help them in managerial decision making processes.	PSO1
MARKETING MANAGEMENT	**BCM2C02**	To provide basic knowledge about the concepts, principles, tools and techniques of marketing. To impart necessary knowledge which helps the student to choose a career in the field of	PSO1,

		marketing. To expose the students to the latest trends in marketing	
HUMAN RESOURCES MANAGEMENT	**BCM3C03**	To familiarize the students with the different aspects of managing human resources in an organization. To equip the students with basic knowledge and skills required for the acquisition, development and retention of human resources.	PSO1
QUANTITATIVE TECHNIQUES FOR BUSINESS	**BCM4C04**	To familiarize students with the use quantitative techniques in managerial decision making.	PSO2, PSO3,PSO8
FINANCIAL MARKETS AND SERVICES	**BCM5B10**	To provide basic knowledge about the structure, organization and working of the financial system in India.	PSO3, PSO5
FINANCIAL MANAGEMENT	**BCM5 B11**	To familiarize the students with the concepts, tools and	PSO3, PSO5, PSO7

		practices of financial management. To learn about the decisions and processes of financial management in a business firm.	
FUNDAMENTALS OF INVESTMENTS	**BCM6B14**	To familiarize the students with the world of investments. To provide a theoretical framework for the analysis and valuation of investments.	PSO3,PSO5
FINANCIAL DERIVATIVES	**BCM6B15**	To acquire knowledge about financial derivatives and their features. To know about various risks associated with derivatives	PSO3, PSO5
E-COMMERCE	**BCM5D01**	To enable the students to understand the basics of E- Commerce. To Gain a practical orientation to E-Commerce and E-Business management.	PSO1

BCOM COMPUTER APPLICATIONS

NAME OF THE COURSE	COURSE CODE	COURSE OUTCOMES	PSO ADDRESSED
BUSINESS MANAGEMENT **Core 1**	**BCM1B01**	This course is designed to understand the process of business management and its functions. To familiarize the students with current management practices. To understand the importance of ethics in business. To acquire knowledge and capability to develop ethical practices for effective management.	PSO1
FINANCIAL ACCOUNTING **Core 2**	**BCM2B02**	This course is designed to equip the students with the skills of preparing financial statements for various types of organizations. To enable the students to acquire knowledge about financial reporting standards and to understand corporate accounting methods.	PSO1,PSO2

BUSINESS REGULATIONS	**BCM3BO3**	To familiarize the students with certain statutes concerning and affecting business organizations in their operations	PSO3, PSO4
CORPORATE ACCOUNTING	**BCM3 BO4**	To help the students to acquire conceptual knowledge of the fundamentals of the corporate accounting and the techniques of preparing the financial statements	PSO2, PSO3, PSO4
COST ACCOUNTING	**BCM4B05**	To familiarize the students with the various concepts and elements of cost. To create cost consciousness among the students	PSO2, PSO3
CORPORATE REGULATIONS	**BCM4BO6**	To familiarise the students with corporate law and to make them aware of the importance of corporate governance in the management of organizations.	PSO3
ACCOUNTING FOR MANAGEMENT	**BCM5B07**	To enable the students to understand the concept and relevance of Management	PSO2,PSO4, PSO5, PSO6

		Accounting. To provide the students an understanding about the use of accounting and costing data for planning, control, and decision making	
BUSINESS RESEARCH METHODS	**BCM5B08**	To enable the students to acquire basic knowledge in business research methods and to develop basic skills in them to conduct survey research and case studies.	PSO8
INCOME TAX LAW AND ACCOUNTS	**BCM5 B09**	To impart basic knowledge and equip students with application of principles and provisions Income - tax Act, 1961 amended up to date	PSO5
INCOME TAX AND GST	**BCM6 B12**	To impart basic knowledge and equip students with application of principles and provisions Income - tax Act, 1961 and GST Act 2016	PSO5, PSO6
AUDITING AND CORPORATE GOVERNANCE	**BCM6B13**	To provide knowledge of auditing principles and techniques and	PSO3, PSO5

		to familiarize the students with the understanding of issues and practices of corporate governance in the global and Indian context.	
MANAGERIAL ECONOMICS	**BCM1C01**	The objective of the course is to acquaint students with the basic principles of micro and macroeconomics for developing the understanding of theory of the firm, markets and the macro environment, which would help them in managerial decision making processes.	PSO1
MARKETING MANAGEMENT	**BCM2C02**	To provide basic knowledge about the concepts, principles, tools and techniques of marketing. To impart necessary knowledge which help the student to choose a career in the field of marketing. To expose the students	PSO1

		to the latest trends in marketing	
HUMAN RESOURCES MANAGEMENT	**BCM3C03**	To familiarize the students with the different aspects of managing human resources in an organization. To equip the students with basic knowledge and skills required for the acquisition, development and retention of human resources.	PSO1
QUANTITATIVE TECHNIQUES FOR BUSINESS	**BCM4C04**	To familiarize students with the use quantitative techniques in managerial decision making.	PSO2, PSO3, PSO8
COMPUTER APPLICATIONS IN BUSINESS	**BCM5B10**	To help the students to acquire basic knowledge about computers and its applications in various areas of business. To enable the students to understand the modern trends and technologies in computer applications.	

BUSINESS INFORMATION SYSTEMS	**BCM5 B11**	To enable the students to acquire basic knowledge in information technology and its relevance to the various areas of business.	PSO9
OFFICE AUTOMATION TOOLS	**BCM6B14**	To enable the students to acquire basic knowledge in the various office automation tools and its applications in the various areas of business.	PSO9
COMPUTERISED ACCOUNTING WITH TALLY	**BCM6B15**	To enable the students to acquire basic knowledge in the computerized accounting systems and its applications in the area of business.	PSO9
E-COMMERCE	**BCM5D01**	To enable the students to understand the basics of E- Commerce. To Gain a practical orientation to E-Commerce and E-Business management.	PSO1

MCOM FINANCE

NAME OF THE COURSE	COURSE CODE	COURSE OUTCOMES	PSO ADDRESSED
BUSINESS ENVIRONMENT AND POLICY	MCM1C01	Analyse the environment of a business from the various internal and external perspectives Evaluate how the economic environment and its configurations influence business decision making. Apply the role of New Economic Policy and the Economic reforms in the perspective of Business. To understand the various policies related to FDI. & Multi -National Corporations. To give an in-depth knowledge about the recent Government policies regarding Environment management.	PSO2, PSO4

CORPORATE GOVERNANCE AND BUSINESS ETHICS	**MCM1C02**	To make an understanding about the concept of Corporate Governance and the communication mechanism. To Apply the various Theories and Models of Corporate Governance and the recent initiatives in India and abroad. To make an understanding about the various committees on Corporate Governance and the Legal framework. Evaluate the role of various stakeholders, whistle blowing and the recent developments in India. To create Important ethical principles in Business in the cultural diversity.	PSO1, PSO4
QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS	**MCM1C03**	To remember and understand properties of	PSO3, PSO4, PSO8

		probability distribution and to solve the problems. To apply hypothesis testing for validation and interpretation of the results. To create soft skill knowledge for data analysis To understand the tool for finding the relationship between variables and its magnitude. To evaluate the application of non-parametric tests for validation.	
MANAGEMENT THEORY AND ORGANISATIONAL BEHAVIOR	**MCM1C04**	To impart a thorough understanding about various concepts and theories in management and organisational behaviour. Understand the various psychological processes and different motivation theories which will	PSO2, PSO4

		influence the performance. To evaluate the personality traits of human beings and various ethical issues in Organisational Behaviour. To understand the importance of group dynamics, need for work life balance and managing change. To apply the various terms related to organisational culture and Techniques for managing organisational relationships.	
ADVANCED MANAGEMENT ACCOUNTING	MCM1C05	To remember and understand the knowledge to use different methods of measuring financial and non-financial performance. To measure and solve financial and non-financial performance-based business problems	PSO2, PSO4

		To understand and apply comprehensive performance management initiatives for organizations Understand and apply the significance of risk and uncertainty in decision making.. To apply various techniques of interpreting Variances.	
ADVANCED CORPORATE ACCOUNTING	MCM2C06	To understand the theory and practice of Corporate Financial Accounting. To create problem solving capacity in Corporate restructuring and liquidation To understand skill in recognition, measurement and presentation of deferred tax To understand insight into Accounting standards of IFRS, Ind AS, and Lease accounting	PSO 7

		To evaluate different types of accounting	
ADVANCED STRATEGIC MANAGEMENT	MCM2C07	To understand the Strategic Management Process and to provide basic ideas about the Social and ethical issues. To understand and evaluate the Environment analysis and SWOC. Evaluate the strategic options at Corporate level and the different growth strategies To understand the Strategy implementation and different approaches in planning and allocating resources To apply and evaluate the Strategy evaluation, tools and techniques used and processes with case studies.	PSO4
STRATEGIC COST ACCOUNTING	MCM 2C08	To understand the conceptual knowledge of Cost Accounting, comparison of cost accounting with	PSO2

		other branches of accounting. Provide students with a basic understanding of the different terminologies used in Cost Accounting and different types of cost Understand the treatment regarding the application of process costing and treatment of Joint products and By products. To understand and evaluate the practical application of Absorption Costing, Throughput Accounting, ABC Analysis and Transfer Pricing. To evaluate the application of Productivity Management	
INTERNATIONAL BUSINESS	MCM2C09	To study about the Theories of International Trade and reasons for internationalization Evaluate the International Business	PSO2, PSO4

		Environment opportunities and threats of Indian Companies To understand the Strategy development in IB and the different business entry strategies. To evaluate the role of International economic situations in the development of Business. To analyse the different strategies of internationalization and the contribution to Indian Course outcome economy.	
MANAGEMENT SCIENCE	MCM2C10	To understand students with concepts of management science To evaluate the application of various tools which support the decision making process. To apply inventory management and manage the queue system in the service sector.	PSO4

		To evaluate and create the technique of project planning scheduling and controlling To understand knowledge in share analysis and different strategies in game theory	
FINANCIAL MANAGEMENT	MCM3C11	To understand the role of finance and finance manager in an organization To Evaluate and apply sources of financing and corresponding cost of capital To Understand and evaluate working capital decisions To understand and apply Capital structure and leverage analysis To understand and apply dividend theory and dividend decisions	PSO2, PSO4
INCOME TAX: LAW, PRACTICE AND TAX PLANNING I	MCM3C12	To understand tax planning tips to individuals on the basis of residential status.	PSO5, PSO6

		To understand and evaluate the computation of income under five heads and to apply tax planning tips for these five heads of income. To understand and apply tax planning tips for Hindu Undivided families, set off and carry forward provisions and tax planning tips for individuals. To remember and understand the powers of income tax authorities and should be able to calculate advanced tax liability and TDS of an individual. To create the ability to file the return of income of individuals and should be aware of different types of assessment.	
RESEARCH METHODOLOGY	MCM3C13	To understand and apply different research approaches and methodologies To evaluate and apply Population	PSO8

		survey and sample survey – theories and techniques To understand and apply the Data collection methods and enable them to conduct a comprehensive research To Evaluate the Measurement and scaling and the validation and reliability testing To understand and evaluate Data processing, analysing, interpretation and report writing create awareness about plagiarism.	
FINANCIAL DERIVATIVES AND RISK MANAGEMENT	**MCM4C14**	To understand and apply the terms and concepts of underlying risk management. To understand and evaluate growth and development of the future. To understand and apply the option trading and various strategies involved in it.	PSO5

		To understand about the pricing of options- call and put option To evaluate and apply SWAP contracts and pricing of different instruments under SWAP.	
INCOME TAX: LAW, PRACTICE AND TAX PLANNING II	MCM4C15	To understand and apply tax planning tips for partnership firms, AOP and BOI in India. To understand and apply tax liabilities of cooperative society and trust and should also be able to advocate tax planning tips to them. To understand and evaluate the tax liability of Companies including shipping companies. To understand and evaluate the implications of tax on various managerial decisions To understand and evaluate the tax liability of business units.	PSO5, PSO6

INVESTMENT MANAGEMENT	MCM3EF01	To understand the concept of risk, return, diversification and hedging To understand and apply the different types of bonds and bond valuation Provide thorough understanding and evaluation of fundamental analysis and technical analysis To understand the measurement of portfolio risk, optimal portfolio, portfolio selection models To understand and create portfolio management, portfolio evaluation and revision	PSO2, PSO4
FINANCIAL MARKETS AND INSTITUTIONS **Code: MCM 02**	MCM3EF 02	To provide the students with sound information and knowledge of the broad framework of financial markets and institutions. To acquire knowledge in national and international commodity market	PSO5

		To understand various types financial instruments and their sale and buy back To gain knowledge about the working of major financial institutions. To familiarize with different forms of foreign capital inflows and its role in Indian financial system	
INTERNATIONAL FINANCE	MCM4EFT03 /MCM4EF03	To familiarise with the concepts and significance of International Finance, IDA,IFC and ADB To understand international financial markets, foreign exchange rate, its measurement and movements To acquire knowledge in exchange rate theories and models of exchange rate, risk management in foreign exchange To develop knowledge in	PSO5

		international capital budgeting , asset liability management and foreign portfolio management	
ADVANCED STRATEGIC FINANCIAL MANAGEMENT	MCM4EF04	To build an understanding about the concepts, vital tools, and techniques used for financial decision making To understand the concept of capital structure planning and policies, and to find the value of firm To familiarise with the concept of lease financing and various methods of lease financing To gain knowledge in theories of merger, different types of merger and the financial impact of merger To gain knowledge in theories of merger, different types of merger and the financial impact of merger. To understand takeover strategy	PSO5, PSO7

		and procedure and regulations	
COMMUNICATION SKILL/MENTAL ABILITY/NUMERICAL SKILL	MCM1A03	To attain skill required for various competitive examinations both for public sector and private sector To generate interest among students to face competitions with confidence	PSO3, PSO4, PSO5,
Spreadsheet Application	MCM2A04	To gain an understanding of how managers use spreadsheet analysis to formulate and solve business problems and to support managerial decision making To familiarise with the processes needed to develop, report, and analyse business	PSO6

MODULE WISE COURSE OUTCOMES

UNDERGRADUATE			
SUBJECTS	**MODULE**	**OUTCOMES**	**PSO ADDRESSED**
Business Management	Module 1	Understand the concept of management and its functions	PSO1
	Module 2	Create a knowledge about different styles of management	
	Module 3	Acquire knowledge about the ethics and morality in business	
	Module 4	Create an insight into the Corporate Social Responsibility, its relations with business ethics and corporate governance	
	Module 5	Familiarise the students with emerging concepts in management	
Financial Accounting	Module 1	Provide knowledge about single entry system of accounting Familiarise the students about determination of profit or loss	PSO2
	Module 2	Provide knowledge about company accounts for issue of shares	
	Module 3	Provide knowledge	

		about company accounts for issue of debentures	
	Module 4	Enable the students to acquire knowledge about convergence to International Financial Reporting Standards	
	Module 5	Equip the students with IFRS related financial statements of companies	
Managerial Economics	Module 1	Acquaint students with the basic economic tools in managerial economics. Understand the theory of consumer behaviour and various approaches. Familiarize students with various market structures - perfect competition, monopoly, monopolistic competition, and oligopoly. Familiarize students with overview of Indian economy and role of government in market economy	PSO1
Marketing Management	Module 1	Provide basic knowledge about the concepts, principles, tools and techniques of marketing.	PSO2

	Module 2 Module 3 Module 4 Module 5	Enable the students to acquire knowledge about product management. Familiarize the students with various distribution channels. Equip the students with various integrated marketing communication skills. Expose the students to the latest trends in marketing.	
Basic Numerical Methods	Module 1 Module 2 Module 3 Module 4 Module 5	Enable the students to acquire knowledge about numerical expressions and equations. Enable the students to acquire knowledge about matrices. Enable the students to acquire the knowledge about sequence,series and progressions. Enable the students to acquire knowledge about interest and time value. Enable the students to acquire knowledge about descriptive statistics.	PSO4
Professional Business Skills	Module 1	Provide knowledge about professionalism in business	PSO3

	Module 2 Module 3 Module 4 Module 5	Familiarize students with various E-learning opportunities. Eqip the students with business data analysis. Enable the students with the knowledge about socio-cyber informatics. Familiarize the students with digital marketing.	
Business Regulations	Module 1 Module 2 Module 3 Module 4 Module 5	Provide knowledge about various business laws. Provide knowledge about various special contracts such as contract of indemnity, guarantee, bailment and agency and so on. Acquaint the students with Sale of Goods Act 1930. Acquaint the students with the Consumer Protection Act 1986. Acquaint the students with The Limited Liability Partnership Act 2008.	PSO4
Corporate Accounting	Module 1	Acquire knowledge about redemption of preference shares	PSO4

		and debentures, bonus shares, bur back of shares.	
	Module 2	Familiarize students with financial statements of Banking companies.	
	Module 3	Familiarize students with accounts of Life Insurance.	
	Module 4	Provide knowledge about preparation of consolidated financial statements of group companies.	
	Module 5	Acquire knowledge about important disclosure based accounting standards.	
Human Resources Management	Module 1	Familiarize the students with the different aspects of managing human resources in an organisation.	PSO3
	Module 2	Provide knowledge about human resource planning, recruitment and selection.	
	Module 3	Acquire knowledge about placement, induction and internal mobility of human resources.	
	Module 4	Provide ideas about the importance of performance appraisal and career planning.	

	Module 5	Enable students to provide knowledge about compensation management and grievance redressal.	
Entrepreneurship Development	Module 1 Module 2 Module 3 Module 4 Module 5	Familiarise students with the concepts of entrepreneurship. Develop knowledge about institutional support and incentives to entrepreneurs. Expose the students with the idea of Micro, Small and Medium Enterprises. Familiarize students with the procedure of setting up an industrial unit. Equip the students for preparing project reports.	PSO3
Banking and Insurance	Module 1 Module 2 Module 3 Module 4	Enable the students to acquire the basics of banking. Provide knowledge about various negotiable instruments. Familiarize the students with the modern trends in banking. Enable the students to acquire basics of Insurance Companies and its functions.	PSO2

	Module 5	Acquire knowledge about life insurance and regulations of Insurance business.	
Cost Accounting	Module 1 Module 2 Module 3 Module 4 Module 5	Expose the students with the importance of cost accounting. Familiarize students with the various techniques of material cost control. Familiarise students with the methods of labour and overhead cost control. Equip the students with various costing methods such as job costing, contract costing, unit costing, process costing, service costing etc. Acquaint the students with the knowledge of application of various cost control techniques.	PSO2
Corporate Regulations	Module 1 Module 2 Module 3 Module 4	Provide awareness about Companies Act 2013. Familiarize the students with the procedure of formation of companies . Enable the students with the knowledge about various transactions in relation to share capital of a company.	PSO2

		Provide knowledge about management of companies and corporate governance.	
	Module 5	Acquire knowledge about various companies meeting; its conducting winding up procedure.	
Quantitative Techniques for Business	Module 1	Familiarize students with the use of quantitative techniques in managerial decisions.	PSO7
	Module 2	Acquire knowledge about correlation and regression analysis.	
	Module 3	Acquaint students with the knowledge of set theory, Venn diagrams and probability.	
	Module 4	Enable the students with knowledge of application of various theoretical distributions.	
	Module 5	Provide knowledge about quantitative approach to decision making.	

Accounting for management	Module 1	Enable the students to understand the concepts and relevance of Management Accounting.	PSO6
	Module 2	Provide knowledge regarding analysis and interpretation of financial statements based on various methods.	
	Module 3	Familiarize students with the knowledge of ratio analysis for financial statement analysis.	
	Module 4	Acquire knowledge about fund flow and cash flow analysis.	
	Module 5	Equip the students with the knowledge of managerial decision making with the help of CVP Analysis.	

Business Research Methods	Module 1 Module 2 Module 3 Module 4 Module 5	Enable the students to acquire basic knowledge in business research methods. Provide awareness about research design and various types of research design. Acquire knowledge about various data collection methods. Acquire knowledge about data processing and its process. Familiarize students with research report preparation.	PSO8

Income Tax Law and Accounts	Module 1 Module 2 Module 3 Module 4 Module 5	Provide awareness about basic concepts, principles and provisions of Income Tax Act, 1961. Equip the students to compute income under the head salary. Equip the students to compute income under the head house property. Equip the students to compute income under the head business or profession. Equip the students to compute income under the head capital gains.	PSO6

Financial Markets and Services	Module 1 Module 2 Module 3 Module 4 Module 5	Provide basic knowledge about the significance and functions of the financial system. Acquire knowledge about the money market and its operations. Acquire knowledge about the capital market and its functioning. Familiarize students with the awareness about the various financial institutions. Provide awareness about different Regulatory Institutions.	PSO4
Fundamentals of Investments	Module 1 Module 2	Acquire knowledge about different investment alternatives. Familiarize the students with security valuation.	PSO4

	Module 3 Module 4 Module 5	Studying approaches to security analysis. Equip the students with portfolio analysis. An insight into the investor protection in stock exchange.	
Income Tax and GST	Module 1 Module 2 Module 3 Module 4 Module 5	Studying about set off and carry forward of losses. Provide knowledge about filing returns of income. An insight into Goods and Services Tax. Studying about the registration procedures. Learn about payment of tax, penalties etc.	PSO6

Auditing and Corporate Governance	Module 1 Module 2 Module 3 Module 4 Module 5	Provide knowledge regarding auditing, its object and its principles. Understand the audit procedures, valuation of assets and liabilities, vouching etc. Learn internal control and internal check systems. Familiarize the importance of corporate governance. Study about major corporate governance failures.	PSO5

Financial Derivatives	Module 1 Module 2 Module 3 Module 4 Module 5	Understand the meaning and types of Derivatives. Learning the difference between cash market and derivative market. Studying in detail what are forwards and futures. An insight into options contract. Learning about swaps.	PSO5
Financial Management	Module 1 Module 2 Module 3 Module 4 Module 5	Familiarising with the term Financial Management. Studying capital budgeting techniques. Give an insight into what is the cost of capital and the sources of finance. To learn about the dividend decision and its relevance. Study about the term working capital and its management.	PSO5

POST GRADUATE			
SUBJECTS	MODULE	OUTCOMES	PSO ADDRESSED
Business Environment And Policy	Module 1	Provide general awareness about the business environment.	PSO2, PSO4
	Module 2	Understand economic systems,planning and public private partnership in the Indian economy.	
	Module 3	Familiarize the characteristics,policies and reforms of the Indian economy	
	Module 4	Study forms and policies of foreign direct investment and institutional investment.	
	Module 5	Understand the environment management and degradation of the natural environment	

Quantitative Techniques for business decisions	Module 1 Module 2 Module 3 Module 4 Module 5	Provide a general idea about various quantitative techniques Understand the concept of parametric tests and its application. Familiarize the assumptions,features ,advantages and application of non-parametric tests Establish awareness about types and application of correlation and regression Understand the use excel and SPSS for quantitative methods	PSO3 PSO4 PSO8
Corporate Governance and Business Ethics	Module 1 Module 2	Understand the concept of corporate governance and principles of corporate governance Familiarize the conceptual framework of corporate governance and legislative framework of corporate governance	PSO1, PSO4

	Module 3 Module 4 Module 5	Understand the committees on corporate governance Understand the elements of corporate governance and analyse the power ,duties and responsibilities of directors. Understand meaning,scope and definition of business ethics and concept of Human Resource Management.	
Management theory and organizational behaviour	Module 1 Module 2 Module 3 Module 4 Module 5	Provide the basic knowledge about management concepts and organizational behaviour. Made an idea about basic psychological process Understand an overall idea about the various theories and issues of personality development Made a general idea about group dynamic and inter group relationships. Familiarize techniques of organizational developments.	PSO2, PSO4

Advanced Management Accounting	Module 1	Understand the knowledge to use different methods of measuring financial and non - financial performances.	PSO2, PSO4
	Module 2	Helps in measuring and solving financial and non financial performance based business problems.	
	Module 3	Understand and apply the significance of risk and uncertainty in decision making.	
	Module 4	Apply various techniques of interpreting variances.	
	Module 5	Understand and apply comprehensive performance management initiatives for organizations.	

Communication Skills/Mental Ability/Numerical Skill	Section A Section B Section C	Provide English language skills/grammar/fill in the blank/match/synonym /antonym Provide Mental ability skills for facing various competitive examinations Provide mathematical and statistical skills for various competitive examinations.	PSO3O, PSO4, PSO5
Advanced Corporate Accounting	Module 1 Module 2 Module 3 Module 4 Module 5	Understand the theory and practice of Corporate Financial Accounting Create problem solving capacity in Corporate Restructuring and Liquidation Understand skill in recognition, measurement and presentation of deferred tax Understand insight into Accounting Standards of IFRS, Ind AS, and Lease Accounting. Evaluate different types of Accounting.	PSO7,

Advanced Strategic Management	Module 1	Understand the Strategic Management Process and provide basic idea about the social and ethical issues	PSO4
	Module 2	Understand and evaluate the environment analysis and SWOC	
	Module 3	Evaluate the strategic options at corporate level and the different growth strategies.	
	Module 4	Understand the strategy implementation and different approaches in planning and allocating resources.	
	Module 5	Apply and evaluate the strategic evaluation , tools and techniques used and processes with case studies.	

Strategic Cost Accounting	Module 1	Understand the conceptual knowledge of Cost Accounting , comparison of Cost Accounting with other branches of accounting	PSO2
	Module 2	Provide students with basic understanding of the different terminologies used in Cost Accounting and different types of cost.	
	Module 3	Understand the treatment regarding the application of process costing and treatment of Joint products and By products.	
	Module 4	Understand and evaluate the practical application of Absorption Costing, Throughput Accounting, ABC Analysis and Transfer Pricing.	
	Module 5	Evaluate the application of Productivity Management.	

International Finance	Module 1 Module 2 Module 3 Module 4 Module 5	Study about the theories of International Trade and reasons for internationalisation. Evaluate the International Business Environment opportunities and threats of Indian Companies. Understand the strategy development in IB and different business entry strategies Evaluate the role of International Economic situations in the development of Business. Analyse the different strategies of internationalisation and the contribution to the Indian economy.	PSO2, PSO4

Management Science	Module 1 Module 2 Module 3 Module 4 Module 5	Understand students with concepts of management science. Evaluate the application of various tools which support decision making process Apply inventory management and managing the queue system in the service sector. Evaluate and create the technique of project planning, scheduling and controlling. Understand knowledge in share analysis and different strategies in game theory.	PSO4
Spreadsheet Application	Module 1 Module 2 Module 3 Module 4 Module 5	Give an introduction to Excel Create formula using Spreadsheet Create Spreadsheet charts Helps in data analysis Understand various spreadsheet tools.	PSO6

Financial Management	Module 1 Module 2 Module 3 Module 4 Module 5	Understand the role of finance and finance manager in an organisation Evaluate and apply sources of financing and corresponding cost to capital Understand and evaluate working capital decisions Understand and apply Capital Structure and leverage analysis Understand and apply dividend theory and dividend decisions	PSO2, PSO4

Income Tax: Law, Practice and Tax Planning I	Module 1	Understand Tax Planning tips to individuals on the basis of residential status.	PSO5, PSO6
	Module 2	Understand and evaluate the computation of income under five heads and to apply tax planning tips for these five heads	
	Module 3	Understand and apply tax planning tips for Hindu Undivided Family, set off and carry forward provisions and tax planning tips for individuals.	
	Module 4	Understand the powers of Income Tax Authorities and calculate advance tax liability and TDS of an individual.	
	Module 5	Create the ability to file the return of income of individuals and be aware of different types of assessment.	

Research Methodology	Module 1	Understand and apply different research approaches and methodologies	PSO8
	Module 2	Evaluate and apply population survey and sample survey, theories and techniques.	
	Module 3	Understand and apply the data collection methods and enable them to conduct comprehensive research.	
	Module 4	Evaluate the measurement and scaling and the validation and reliability testing.	
	Module 5	Understand and evaluate data processing, analysing, interpretation and report writing and create awareness about plagiarism.	

Investment Management	Module 1	Understand the concept of risk, return, diversification and hedging.	PSO2, PSO4
	Module 2	Understand and apply the different types of bonds and bond evaluation	
	Module 3	Provide thorough understanding and evaluation of fundamental analysis and technical analysis	
	Module 4	Understand the measurement of portfolio risk, optimal portfolio selection models	
	Module 5	Understand and create portfolio management, portfolio evaluation and revision	

Financial Markets and Institutions	Module 1	Provide the students with sound information and knowledge of the broad framework of financial markets and institutions.	PSO5
	Module 2	Acquire knowledge in national and international commodity market	
	Module 3	Understand various types of financial instruments and their sale and buy back.	
	Module 4	Gain knowledge about the working of major financial institutions.	
	Module 5	Familiarise with different forms of foreign capital inflows and its role in Indian Financial system	

Financial Derivatives and Risk Management	Module 1 Module 2 Module 3 Module 4 Module 5	Understand and apply the terms and concepts of underlying risk management Understand and evaluate growth and development of future Understand and apply the option trading and various strategies involved in it. Understand about the pricing of options - call and put option Evaluate and apply SWAP contract and pricing of different instruments under SWAP.	PSO 5

Income Tax: Law, Practice and Tax Planning II	Module 1	Understand and apply tax planning tips for partnership firms, AOP and BOI in India.	PSO5, PSO6
	Module 2	Understand and apply tax liabilities of cooperative society and trust and be able to advocate tax planning tips to them.	
	Module 3	Understand and evaluate the tax liability of Companies including shipping companies.	
	Module 4	Understand and evaluate the implications of tax on various managerial decisions.	
	Module 5	Understand and evaluate the tax liability of business units.	

International Finance	Module 1	Familiarize with the concept and significance of International Finance, IDA, IFC, and ADB	PSO5
	Module 2	Understand international financial markets, foreign exchange rate, its measurement and movements.	
	Module 3	Acquire knowledge in exchange rate theories and models of exchange rate, risk management in foreign exchange.	
	Module 4	Develop knowledge in international capital budgeting, asset liability management and foreign portfolio management	
	Module 5	Acquire knowledge in working capital management, international cash and inventory management and international monetary investment.	

Advanced Strategic Financial Management	Module 1	Understand the concepts, vital tools and techniques used for financial decision making.	PSO5, PSO7
	Module 2	Understand the concept of capital structure planning and policies, and to find the value of a firm.	
	Module 3	Familiarize with the concept of lease financing and various methods of lease financing.	
	Module 4	Gain knowledge in theories of merger, different types of merger and the financial impact of merger.	
	Module 5	Understand take over strategy and procedure and regulations.	