

PROGRAMME OUTCOMES,
PROGRAMME SPECIFIC OUTCOMES
AND COURSE OUTCOME

(For All Subjects)

1. B.A., ECONOMICS

PROGRAMME OUTCOMES (POs)

Upon completion of this undergraduate programme, the students will be able to

PO1: Understand the fundamental concepts and theories in their discipline and apply theories to analyse all the current socio-economic issues in a logical manner.

PO2: Demonstrate knowledge of basic statistical and mathematical tools and apply them to analyse the data.

PO3: Identify and discuss real issues and problems facing the country and the world without bias.

PO4: Enhance their entrepreneurial skill and excel in business.

PO5: Acquire in-depth competency to get employment, and communicate effectively with the community.

PO6: Recognize the social, environmental, and ethical responsibilities and commitment to them as responsible citizens.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

Upon completion of this undergraduate programme in Economics, the students will be able to

PSO 1: Explain the basic concepts of economics, laws, and theories.

PSO 2: Apply economic laws and theories in practical life.

PSO 3: Gain knowledge of basic Statistics and Mathematics and apply them to arrive at conclusions about the validity of economic theories.

PSO 4: Obtain knowledge of economic policies, their applications and skills for critical thinking.

PSO 5: Identify, address and solve problems from a socio-political perspective of welfare.

PSO 6: Develop entrepreneurial skills and become a successful entrepreneur.

PSO 7: Get a well-paid job by improving their skills and widening their knowledge horizon.

PSO 8: Become an ethically committed and socially responsible citizen with a global vision.

MICRO ECONOMICS-I

Course Objectives:

This course will help the students

- 1. To understand the basic concepts in Economics and difference between micro and macroeconomics.*
- 2. To demonstrate economic laws and identify exceptions to law of demand.*
- 3. To interpret the concept of elasticity of demand and understand the factors governing elasticity of demand.*
- 4. To acquire knowledge in Indifference curve analysis*
- 5. To learn about factors of production and production function.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Define the basic concepts in economics.

CO 2: Classify human wants and explain the laws related to consumption.

CO 3: Examine the application of different laws in practical life and identify its exceptions.

CO 4: Explain the factors of production, population theories and list out the factors governing capital formation.

CO 5: Estimate production function and evaluate merits and demerits of large and small-scale production.

STATISTICS FOR ECONOMICS –I

Course Objectives:

This course will help the students

- 1. To understand the different methods of collecting data.*
- 2. To collect, process and interpret data.*
- 3. To gain knowledge in classification and tabulation of data.*
- 4. To present the data in graphs and diagrams.*
- 5. To acquire knowledge in statistical techniques and apply it wherever possible.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Recall the importance of statistics and identify the different sources of data.

CO 2: Classify the data and use diagrams and graphs for better understanding

CO 3: Make use of different types of averages whenever needed.

CO 4: Distinguish between different measures of dispersion and choose a suitable measure for their research

CO 5: Explain the concept of skewness and kurtosis and ascertain whether a distribution is skewed or not.

CONSUMER RIGHTS AND AWARENESS

Course Objectives:

This course will help the students

- 1. To understand the concept of consumerism and its growth in India*
- 2. To observe various forms of exploitation a consumer faced in day today life.*
- 3. To know more about the consumer rights and Consumer Protection act*
- 4. To enhance their knowledge on Consumer Disputes Redressal Agencies.*
- 5. To be familiarized with Consumer Organizations.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Define the concept of Consumerism and describe its origin and growth in India.

CO 2: Demonstrate various forms of exploitation a consumer faced in day today life.

CO 3: Exercise their rights and raise voices as consumers against exploitation.

CO 4: Explain the procedure to file a complaint in Consumer Court against exploitation.

CO 5: Evaluate the role of voluntary consumer organizations in consumer protection.

MICROECONOMICS – II

Course Objectives:

This course will help the students

- 1. To understand the basic concepts of Cost and Revenue*
- 2. To be aware of different market structure*
- 3. To acquire knowledge in theories of distribution*
- 4. To become familiar with various theories of wages*
- 5. To have a good understanding of Interest and Profit*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Recognize different types of cost and revenue, and differentiate the shape of the cost curves in short run and long run.

CO 2: Classify the market structure and explain the price determination under different market condition.

CO 3: Identify the causes for difference in wage and explain the role of trade union in wage determination.

CO 4: Examine the different theories of rent and wage.

CO 5: Evaluate the importance of various theories of interest and Profit.

STATISTICS FOR ECONOMICS-II

Course Objectives:

This course will help the students

- 1. To recognize the correlation between the variables and have knowledge of the various methods related to correlation.*
- 2. To obtain knowledge in regression analysis*
- 3. To learn more about time series data and its uses.*
- 4. To acquire knowledge on different methods of constructing index numbers.*
- 5. To become familiar with probability concepts*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Tell the relationship between the variables and find out the degree of relationship between the variables.

CO 2: Estimate the unknown value of dependent variable from the given value of independent variable.

CO 3: Apply time series forecasting technique to predict the future events in a scientific way.

CO 4: Estimate the general trend of the phenomenon under study.

CO 5: Apply probability tool for decision making under uncertainty.

ECONOMICS OF MARKETING

Course Objectives:

This course will help the students

- 1. To understand the basic concepts of marketing and recognize the role of marketing in economic development.*
- 2. To get an insight into the functions of marketing.*
- 3. To know about product differentiation and product life cycle.*
- 4. To gain more knowledge on standardization.*
- 5. To learn about the essentials of good storage and channels of distribution.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Classify the markets and list out the importance of marketing in economic development.

CO 2: Illustrate the elements of buying and selling.

CO 3: Build the perfect product mix strategy for the success of a company.

CO 4: Explain different types of grading and its significance.

CO 5: Evaluate the recent trends in marketing and apply their knowledge and skill in the marketing field.

MATHEMATICS FOR ECONOMICS – I

Course Objectives:

This course will help the students

- 1. To understand the application of basic mathematical tools.*
- 2. To acquire thorough knowledge of Arithmetic and Geometric progression.*
- 3. To grasp the concept of Set and algebra of sets.*
- 4. To get familiar with the applications of Functions and Equations in economics.*
- 5. To gain an understanding of Analytical geometry.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Illustrate the laws of Indices.

CO 2: Demonstrate the sequence and series, and algebraic expressions

CO 3: Make use of the Venn diagram to denote the relationship between sets.

CO 4: Examine the applications of equations and functions in economics.

CO 5: Determine whether the given lines are parallel or perpendicular and find the equation, slope, and calculate the distance between the two points.

INTERNATIONAL ECONOMICS – I

Course Objectives:

This course will help the students

- 1. To familiarize with the concept of internal and international trade.*
- 2. To know about various theories of international trade.*
- 3. To gather knowledge about the determination of Terms of Trade*
- 4. To understand the trend in India's balance of payment.*
- 5. To learn the methods of Trade Protection in India.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Demonstrate the main theoretical and empirical concepts in international trade and, the basic features of the international trading regime.

CO 2: Explain the various theories of international trade.

CO 3: Name the types of terms of trade and identify the determinants of trade.

CO 4: Differentiate between the balance of trade and balance of payment, list out the causes for disequilibrium in the balance of payment and examine the methods for correcting disequilibrium.

CO 5: Discuss the advantages and disadvantages of free trade and protection.

ENTREPRENEURIAL DEVELOPMENT

Course Objectives:

This course will help the students

- 1. To understand the concept of an entrepreneur and the qualities of a successful entrepreneur*
- 2. To identify the factors affecting entrepreneurship.*
- 3. To know about the schemes available in India for Women Entrepreneurs.*
- 4. To gain knowledge about the Rural Entrepreneurs in India.*
- 5. To be aware of various Entrepreneurial Development Schemes in India.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Define Entrepreneur, Entrepreneurship, and list out the functions of entrepreneurs.

CO 2: Recognize the factors affecting entrepreneurship and develop the skills to overcome them.

CO 3: Analyse the problems of women entrepreneurs and suggest suitable policies for tackling them.

CO 4: Differentiate Rural and Urban entrepreneurship, inspect the problems of rural entrepreneurs and recommend measures to solve them.

CO 5: Appraise the role of government and non-governmental organizations in creating entrepreneurial spirit, develop the skills in establishing and managing business ventures and become a successful entrepreneur.

RURAL ECONOMICS

Course Objectives:

This course will help the students,

- 1. To familiarize with the concept of Rural Economics.*
- 2. To get an insight into rural unemployment and poverty.*
- 3. To be aware of Rural Finance.*
- 4. To know about the significance of Infrastructure in rural development.*
- 5. To have more knowledge of marketing.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1 : Show the characteristics of rural economics and its importance for the development of an economy.

CO 2: Explain rural employment and poverty eradication programmes.

CO 3: Analyse the reasons behind rural indebtedness and examine the functions of organized sources of rural finance.

CO 4: Evaluate the current scenario of infrastructure in rural India.

CO 5: Compare the different types of marketing avenues and choose the favourable one for successful marketing.

ECONOMICS FOR COMPETITIVE EXAMINATIONS

Course Objectives:

This course will help the students

- 1. To know the related concepts of National Income.*
- 2. To have basic knowledge of five-year Plans.*
- 3. To be familiar with the concept of budgeting.*
- 4. To get a brief view of the agrarian structure in India.*
- 5. To understand the role of the industry and service sector in India.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Classify the various concepts of national income and outline the methods of measuring national income.

CO 2: Demonstrate NITI Aayog.

CO 3: Summarize the important issues of the recent budget.

CO 4: Examine the New Agricultural Policy 2020 and list its pros and cons.

CO 5: Analyse the initiatives such as Make in India and Startups and, estimate the growth of the service sector and its contribution to GDP in India.

GRNERAL ECONOMICS

Course Objectives:

This course will help the students

- 1. To understand the fundamental concepts of Economics.*
- 2. To gain knowledge on consumption and demand in economics.*
- 3. To know more about the various factors of production.*
- 4. To study the features of different market structures.*
- 5. To gather knowledge about the pricing of the products.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Illustrate the basic concepts of economics.

CO 2: Apply the Law of diminishing Marginal utility and Law of demand in practical life and identify the exceptions to the law of demand.

CO 3: Examine the features of factors of production.

CO 4: Compare the different market structures and explain the salient features of the market.

CO 5: Evaluate the factors influencing the pricing policy and explain the various pricing methods.

INTERNATIONAL ECONOMICS – II

Course Objectives:

This course will help the students

- 1. To be familiar with the concept of foreign exchange rate.*
- 2. To analyse different trade policies and barriers to trade.*
- 3. To study the objectives of various international financial institutions.*
- 4. To understand the functions of WTO and GATT.*
- 5. To highlight the recent trends in foreign trade and to understand the process of international and domestic trade procedures.*

Course Outcomes

After the completion of the course, the students will be able to

- CO 1. Define the foreign exchange rate and recall the different methods of foreign exchange rate.
- CO 2. Demonstrate how the exchange rate is determined and outline the different trade policies affecting international trade.
- CO 3. Identify the barriers to trade and explain how barriers to trade (like Tariffs, Quotas) affect businesses, consumers, and workers in the economy.
- CO 4. Evaluate the historical journey of today's WTO from GATT.
- CO 5. Analyse the recent trends in India's foreign trade.

AGRICULTURAL ECONOMICS

Course Objectives:

This course will help the students

- 1. To learn the role of agriculture in the Indian economy, to find out the causes of low agricultural productivity, and suggest measures to improve productivity.*
- 2. To understand the need for direct intervention in the form of land reforms to bring about changes in the agrarian structure.*
- 3. To understand the role of some flourishing sectors namely horticulture, fishing, floriculture, and forestry in the Indian economy.*
- 4. To gain foundational knowledge to understand the topics related to agricultural labour and explore the risks and hazards that agricultural labour can face in agriculture.*
- 5. To analyse the agricultural price policies and their effect on sustainable agricultural development.*

Course Outcomes

After the completion of the course, the students will be able to

- CO 1. Sensitize the overall development in agriculture, illustrate the causes for low productivity and suggest appropriate measures to enhance productivity.
- CO 2. Outline the various measures of land reforms in India and point out the reasons for their failure.
- CO 3. Identify the opportunities available in the flourishing sectors such as horticulture, fishing, floriculture, and forestry.
- CO 4. Examine the most distinguishing features of agricultural labourers engaged in production, identify their problems and suggest measures to solve their problems.
- CO 5. Evaluate the various aspects of agricultural price policy in India.

HUMAN RESOURCE DEVELOPMENT

Course Objectives:

This course will help the students

- 1. To understand the indicators and importance of human resource development.*
- 2. To acquire the skills of developing a detailed plan for manpower needs.*
- 3. To understand the concepts related to the supply of human resources.*
- 4. To develop the relevant skills necessary for application in human resource-related issues.*
- 5. To integrate the knowledge of human resource concepts to take correct business decisions.*

Course Outcomes

After the completion of the course, the students will be able to

CO 1. Develop the understanding of the concept of human resource development and to show its relevance in organizations.

CO 2. Explain the integrated perspective role of human resource development in modern business and to implement the techniques of job design.

ECONOMICS FOR COMPETITIVE EXAMINATIONS – II

Course Objectives:

This course will help the students

- 1.To acquire knowledge in Economics to compete in the competitive Examinations by understanding the concepts.*
- 2.To identify the appropriate sources of data, perform basic demographic analysis using various techniques.*
- 3.To analyse the causes and effects of inflation on the Indian economy.*
- 4. To explain the practices of both monetary and fiscal policy and their impact on economic activity by using a combination of monetary and fiscal policy.*
- 5.To focus on the policy issues raised by the development and functioning of international organizations.*

Course Outcomes

After the completion of the course, the students will be able to

CO 1. Show the links between trade, international finance, economic growth, and globalization and demonstrate the implication of globalization on society as a whole.

CO 2. Demonstrate the importance of population in economic development and to interpret the quantitative and qualitative aspects through various demographic techniques.

CO 3. Identify different types of inflation, causes of inflation, and measures to control it.

CO 4. Examine the tools of monetary and fiscal policies and their implications on the Indian Economy.

CO 5. Evaluate the objectives of various international organizations.

ECONOMIC DEVELOPMENT OF INDIA

Course Objectives:

This course will help the students

- 1.To understand the nature of the Indian economy and to be aware of various economic issues in India.*
- 2.To learn the role of agriculture and understand the changes brought about in the agrarian structure through direct intervention.*
- 3.To be equipped with knowledge of the industry in the Indian economy.*
- 4.To prepare for work in information and technology fields as well as business and computer-related fields.*

Course Outcomes

After the completion of the course, the students will be able to

- CO 1. Show the growth process of the Indian economy by giving a clear idea of factors influencing economic development.
- CO 2. Demonstrate the various measures of land reforms, and point out the reasons for their failure.
- CO 3. Analyse the sectoral aspects of the economy by focusing on industry.
- CO 4. Examine the growth and contribution of service sectors in India.
- CO 5. Explain the role of planning in the economic development of India, and examine the impact of new economic policy, demonetization, and digitalization on the Indian economy.

MACROECONOMICS – I

Course Objectives:

This course will help the students

- 1. To understand the concepts of Macroeconomics and its interrelations with Microeconomics.*
- 2. To know the concepts of national income and the methods of measuring national income.*
- 3. To acquire knowledge of the classical theory of employment.*
- 4. To grasp the concept of effective demand and its determinants.*
- 5. To construct and graph the consumption function.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Recall the importance of macroeconomics and differentiate macroeconomics from microeconomics.

CO2: Illustrate the different concepts of national income and summarize the uses of national income analysis.

CO 3: Identify the types of unemployment present in society.

CO 4: Analyse the strengths and weaknesses of the classical and Keynesian models.

CO 5: Explain what would cause the consumption function to grow steeper or flatter or to shift up or down

PUBLIC FINANCE –I

Course Objectives:

This course will help the students

- 1. To gain basic knowledge of public finance.*
- 2. To understand the need for public expenditure and classify the public expenditure.*
- 3. To study the sources of public revenue.*
- 4. To be enriched with the knowledge of tax revenue.*
- 5. To have knowledge of public debt and how debt is repaid.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Differentiate public finance and private finance.

CO 2: Classify the public expenditure and summarize the reasons for the growth of public expenditure in India.

CO 3: Identify the sources of revenue and examine the recent trends in Indian public revenue.

CO 4: Compare different types of taxation and bring out their merits and demerits.

CO 5: Explain the problems that have arisen in the context of rising public

HISTORY OF ECONOMIC THOUGHT

Course Objectives:

This course will help the students

- 1. To understand the key concepts of pre-classical and classical economic schools.*
- 2. To become familiar with the concepts of neo-classical economic school.*
- 3. To understand the government policies from the perspectives of different economic ideas*
- 4. To grasp the knowledge of the socialist way of thinking.*
- 5. To get familiarised with the ideas of prominent Nobel Laureates in Economics.*

Course Outcomes:

After the completion of the course, the students will be able to

- CO 1: List out the key concepts of pre-classical and classical schools.
- CO 2: Compare the economic ideas of different schools of thought.
- CO 3: Demonstrate the influence of socio-political reality in shaping economic ideas.
- CO 4: Analyse the Keynesian concepts.
- CO 5: Evaluate the key concepts of Nobel Laureates.

RESEARCH METHODOLOGY

Course Objectives:

This course will help the students

- 1.To learn about various research methods and methodologies.*
- 2.To gain knowledge on the research design and apply research terms in Economics.*
- 3.To understand the procedure for testing a hypothesis.*
- 4.To know the sample design and to develop the skills for sampling techniques used to collect survey data.*
- 5.To understand the significance of report writing and the mechanics of report writing.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Identify the overall process of designing a research study from its inception to its report.

CO 2: Classify type I error and Type II error and illustrate the procedure of testing a hypothesis.

CO 3: Explain the various steps in the process of data collection.

CO 4: Apply the understanding of feasibility and practicality of research methodology for a proposed project.

CO 5: Critically evaluate a range of studies that employ very different research paradigms and methodologies.

LABOUR ECONOMICS

Course Objectives:

This course will help the students

- 1.To understand labour as a unique factor of production.*
- 2.To perform supply and demand analysis in the labour market.*
- 3.To analyze the effect of labour unions.*
- 4.To know the workers' participation in management.*
- 5.To understand the working of the labour welfare agencies and social security measures in India and to observe the nature of industrial relations in India.*

Course Outcomes:

After the completion of the course, the students will be able to

- CO 1: List out the characteristics of labour and explain the factors affecting the efficiency of labour.
- CO 2: Explain the wage concepts and outline the objectives and functions of the trade union.
- CO 3: Elaborate on the workers' participation in management in India.
- CO 4: Explain the relationship of the labour market to other markets.
- CO 5: Assess the social security measures in India and evaluate the functions of ILO in the promotion of labour welfare.

HEALTH ECONOMICS

Course Objectives:

This course will help the students

- 1.To explore the health economic theory and concepts of health economics.*
- 2.To deal with health measurement and health delivery system in India.*
- 3.To understand the basics of demand and supply of healthcare in economics*
- 4.To know the importance of Health Insurance.*
- 5.To have the competence to describe, analyse and critically address economic aspects of health care organizations.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Describe the fundamental concepts and the key elements of health economics

CO 2: Identify the need for health insurance and make an overview of health insurance companies in India.

CO 3: Explain how policymakers set priorities in health care and how health economic evaluations support this process.

CO 4: Apply formal microeconomic analysis to evaluate health economic issues.

CO 5: Assess and analyse published health economic studies.

MACROECONOMICS – II

Course Objectives:

This course will help the students

- 1. To understand the types of investment and the factors affecting investment.*
- 2. To learn about the business cycle and theories of the business cycle.*
- 3. To acquire knowledge in the concept of Multiplier.*
- 4. To become familiar with the working of the Accelerator.*
- 5. To enhance their knowledge of macroeconomic policies.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Identify the determinants of investment.

CO 2: Demonstrate the phases of the trade cycle and summarizes the measures to control the business cycle.

CO 3: Analyse the working of the Multiplier and Accelerator.

CO 4: Explain and evaluate the role of macroeconomic policy in a developing economy.

CO 5: Recommend suitable policy measures during the inflation period.

PUBLIC FINANCE – II

Course Objectives:

This course will help the students

- 1. To identify the different types of goods.*
- 2. To be aware of the procedure of budgeting.*
- 3. To get an insight into the fiscal policy tools.*
- 4. To recognize the problems of local bodies in India.*
- 5. To gain more knowledge on Finance Commissions.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: List out the features of public goods and differentiate the goods.

CO 2: Classify the budget, explain the procedure of budgeting, and point out the key highlights of the current year budget.

CO 3: Identify the instruments of fiscal policy adopted by the government in the current scenario.

CO 4: Categorize the revenue of local bodies, compare local finance with state finance, and analyse the problems of local bodies.

CO 5: Evaluate the recommendations of finance commissions.

MONEY AND BANKING

Course Objectives:

This course will help the students

- 1. To understand the evolution of money.*
- 2. To acquire more knowledge on the monetary standard.*
- 3. To become familiar with the causes and consequences of inflation.*
- 4. To get an understanding of the functions of different types of banking.*
- 5. To enhance their knowledge of modern banking practices.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Define Money and list out the qualities of good money.

CO 2: Classify the monetary standard and demonstrate the theories of money.

CO 3: Identify the causes of inflation and explain the methods of controlling inflation.

CO 4: Analyse the functions of different types of banking.

CO 5: Evaluate modern banking practices and make use of the best one.

INDIAN ECONOMY

Course Objectives:

This course will help the students

- 1. To understand the concept of Demographic Transition and HDI.*
- 2. To acquire more knowledge on agriculture and industry in India.*
- 3. To know the progress of Education, health indicators, and public expenditure on health.*
- 4. To enrich their knowledge of the transport sector.*
- 5. To gain more knowledge of banking and IT services.*

Course Outcomes:

After the completion of the course, the students will be able to

- CO 1: Recollect the determinants of development, identify the factors responsible for poverty and unemployment in India.
- CO 2: Illustrate the performance of agriculture and industry in recent years.
- CO 3: Explain the progress of the education and health sector.
- CO 4: Examine the role of transport in the economic development of India.
- CO 5: Assess the growth of the IT industry and its contribution to GDP.

ECONOMICS OF DEVELOPMENT AND PLANNING

Course Objectives:

This course will help the students

- 1. To know the characteristics of the Indian Economy.*
- 2. To acquire more knowledge about obstacles to economic development.*
- 3. To learn various theories of economic development.*
- 4. To be familiarised with the growth models.*
- 5. To get an overview of five-year plans in India.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: Differentiate economic development and growth and point out the determinants of economic development.

CO 2: Illustrate the obstacles to economic development.

CO 3: Analyse the theories of economic development.

CO 4: Critically examine the growth models.

CO 5: Describe the need for planning, appraise the five-year plans in India and explain about NITI Aayog.

INDUSTRIAL ECONOMICS

Course Objectives:

This course will help the students

- 1. To understand the need for industrial development and factors affecting industrialisation.*
- 2. To acquire knowledge about the determinants of industrial location.*
- 3. To know the role of financial institutions in industrial development.*
- 4. To have an insight into the problems encountered by the industries.*
- 5. To gain more knowledge on the industrial policy adopted by India.*

Course Outcomes:

After the completion of the course, the students will be able to

CO 1: List out the importance of industrial development.

CO 2: Demonstrate the theories of industrial location.

CO 3: Examine the problems of industrial finance in India and analyse the role of financial institutions in industrial development.

CO 4: Evaluate the different types of problems encountered by the industries in India and recommend measures to solve them.

CO 5: Appraise the industrial policy introduced in India since independence.

2. B.A. ENGLISH

Programme Outcomes:

PSO. No.	At the end of the programme, the students will be able to:
PO – 1	acquire knowledge of various literary works and students of thought
PO – 2	explore the avenues of world literatures
PO – 3	utilize the skills acquired through the programme
PO – 4	think critically and apply theoretical approaches to literary texts
PO – 5	view and enjoy literary works through nuanced perspectives
PO – 6	equip themselves to undertake research projects
PO – 7	appreciate the unique merits of different literary genres
PO – 8	acquaint themselves with the key concepts of language and linguistics

Programme Specific Outcomes:

PSO. No.	Upon completion of the B.A. English Literature Programme, students will be able to
PSO – A	acquire knowledge of the important historical and political milestones of England, from the early times to the present
PSO – B	develop an aptitude for critical analysis of literary works
PSO – C	find scope of employability in fields of teaching, content writing, translating, communication and media
PSO – D	appreciate and develop the human values espoused in literary works
PSO – E	enhance their job potential by acquiring linguistic competence and effective communication skills
PSO – F	identify the correlation between literature and psychology
PSO – G	apply learned skills in experimenting, researching and critically analyzing relevant topics of their choice
PSO – H	obtain professional skills in translation

BRITISH POETRY

Course Objectives:

1. *To enable the students to understand the poems of 17th, 19th and 20th centuries along with the historical background.*
2. *To understand the aesthetic sense of the English poets.*
3. *To appreciate the lively poetic language of English poems.*
4. *To know the literary sensibility of poets belonging to different ages.*
5. *To expose the varied levels of thinking and emotions.*

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO – 1	define the various forms, types and schools of poetry	A	K1
CO – 2	describe the development of various literary movements and their mission	B	K2
CO – 3	apply the traits of the movement to the poems of the period	C	K3
CO – 4	classify British poetry as reflection of the period and identify the socio-cultural factors	D, A	K4
CO – 5	review the literary style of British poetry and explore the diverse themes of the poems	E, D	K5
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

SOCIAL HISTORY OF ENGLAND

Course Objectives:

1. To introduce students to the history of Britain, from its birth.
2. To explore the evolution of British society in relation to societal perceptions and cultural viewpoints.
3. To familiarize students with the demographic history, history of the working class, history of women, families, education, the English agricultural revolution and industrialization.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the political, religious, economic and intellectual histories of various periods	A	K2
CO - 2	explore English life and society over six centuries	A, B, D	K3, K5
CO - 3	examine the etiquette, morality and customs of English society	D, F	K2, K3
CO - 4	contextualize the varying experiences of English society in relation to societal changes and evolution	A, D, F	K2, K3, K5
CO - 5	coexist in a culturally diverse interdependent world	D	K2, K3
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

LITERARY FORMS

Course Objectives:

1. To introduce the various literary genres, movements and forms of literature.
2. To familiarize the students with the vibrant currents of thought that have enriched literature through various forms.

Course Outcomes:			
CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the significance of literary forms	B	K1, K2, K4
CO - 2	analyze a variety of texts	B, G	K4
CO - 3	appreciate literary forms and structure in shaping the meaning of a text	B	K2, K4, K5
CO - 4	enhance intellectual inquiry and creative expression	B, C, H	K5, K6
CO - 5	obtain coherent and systematic knowledge of various literary forms	E, G, H	K1, K2
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

BRITISH DRAMA

Course Objectives:

1. To make the students develop their communicative skills.
2. To expose them to new avenues of thoughts.
3. To learn diverse cultures and values of each age.
4. To analyse and critically appreciate the dramatic techniques of the dramatists.
5. To expose them to various schools of thoughts.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	name the various types and sub-genres of drama	A	K1
CO - 2	explain different dramatic forms and the techniques adopted by each writer of each age	B	K2
CO - 3	trace out the evolution of British Drama and its impact on audience	C	K4
CO - 4	learn to comment critically upon the characters and their representative nature	D, C	K3
CO - 5	assess the literary style and find out the uniqueness of British Drama	E, C	K5
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

HISTORY OF ENGLISH LITERATURE

Course Objectives:

1. To make the students familiar with the evolution and progress of the English Language and Literature throughout different periods.
2. To familiarize the students with authors across centuries, their different genres, literary forms and their unique writing styles.

Course Outcomes:			
CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	comprehend the growth and development of English literature and language	A, D, F	K2
CO - 2	develop an extensive insight into the various literary movements and also the prominent writers and their works	A, D, F, G	K5, K6
CO - 3	understand and evaluate the social, cultural and historical influence on the literary works of different periods	A, B, D, G	K2, K3, K5
CO - 4	explore the evolution of various literary genres	B	K1, K2, K5
CO - 5	read through and interpret key texts	B, G, H	K1, K2, K4, K5
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create			

MODERN ENGLISH GRAMMAR AND USAGE

Course Objectives:

1. To teach the main elements of Grammar.
2. To enhance competence in the English language.
3. To create academic / non-academic reports, write ups etc.
4. To acquire the necessary linguistic skills to use the language effectively in conversation and writing.

Course Outcomes:			
CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	recall the fundamentals of English Grammar	C	K1, K2
CO - 2	understand the formal and informal usages to obtain proficiency	E	K3
CO - 3	apply the patterns learnt by students	F	K3
CO - 4	analyze sentence structures, synthesis and usages	G	K4
CO - 5	evaluate the patterns of expressions, basic structures, sentence patterns, etc.	G	K5
CO - 6	create good academic / non-academic write ups, reports, etc.	G	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

BRITISH PROSE

Course Objectives:

1. To introduce the students to various thoughts and philosophies of each age.
2. To make them appreciate the prose style of various works.
3. To make the students understand the lateral thinking of the English writers.
4. To train the students to think independently and express themselves in a unique manner.

Course Outcomes:			
CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the various kinds of thoughts and ideologies of each period and each written	A	K2
CO - 2	analyze the writing style and the vocabulary used by the writers	B	K4
CO - 3	develop skills to critically appreciate the writings	B	K2
CO - 4	make them analyze the socio-cultural background of each writer	C	K3
CO - 5	enhance their power of comprehension and literary competence	D	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

INDIAN ENGLISH LITERATURE - I

Course Objectives:

1. To acquaint with the rich literary custom in Indian English Literature.
2. To apprise the various genres in Indian English Literature.
3. To present a general perception of Indian English Literature.
4. To impart the socio-political, historical and cultural context of works written.
5. To identify the Indian dialect and sensibility that stirs it.

Course Outcomes:

CO No	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the major movements and authors in Indian Writing in English through the study of selected literary texts	B	K1, K2
CO - 2	analyze the artistic and rhetorical devices used by the writers	B	K4, K5
CO - 3	cultivate a literary sensibility for a proper critical appreciation of literature	D, F	K1, K2
CO - 4	make them reflect critically on the human and social concerns and values embedded in the texts	D, G	K3
CO - 5	enhance the overall literary and linguistic competence of students	C, E	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

AMERICAN LITERATURE - I

Course Objectives:

- 1. To introduce students to different genres of American Literature.*
- 2. To familiarize students with prominent American writers of prose, poetry, fiction, drama and short stories.*
- 3. To be able to contextualize literary works according to their contemporary, social and cultural influences in American society.*

Course Outcomes:			
CO No	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	identify the key ideas, events and characteristics of different periods and regions	A, D, F	K4
CO - 2	understand values and themes that impact culture and society	D	K2
CO - 3	analyze and juxtapose the unique literary styles and structures of American authors	B, G	K3, K4, K5
CO - 4	improve reading skills leading to literary analyses	B, G	K2, K4, K5
CO - 5	write poems and short stories and also enact scenes from the plays prescribed	C, H	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

AFRICAN LITERATURE

Course Objectives:

1. To exhibit the literatures of the African land.
2. To illuminate the features and governance of African Literature.
3. To develop a comparative perspective study.
4. To present the literary form created by African authors.
5. To present different hereditary settings of African continent.

Course Outcomes:			
CO No	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the uniqueness of African Literature in terms of form and content	B	K1, K2
CO - 2	analyze the genre and its contemporary form in African Literature while reflecting on sub - genres and narrative modes	B, F	K4
CO - 3	understand how African theatre evolved during post-colonial period	F	K2
CO - 4	evaluate the cultural, thematic and aesthetic representations in African literature	G, D	K3, K5
CO - 5	assess and compare the genres of Non-fiction, fiction, drama and poetry of African literature	G, C	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

ENGLISH FOR COMPETITIVE EXAMINATIONS

Course Objectives:

1. To enrich word power for framing flawless sentences.
2. To produce passages without any errors.

Course Outcomes:			
CO No	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	to understand the importance of grammar and its usage in our daily life.	C	K1, K2
CO - 2	learn the basic grammar rules to prepare for Competitive Examinations	E	K3
CO - 3	apply the knowledge of grammar to identify errors and reproduce correct patterns of expressions	F	K3
CO - 4	analyze the varied form of expressions, basics structures, verbal patterns and sentence patterns for the effective use of the English language	A	K4, K5
CO - 5	evaluate the structures and patterns learned and to know their distinctive usages	A	K4, K5
CO - 6	create situation-based and context-based expressions and sentences to clear Competitive Examinations	H	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

BRITISH FICTION

Course Objectives:

1. To understand the eco socio-cultural context of the age that contributed to the making of the literature.
2. To sensitise the evolution of literature, themes and style.
3. To comprehend the various characters and their psyche.
4. To expose them to the narrative techniques, plot constructions and stylistic aspects.

Course Outcomes:			
CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	comprehend the ethical values of the society	A	K1
CO - 2	compare and contrast the characters of the novels	B	K3
CO - 3	analyze the plot construction and techniques employed in the novels	C	K4
CO - 4	interpret the different meanings and messages in the novels	C	K4
CO - 5	assess the literary value of each novel	D	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

INDIAN ENGLISH LITERATURE - II

Course Objectives:

1. To carry forward the listed objectives of the prior Paper.
2. To be aware of the cultural distinctions represented in Indian Literature.
3. To present the literary aspects of the local writers in English, a foreign language.
4. To present significant Indian writers in English tradition.
5. To present the works of contemporary writers in Indian English Literature

Course Outcomes:

CO No	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	remember the origin and History of the Indian Writing in English and appreciate the literary devices used in the texts	B	K1, K2
CO - 2	examine a broad cross section of regions and cultures in India	B, F	K4
CO - 3	understand the broad view of culture as seen from outside the culture	D, E	K1, K2
CO - 4	make familiar with the contributions made by modern Indian writers writing in English	D, G	K3
CO - 5	critically engage with Indian literary texts written in English in terms of colonialism, post colonialism, regionalism and nationalism	C, G	K5, K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

AMERICAN LITERATURE - II

Course Objectives:

1. To introduce students to diverse range of poems, plays, short stories, fiction and prose in American literature.
2. To familiarize students with various and diverse cultures within the United States of America.
3. To highlight the experiences of people from varying ethnicities and cultures and their diaspora within America.

Course Outcomes:

CO No	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	become acquainted with the historical and literary elements in American literature	D, F	K1, K2
CO - 2	read and retain themes and ideas in the literary texts	G	K1
CO - 3	attain knowledge of various literary styles in relation to their cultural context and literary forms	B, F	K2, K4, K5
CO - 4	view literary works in the context of the tremendous social and political changes throughout American history	D, F	K2, K5
CO - 5	participate in creative activities related to the literary works	E, F	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

LANGUAGE AND LINGUISTICS

Course Objectives:

1. To develop and apply the understanding of the concepts and methods appropriate for the analysis and study of the English language.
2. To establish a firm foundation in environmental writing and eco-criticism, thus bridging gaps between creative and scientific writing, through essays, poems, fiction and non-fiction.
3. To identify strategies used by poets and fiction and nonfiction writers and to address environmental questions through both the form and content of their works.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand a wide array of linguistic diversity, systematic patterns and cross linguistic universals that constrain this diversity	B, C, E	K2
CO - 2	demonstrate understanding of linguistic concepts, methods and approaches and apply this understanding to the construction and analysis of meanings in different modes of communication (spoken, written and multimodal)	E, G	K3, K4
CO - 3	assess the efficiency of the tools and knowledge that give a new perspective on language and linguistic	E, H	K4, K5
CO - 4	analyze and evaluate the influence of contextual and cultural factors in the production and reception of the English language, taking into account the relevant drivers of language change	D, E, F	K4, K5
CO - 5	examine their attitude towards language and the way it is used in society and culture	E, F	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

CONTENT WRITING

Course Objectives:

1. To create unique useful and compelling content on a topic.
2. To inform the students to develop content as per the business concept.
3. To encourage and guide students to write keywords that allows the site visitors to get the information quickly and efficiently
4. To equip students to write quality content and run their own blogs or sites.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	improve the ability to read the literary texts critically and to analyse them	A, E	K1, K3
CO - 2	gain an understanding about various modes and methods of literary interpretation	B	K4, K5
CO - 3	understanding the development of new forms of writing and literary interpretation	C	K2, K6
CO - 4	comprehend the qualities of literary texts	E, G	K3, K6
CO - 5	trace the inter disciplinary nature of literary texts in the 20th century	D, G	K2, K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

GENRE STUDIES

Course Objectives:

1. To introduce students to various genres of literature.
2. To help students to understand the features and characteristics of different genres.
3. To sensitize students on the socio linguistic codes and conventions of different genres.
4. To orient students about the patterns of narration.
5. To provide insights about generic variations.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the importance of context in the creation of a text	A	K1
CO - 2	understand the socio-cultural boundaries of the literary texts	A, B, D	K2
CO - 3	identify and apply the stereotypic patterns of different literary genres	E, F	K3
CO - 4	analyse generic rules and conventions and their relationship with social contexts	D, G	K4
CO - 5	understand the significance of genre in the communicative function of a literary text	F, G	K5, K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

SHAKESPEARE

Course Objectives:

1. To study Shakespeare based on a reading of the representative plays and selected sonnets.
2. To study the principal plays of Shakespeare in the light of the dramatic and literary background of his time.
3. To develop critical skills to approach Shakespeare on page and stage
4. To make judgments about the meaning of the plays based on the contemporary scenario.
5. To recognize and deploy different critical methodologies and understand the range of Shakespeare studies.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the plays studied in different critical contexts, including historical, theoretical, and theatrical	A, B, F	K1, K2
CO - 2	apply various emerging literary theories to the study of Shakespeare	B, G	K3
CO - 3	appraise the universal values embedded in the plays of Shakespeare	D	K5
CO - 4	recall the nuclei of each play and analyze them with the historical, philosophical and literary factors	A, B, D, F	K4, K5
CO - 5	challenge the existing ideas with the realms of the contemporary literary scenario	B, G	K5, K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

RESEARCH METHODOLOGY

Course Objectives:

1. To prepare students to undertake research.
2. To introduce the basic concepts of research.
3. To train the students on the procedures and techniques.

Course Outcomes:			
CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	make a systematic and theoretical approach during the process of research	B, G	K2, K3, K4
CO – 2	collect and analyze data through surveys, interviews and observation	G	K3, K4
CO – 3	enhance critical thinking	B, F	K1, K2
CO – 4	perform literature reviews	G	K3, K4, K5
CO – 5	write research article	C, E, G	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

TRANSLATION THEORY AND PRACTICE

Course Objectives:

1. To comprehend any Source language text and acquire the necessary skills to translate it into the Target language using adequate procedures and techniques.
2. To become a skilled translator.

Course Outcomes:			
CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	Understand the fields of translation principles, methods, procedures and techniques of translating.	B	K2
CO – 2	identify the nuances of the SL texts and enrich the adequate skills to address the issues of transition encountered by translators worldwide.	B	K2, K3
CO – 3	apply the acquired skills to translate specific structures and formulate suitable procedures for translation.	G, H	K3
CO – 4	analyse the grammatical classes, syntactic and semantic structures of the language concerned and re-text and re- render the Source language text.	D	K4
CO – 5	evaluate any translated text in the light of the principles, methods, techniques and procedures learnt.	G, H	K5
CO 6	produce translated texts to promote cultural exchange and connectedness.	G, H	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

ENVIRONMENT AND LITERATURE

Course Objectives:

1. To introduce the nature and ecological aspects of literature and the critical practice of reading literature.
2. To establish a firm foundation in environmental writing and eco-criticism, thus bridging gaps between creative and scientific writing, through essays, poems, fiction and non-fiction.
3. To identify strategies used by poets, and fiction and nonfiction writers to address environmental questions through both the form and content of their works.

Course Outcomes:

CO No	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the significance and implications of environmental writing with varied perspectives of both literary and scientific criticism	B, G	K2
CO - 2	interpret and relate literary texts by using essential terms from Environment studies	B, C, G	K3, K4
CO - 3	value the significance of the latest schools of criticism through the new approach used practically	B, G	K4, K5
CO - 4	make close reading, critical thinking and analytical writing through which the students will be able to investigate the literary and cultural forms that shape the observation of the readers and the way in which they relate themselves with nature and environment	G, C, G	K2, K4, K5
CO - 5	develop awareness of how literature can articulate humanity's relationship with the environment	D, E	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

MARGINAL LITERATURE

Course Objectives:

1. To introduce the literature that represent the marginalised.
2. To enable the students understand and identify the factors responsible for the different types of marginalisation.
3. To probe deep into the issues that bring in the paradigm shift.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the prescribed text and theories in the light of racial, cultural and social discriminations	B, D, F	K1, K2
CO – 2	apply the concept of diaspora in the global culture	D, G	K3, K4
CO – 3	assess values in line with the cultural hierarchy	D, G	K5
CO – 4	explore and examine the literary avenues that contribute to the growth of Marginal Literature	E, F	K4
CO – 5	investigate and offer panacea to the nemesis undergone by the marginalised	D	K4, K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

INDIAN LITERATURE IN TRANSLATION

Course Objectives:

1. To impart the uniqueness and supremacy of landscape in Indian Literature.
2. To afford a comprehensive outline of different literatures in India.
3. To present multilingual translated works of Indian Literature.
4. To depict Indian convention through the innovative voices of various vernaculars.
5. To create an awareness of ethnic distinctions in translated works.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand how English gets Indianised in translation.	B	K1, K2
CO - 2	analyse with the major ancient medieval and modern literary movements in India and their influence on literature.	B	K1, K4
CO - 3	understand different literary techniques employed by various Indian regional language writers.	C, E	K1, K2
CO - 4	compare the features and peculiarities of Indian societies, culture and language.	C, D	K3, K5
CO - 5	engage in the vast possibilities of translating literary texts from their own languages into English.	G, H	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

LITERARY CRITICISM

Course Objectives:

1. To help the students to understand the principles of literary criticism.
2. To develop perspectives about the multidisciplinary nature of literary interpretation.
3. To help the students to understand the social, political and economical contexts of a literary text.
4. To sensitize students to aesthetic, moralistic and humanistic aspects of literary theory.
5. To help the students to understand the influence of psychology, linguistics and political philosophy in Literary Criticism.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the origin and development of the art of literary interpretation	A, B	K1, K2
CO - 2	comprehend the qualities of canonical literary texts	B	K2
CO - 3	gain an understanding about various modes and methods of literary interpretation	D, G	K3
CO - 4	trace the interdisciplinary nature of literary criticism evolved in the twentieth century	B, F	K4
CO - 5	improve their ability to read the literary texts critically and analyze them and write well-structured analysis of literary texts	D, E	K5, K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

Canadian Literature

Course Objectives:

1. To comprehend the unique features in Canada's landscape and topography.
2. To understand the literary tradition in Canadian literature.
3. To acquire a thorough knowledge of indigenous writing.
4. To analyze the post-modernist developments in Canadian literature

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	improve their ability to read the literary texts critically and analyse them and write well-structured analysis of literary texts	A, D	K2
CO - 2	trace the interdisciplinary nature of literary texts evolved in the twentieth century	B	K2, K5
CO - 3	gain an understanding about various modes and methods of literary interpretation	E	K3
CO - 4	comprehend the qualities of canonical literary texts	E, F	K1, K5
CO - 5	understand the origin and development of the art of literary interpretation	G	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

AUSTRALIAN LITERATURE

Course Objectives:

1. To acquire a detailed knowledge of the diverse nature and culture.
2. To explore the representation of aboriginality.
3. To understand the literary texts in their social, political, economical, historical, cultural and psychological contexts.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the origin and development of the art of literary interpretation	A, B	K2
CO - 2	improve their ability to read the literary texts critically and analyse them and write well-structured analysis of literary texts	D	K4
CO - 3	gain an understanding about various modes and methods of literary interpretation	C, E	K3, K6
CO - 4	comprehend the qualities of canonical literary texts	F	K5
CO - 5	trace the interdisciplinary nature of literary texts evolved in the twentieth century	C, G	K1, K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

FANTASY LITERATURE

Course Objectives:

- 1. To kindle the spark of creative writing.*
- 2. To introduce the students to a variety of fantasy writers.*
- 3. To identify the components there are characteristic of fantasy literature.*

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	expand their imagination and enhance creativity	C, D	K2, K6
CO - 2	contextualize and understand the author's themes and ideas	B, D, F, G	K2, K4, K5
CO - 3	explore the uniqueness and differences between the subgenres of fantasy	D, F	K2, K4, K5
CO - 4	appreciate the artistry of the works and analyze them critically	B, D	K2, K4
CO - 5	improve their writing skills	C, E, G, H	K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

GLOBAL LITERATURE

Course Objectives:

1. To encourage the students to pursue their interests in literature beyond linguistic boundaries.
2. To understand the culture, language and identity of different countries.
3. To analyze the significance of conflict, peace and security in the global context.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	trace the interdisciplinary nature of literary texts evolved in the twentieth century	B, C	K1
CO – 2	gain an understanding about various modes and methods of literary interpretation	A, E	K2, K4
CO – 3	understand the origin and development of the art of literary interpretation	C	K3
CO – 4	comprehend the qualities of canonical literary texts	C, F	K4, K5
CO – 5	improve their ability to read the literary texts critically and analyse them and write well-structured analysis of literary texts.	D, G	K4, K6
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

LITERATURE AND PSYCHOLOGY

Course Objectives:

1. To enhance one's behaviour for the better and to know the human reality.
2. To maintain physical and emotional well-being.

Course Outcomes:

CO No	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	understand the parallelism between Psychology and Literature and their relevance in one's life.	A, F	K2
CO – 2	apply the motivations of authors and their fictional figures to comprehend the human condition.	B	K2, K3
CO – 3	analyse the human consciousness and the different phenomena in the human psyche.	B	K3, K4
CO – 4	analyze the causes and connections to recover meanings.	B	K3, K4
CO – 5	evaluate the production of a text and real life.	B	K5
CO 6	create characters and situations to highlight the psychological dimension of human reality.	G	K1
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

PROJECT - INDIVIDUAL

Course Objectives:

1. To perform academic review and analysis by retaining and interpreting information.
2. To formulate substantiated theories and solutions academically.
3. To delineate information efficiently and effectively through academic avenues.
4. To hypothesize and test theories in an academic manner.

Course Outcomes:

CO No.	Upon the completion of this course, students will be able to	PSO Addressed	Cognitive Level
CO - 1	meaningfully retain information from reading academic articles	B, G	K1, K2
CO - 2	analyse and evaluate retained information in meaningful ways	G	K3, K5
CO - 3	Develop meaningful theses from the information gathered	B, G	K4, K6
CO - 4	plan and write advanced papers	G	K3, K6
CO - 5	detect plagiarism and identify ways to eliminate it	B, C	K3, K5
K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create			

BBA (BUSINESS ADMINISTRATION)

Programme Outcomes (POs):

1. To impart knowledge of the foundations of management theory and its application in managerial decision making.
2. Select and apply appropriate tools required for solving complex managerial problems.
3. To develop capabilities in students to independently conduct theoretical as well as applied research.
4. To develop sound knowledge of the entrepreneurial process and inculcate creativity and innovation among students.
5. To produce industry ready graduates have highest regard for Personal & Institutional Integrity, Social Responsibility, Teamwork and Continuous Learning.

Programme Specific Objectives (PSOs):

On successfully completing the program the student will be able to:

1. To provide adequate basic understanding about Management Education
2. Provide strong analytical and critical thinking foundation enabling problem solving skills in the various disciplines of management.
3. To prepare students to exploit opportunities being newly created in the Management Profession.
4. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
5. Strengthen the ability to learn continuously to adapt to the dynamic challenges of the business world and lead business with conscience- moral, ethical and environmental values.

PRINCIPLES OF MANAGEMENT

Course Objectives:

- 1. To provide an insight in to the basic managerial functions.*
- 2. To describe the various forms of structure available to an organization*
- 3. To discuss contemporary management issues and challenges*

Course Outcomes:

1. Develop an understanding of the functions of management and contributions made by management theorists to the field of scientific and modern management.
2. Demonstrate critical thinking when presented with managerial problems and express their views and opinions on managerial issues by applying the concepts of planning and decision making
3. Identify the factors influencing the design of organizational structure and the right span of control for effective functioning of an organization.
4. Identify and incorporate best staffing practices and apply principles of directing for hiring and managing employees.
5. Control and coordinate the work force in a systematic approach

BUSINESS STATISTICS

Course Objectives:

To enable students to

- 1. Understand the concepts of statistics in the context of business.*
- 2. Apply the statistical tools in decision-making.*
- 3. Utilize statistical analysis in Research*

Course Outcomes:

1. Apply descriptive statistics in effective business decision making
2. Ascertain cause and effect relationship between business factors and predict direction of business
3. Analyse time series data to identify trend and seasonal variations to forecast and take business decisions
4. Construct and compare index numbers to analyse business and economic activities
5. Utilize statistical analysis in business projects to arrive at solutions

MANAGERIAL ECONOMICS

Course Objectives:

- 1. To be acquainted with the basic concepts of economics.*
- 2. To identify the applications and limitations of economic laws in decision-making and problem solving.*
- 3. To provide knowledge on different types of markets.*

Course Outcomes:

1. Exhibit the role of a manager by making strategic business decisions considering economic environment.
2. Utilize the concept of demand, elasticity of demand to identify the determinants of demand and forecast demand.
3. Assess technically the possible ways of increasing the level of production.
4. Develop knowledge on different market structures and make the price and output decisions.
5. Develop an understanding of the role of government and taxes in controlling inflation and deflation.

BUSINESS MATHEMATICS

Course Objectives:

- 1. To develop mathematical continuity for learning.*
- 2. To apply mathematical concepts in finding solutions to business problems.*
- 3. To familiarize students with the application of mathematical techniques in business decision process.*

Course Outcomes:

1. Apply the concept of geometry in the field of business
2. Draw and use Venn diagrams to solve real problems in business.
3. Use derivatives in marginal analysis
4. Application of differential calculus to find the maxima and minima of a function.
5. Perform elementary matrix operation and use matrices in business decision making.

FINANCIAL ACCOUNTING

Course Objective:

To enable students to

- 1. Understand the significance of accounting concepts and conventions in the preparation and presentation of financial reports.*
- 2. Prepare financial statements of the company.*
- 3. Analyze and interpret financial statements of a company.*

Course Outcomes:

CO1: Apply accounting concepts and accounting standards in practical situations

CO2: To be familiar with the rules governing accounting transactions.

CO3: Prepare Final accounts to ascertain profit or loss of the business and its financial position

CO4: Critically analyze financial statements of the enterprise, vertically and horizontally for business decision making

CO5: Identify the methods of calculating depreciation charges.

ORGANIZATIONAL BEHAVIOR

Course Objective:

- 1.To give an insight into how individual behavior can be made meaningful to increase organizational effectiveness.*
- 2.To understand group behavior in the organization*
- 3.To understand the concepts of organizational behavior and its systems.*

Course Outcomes:

CO1:Apply theories and concepts of organisationalbehaviour in workplace to create an effective organisational environment

CO2: Analyze workplace behaviours from theoretical perspective of ability, learning, attitude and values

CO3: Determine the influence of perception, personality and emotions on workplace behaviour in order to exhibit positive behaviour and to create solutions in a challenging context

CO 4: Create a conducive environment to facilitate group functioning, articulate conflict management competencies in managing and resolving conflicts

CO 5: Identify forces of change and manage a planned organizational change

BUSINESS LAW

Course Objective:

- 1. To impartation in-depth knowledge of the law of contracts,*
- 2. To provide a basic knowledge of the agency has to be operated.*
- 3. To provide an insight into the application of commercial laws to business operations*

Course Outcomes:

CO 1: Understand the meaning and nature of contract and various essentials of contract.

CO 2: Understand Discharge of contract and remedies for breach of contract

CO 3: Analyze and differentiate between bailment, Pledge and Agency.

CO 4: Understand the idea of sale, distinguish sale and agreement to sell and can explain conditions and warranties

CO 5: Interpret critical issues of partnership business and can recognize rights and duties of partners.

COMPUTER APPLICATIONS IN BUSINESS – I

(Practical Subject)

Course Objective:

- 1. To gain practical knowledge and depth working application principles in the office packages for the day to day office transactions.*
- 2. To provide practical knowledge of basic operations in MSWord, MS Excel, MS Power point*
- 3. To integrate Microsoft Office applications for use in business*

Course Outcomes:

CO1: Apply word basic commands, editing and proofing tools, creating tables, changing layout and mail merge concept for creating and managing business documents and effective communication

CO2: Handle business data by applying the in- built features of excel

CO 3: Apply financial and statistical function of excel for financial forecast, project analysis and analysis of business data

CO 4: Create a new presentation, modify presentation themes and add or edit text to slides

CO 5: Design a simple data base, build a new data base with related tables and manage the data in a table

ADVERTISING

Course Objective:

- 1.To enable the students to study the evolution of advertising*
- 2.To study the functions of advertising agencies*
- 3. to explain the process of advertisement making and launching*

Course Outcomes:

CO 1: Understand the origin and growth of advertising sector

CO 2: Explain types of advertising

CO 3: describe about the functions of advertising agencies

CO 4: To identify and make decisions regarding the most feasible advertising appeal and media mix

CO 5: To conduct pre-testing and post testing of advertisement to determine their effectiveness

COST ACCOUNTING

Course Objective:

- 1.To provide basic knowledge on cost concepts*
- 2. To impart knowledge on accounting techniques useful in managerial functions.*
- 3.To enable the students to ascertain the cost control methods and the ascertainment of the profitability of activates planned*

Course Outcomes:

CO1: Prepare cost sheet to ascertain total cost and cost/ unit in order to prepare quotation

CO2: To differentiate methods of calculating material consumption

CO 3: Apply various labor control Techniques for cost reduction and smooth functioning of business.

CO4: Explain meaning of Overheads. Classify, Allocate, Apportion and Reapportion various overheads to calculate cost.

CO 5: Apply costing methods and costing techniques appropriately

MARKETING MANAGEMENT

Course Objective:

- 1. To understand the nature and significance of the Marketing Function and the Marketing management process.*
- 2. To gain knowledge about the key aspects of the Buying Behavior of consumers and develop an understanding of the STP Process.*
- 3. To explain the factors affecting various product, pricing, channel management and Marketing communication decisions*

Course outcomes:

CO1: Identify the marketing functions, environment and segmentation for effective positioning of the products.

CO 2: Assess the factors influencing consumer behavior and apply recent marketing trends in business

CO 3: Develop new products and services that are consistent with evolving marketing needs.

CO 4: Formulate effective pricing policy and select an appropriate channel of distribution

CO 5: Summarize the nature and functions of the elements of Promotion mix

HUMAN RESOURCE MANAGEMENT

Course Objective:

- 1. To equip the students with knowledge, skills and competencies required to manage people.*
- 2. To acquaint the students with various functions and processes related to human resource management.*
- 3. To provide conceptual framework required for human resource planning and development.*

Course outcomes:

CO 1: Develop an understanding of the human resource functions and environment to manage human resource effectively.

CO 2 Identify the human recourse requirement and select suitable work force.

CO 3: Evaluate the performance of human resource and develop suitable training, development and career planning programs

CO 4: Frame sound compensation policy for high employee retention

CO 5: Develop an effective grievance handling procedure

COMPUTER APPLICATIONS IN BUSINESS-II

(Practical subject)

Course Objective:

- 1. To impart knowledge regarding concepts of Financial Accounting.*
- 2. To make students capable to create company, enter accounting voucher entries including advance voucher entries, and also print financial statements.*
- 3. To make students ready with required skill for employability in the job market.*

Course Outcomes:

CO1: To help students to work with well- known accounting software i.e. Tally ERP.9.

CO2: Students will learn to create company, enter accounting voucher entries including advance voucher entries

CO3: Demonstrate an understanding of various predefined inventory vouchers to suit the various business requirements and flexibility to create unlimited stock items.

CO 4: Demonstrate an understanding of how to maintain a payroll register .

CO5: To prepare Accounting, Payroll, Billing, Sales and Profit Analysis, Auditing Banking Inventory, Taxation such as GST, VAT, TDS, TCS etc

CONSUMER BEHAVIOUR

Course objective:

- 1. To explain the elements constituting Human Behaviour and their relevance towards consumption and purchase*
- 2. To describe the marketing programs and strategies while keeping in mind factors that may influence consumer behaviour*
- 3. To identify consumer decision making models and trends.*

Course outcomes:

CO 1: understand concept of Consumer Behaviour, types of Consumers, Diversity of Consumers.

CO 2: Acquire basic knowledge about issues and dimensions of Consumer Behaviour.

CO 3: Analyzing consumer information and using it to create consumer oriented marketing strategies.

CO 4: Understand the formulation of marketing strategies based on consumer behaviour

CO 5: Describe the innovation diffusion process

MANAGEMENT ACCOUNTING

Course Objectives:

- 1.To develop an understanding about the scope of financial accounting with understanding the concept of profit maximization in changing and complex business world*
- 2. To provide an understanding, importance of different cost control Technique.*
- 3. To give knowledge about the analysis of changes in financial position of corporate entity and develop capabilities in solving complex managerial problems as a business manager*

Course outcomes:

CO 1: Understand concepts of Management accounting and differentiate between various types of Accounting.

CO 2: Compare common size and comparative financial statements of different periods

CO 3: Discuss importance and limitation of Fund flow and Cash Flow statements and create them for accounting purpose.

CO 4: Apply Standard costing technique for controlling cost.

CO 5: Describe and Analyze relationships between cost, volume and profit for achieving breakeven point and profit maximization.

RESEARCH METHODOLOGY

Course Objective:

- 1. Develop an understanding of Role of Business Research, Process of Research and types of research.*
- 2. Explain the mechanism for defining the Research problems and develop Research proposals.*
- 3. Develop an understanding of merits and limitations of various research designs, types of data and methods of data collection.*

Course outcomes:

- CO 1: Gain the Knowledge & understanding of concept / fundamentals for different types of research.
- CO 2: Applying relevant research techniques.
- CO 3: Evaluating relevant data collection techniques and displaying of data collected
- CO 4: Classifying different techniques of sampling.
- CO 5: Applying Interpretation and prepare research report.

PRODUCTION AND OPERATIONS MANAGEMENT

Course Objective:

- 1. To understand the basic concepts and theories of the production management*
- 2. To comprehend the operations management situations with greater confidence.*
- 3. To expand individual knowledge of operations management principles and practices.*

Course outcomes:

CO 1: Develop an understanding of the role of production manager and also select a suitable production system.

CO 2: Analyse and decide a good location for the plant and its layout.

CO 3: Demonstrate efficient planning and control of production activities

CO 4: Analyze and apply skills in operations function to improve plant maintenance.

CO 5: Develop strategies to ensure high quality products are manufactured and distributed.

BANKING AND INSURANCE

Course Objective:

- 1.To understand the functions of commercial banks in modern banking environment including diverse areas of Indian Banking*
- 2. To develop knowledge about country's central banking system with special reference to Reserve Bank of India and to understand the banker customer relationship in India*
- 3.To gain knowledge of concept and role of insurance in economic development of the country*

Course outcomes:

CO 1: Understand the concept of Indian banking system and its recent trends

CO 2: Understand the functioning of Reserve Bank of India and overall working of commercial banking of India.

CO 3: Utilize effectively the recent trends in banking to run business successfully.

CO 4: understand various principle provision that govern the Life insurance Contracts understand various principles, provision that govern the Life General Insurance Contracts.

CO 5: Distinguish between life insurance and general insurance.

RETAIL MANAGEMENT

Course Objective:

- 1. To give an overview of the conceptual aspects of retail marketing management.*
- 2. to foster the development of the students critical and creative thinking skills*
- 3. To prepare students for positions in the retail sector or positions in the retail divisions of consulting companies*

Course outcomes:

CO 1: Clarify the concept and related terms in retailing.

CO 2: Comprehend the ways retailers use marketing tools and techniques to interact with their customers.

CO 3: Understand various formats of retail in the industry.

CO 4: Recognize and understand the operations-oriented policies, methods, and procedures

CO 5: Understand how to create a shopping experience that builds customer

SERVICES MARKETING

Course Objectives:

- 1.To give insights about the foundations of services marketing, customer expectations of services and gaps existing in the service delivery processes and service Quality.*
- 2. It emphasises the distinctive aspects of Services Marketing.*
- 3. It aims at equipping students with concepts and techniques that help in taking decisions relating to various services marketing situations.*

Course outcomes:

- CO 1: Understand the Concept of Services and intangible products
- CO 2: Discuss the relevance of the services Industry to Industry
- CO 3: Examine the characteristics of the services industry and the modus operandi
- CO 4: Analyse the role and relevance of Quality in Services
- CO 5: Visualise the strategies in the Services sector.

EFFECTIVE EMPLOYABILITY SKILLS- 1

(Practical Subject)

Course Objectives:

- 1. To identify the knowledge and skills required for obtaining and keeping employment.*
- 2. To emphasize individual skill assessments, interpersonal communication skills, workplace responsibilities, teamwork skills,*
- 3. To impart the knowledge and skills for enhancing the career opportunities.*

Course outcomes:

CO 1: To help students explore their values and career choices through individual skill assessments.

CO 2: To make realistic employment choices and to identify the steps necessary to achieve a goal.

CO 3: To explore and practice basic communication skills

CO 4: To learn skills for discussing and resolving problems on the work site

CO 5: To assess and improve personal grooming

FINANCIAL MANAGEMENT

Course Objectives:

To acquaint students with the techniques of financial management and their applications for business decision making.

Course outcomes:

CO 1: Apply financial data for use in decision making by applying financial theory to problems faced by business enterprises.

CO 2: Develop knowledge on leverage and cost of capital enabling to arrange funds at minimum cost.

CO 3: Determine and maintain optimal working capital.

CO 4: Apply modern techniques in capital budgeting analysis.

CO 5: Assess the capital structure of the organization and evaluate the profitability condition

STRATEGIC MANAGEMNT

Course Objective:

- 1.To understand the basic concept and nature of strategic decision making.*
- 2. To analyze different types of strategies and integration of strategic plans with business plans.*
- 3. To familiarize among students the concept of strategic analysis, its alternative strategies and implementation concepts*

Course outcomes:

CO1: understand growing importance of strategies in uncertain business environment.

CO 2: Understand the basic concept of business strategy

CO 3: Identify and evaluate different alternative strategies for effective decision making CO 4: Analyze strategy implementation alternatives for effective decision making

CO 5: Illustrate the strategic requirements and correlation between business plans with strategic plans

ENTREPRENEURSHIP DEVELOPMENT

Course Objective:

- 1.To simulate the real life activities of entrepreneurs in the startup age of a new venture.*
- 2. To provide the skills to start and build enterprise, implement it successfully*
- 3. To inculcate skills to manage the transition of a start up to a full fledged business entity.*

Course outcomes:

CO 1: List the characteristics of an entrepreneur, entrepreneur as well their role in the economic development of the country

CO 2: Explain the entrepreneurial environmental factors

CO 3: Design business plan

CO4: Raise funds and avail assistance through various funding and support agencies for their finance

CO 5: Identify the factors influencing rise of small and medium enterprises.

TRAINING AND DEVELOPMENT

Course Objectives:

To understand the concepts, tools and techniques of management Training and development.

Course outcomes:

CO1: To develop an understanding of the evolution of training & development from a tactical to a strategic function.

CO2: To provide an insight into what motivates adults to learn and the most appropriate methodologies to impart training

CO3: To understand the concept of training audit & training evaluation

CO4: To learn how design a training module and execute it

CO5: To understand the need for and concept of Performance Management

FINANCIAL SERVICES

Course Objectives:

- 1. To familiarize the students with the financial services industry as the growing phenomenon of Liberalization, Privatizations and Globalizations.*
- 2. To impart knowledge about Indian financial system and Indian financial market and its assets.*
- 3. To develop knowledge about new and innovative financial services introduced in recent years.*

Course outcomes:

CO 1: Understand the functioning of the financial system & Financial services

CO 2 Apply critical, analytical and integrative thinking while understanding the functioning for the Leasing

CO 3: Utilise factoring, for factoring and leasing services for their enterprises.

CO 4:. Assess and make wise investments in mutual funds and also get their credit worthiness evaluated for obtaining borrowings/investments.

CO 5: Develop a critical, analytical and integrative thinking of the role played by the regulators in the smooth functioning of the markets.

EFFECTIVE EMPLOYABILITY SKILLS- II

(Practical)

COURSE OBJECTIVES:

- 1. To identify the knowledge and skills required for obtaining and keeping employment.*
- 2. To emphasize individual skill assessments, interpersonal communication skills, workplace responsibilities, teamwork skills,*
- 3. To impart the knowledge and skills for enhancing the career opportunities.*

Course outcomes:

CO 1: To help students explore their values and career choices through individual skill assessments

CO 2: To make realistic employment choices and to identify the steps necessary to achieve a goal

CO 3: To explore and practice basic communication skills

CO 4: To learn skills for discussing and resolving problems on the work site

CO 5: To assess and improve personal grooming

4. B.COM

PROGRAMME OUTCOMES:

Students at the time of graduation will be able to

PO1: To gain thorough systematic and subject skills within various disciplines of finance, auditing and taxation, accounting, management, communication and computer.

PO2: To acquire practical knowledge to take up the task of accounting professionals.

PO3: To serve as a launch pad for professional programmes like CA, CMA and ACS.

PO4: To demonstrate progressive learning of various financial issues related to individuals and businessmen to setting up their own business start-up.

PO5: To do their higher education and can build their career as business professionals.

PROGRAMME SPECIFIC OUTCOMES:

PSO1 – Placement: To prepare the students who will demonstrate respectful engagement with others’ ideas, behaviors, beliefs and apply diverse frames of reference to decisions and actions.

PSO2 - Entrepreneur: To create effective entrepreneurs by enhancing their critical thinking, problem solving, decision making and leadership skill that will facilitate startups and high potential organizations

PSO3 – Research and Development: Design and implement HR systems and practices grounded in researches that comply with employment laws, leading the organization towards growth and development.

PSO4 – Contribution to Business World: To produce employable, ethical and innovative professionals to sustain in the dynamic business world.

PSO5 – Contribution to the Society: To contribute to the development of the society by collaborating with stakeholders for mutual benefit

BUSINESS ORGANISATION AND MANAGEMENT

Course Objectives

- 1. To understand business and its role in society.*
- 2. To enable the student to undertake business activities.*
- 3. To familiarise the students with concepts and principles of management.*
- 4. To impart knowledge on the functions of management among the students*

Course Outcomes:

1. To know the various forms of business organisation and its functions.
2. To acquire knowledge about manufacturing and service sector in India.
3. To understand the latest developments and technological innovations in the organisation of business.
4. To develop knowledge about evolution of management thoughts and to better understanding of planning and decision making.
5. To give an idea about organisation structure and different types of organisation.
6. To provide an idea about leadership, theories of motivation, importance of communication and principles of co-ordination.

BUSINESS ECONOMICS

Course Objectives

- 1. To identify the role of supply and demand in a market economy*
- 2. To enhance knowledge on recent economic trends*

Course Outcomes:

1. To understand business economics and importance of business economics for managerial decision making.
2. To determine the position of firms using demand and supply conditions.
3. To analyse cost effective production techniques.
4. To use the demand estimation to forecast demand trends and change.
5. To analyse market situations to establish market equilibrium.
6. To examine pricing theory to decide on strategies.

FINANCIAL ACCOUNTING - II

Course Objectives

- 1. To enhance critical and analytical approach to different types of accounting.*
- 2. To provide real life opportunities to manage business accounts.*
- 3. To know the pattern of recording transactions in Hire Purchase and Installment Purchase systems.*
- 4. To understand the accounting treatment to be followed at the time of Insolvency of an individual and while taking a lease of a property.*

Course Outcomes:

1. To know the similarities between consignment and joint venture.
2. To prepare various accounts namely accounts of non-trading concern and professionals, royalties.
3. To understand the facts related to consignment and joint venture with normal and abnormal losses.
4. To know about the preparation of balance sheet and income and expenditure account.
5. To identify the nature of expenses as capital and revenue for correct presentation in the final accounts of any company.
6. To know about the differences between hire purchase and instalment system.
7. To evaluate the process of royalties with minimum rent and short workings.

PRINCIPLES OF INSURANCE

Course Objectives

- 1. To understand the nature of Insurance and the principles those govern general insurance.*
- 2. To gain an insight on the nature of Life Insurance, Fire Insurance and Marine Insurance and to know the procedure for making claims against different kinds of Insurance policies.*
- 3. To understand the dynamics of Financial Security of people.*
- 4. To learn the meaning and importance of new forms of Insurance.*

Course Outcomes:

1. To know the overall aspects of Life Insurance and General Insurance.
2. To understand the classification of Life Insurance.
3. To understand the concept of Fire Insurance.
4. To understand the concept and progress of Marine Insurance in India.
5. To ascertain the principles of Personal Accident Insurance, Motor Insurance, Burglary Insurance, Agricultural Insurance and Health Insurance.

PROFESSIONAL ENGLISH FOR COMMERCE & MANAGEMENT – II

Course Objectives:

- 1. The Professional Communication Skills Course is intended to help Learners in Arts and Science colleges*
- 2. Develop their competence in the use of English with particular reference to the workplace situation.*
- 3. Enhance the creativity of the students, which will enable them to think of innovative ways to solve issues in the workplace.*
- 4. Develop their competence and competitiveness and thereby improve their employability skills.*
- 5. Help students with a research bent of mind develop their skills in writing reports and research proposals.*

Course Outcomes

At the end of the course, learners will be able to,

1. Attend interviews with boldness and confidence.
2. Adapt easily into the workplace context, having become communicatively competent.
3. Apply to the Research & Development organisations/ sections in companies and offices with winning proposals.

MARKETING

Course Objectives

- 1. To understand the basic marketing concepts.*
- 2. To create skills to develop marketing strategies based on product, price, place and promotion objectives.*

Course Outcomes:

1. To understand the nature, importance and classification of markets.
2. To understand the functions of marketing and marketing mix.
3. To evaluate the life cycle of products.
4. To understand about the product line and product life cycle through modification.
5. To know the various channels of distribution.
6. To know the concept of International Marketing, Import and Export Marketing.

ADVANCED FINANCIAL ACCOUNTING

Course Objectives

- 1. To know the system of Accounting followed in Branches and Departments of business organization.*
- 2. To understand the nature and system of accounting followed in Partnership firm.*
- 3. To know the procedures to be followed at the time of Admission, Retirement and Death of a partner in a partnership business.*
- 4. To know the procedures to be followed at the time of dissolution of partnership business.*

Course Outcomes:

1. To understand the accounting system of branch and departmental accounts.
2. To know the preliminaries before admitting a person as a partner.
3. To understand the various kinds of goodwill treatment followed in partnership accounts
4. To understand the dissolution of partnership and partnership firms.
5. To understand the insolvency of a partner or all partners and the Garner Vs Murray rule.
6. To prepare the accounts for amalgamation of firms.

BANKING THEORY LAW AND PRACTICE

Course Objectives

- 1. To create an idea of modern banking*
- 2. To familiarise the students with the banking activities*

Course Outcomes:

1. To understand the basic concept used in banking.
2. To know the various kinds of banking and their functions.
3. To know the banking product or services.
4. To know the development of technology in banking company.
5. To know the Reserve Bank of India and their importance in banking industry.

COMPUTER APPLICATIONS IN BUSINESS

Course Objectives:

- 1. To familiarize the students with the innovations of information in computer applications in business.*
- 2. To understand the basic computer knowledge*
- 3. To enable the students to appreciate the practical details of computer.*

Course Outcomes:

To understand the basic concepts and terminologies used

To familiarize in MS Word

To familiarize in MS PowerPoint

To prepare a document in excel program

To know the internet protocols, to compose and view email etc.

INTRODUCTION TO ACCOUNTANCY

Course Objectives

- 1. To enable the students to prepare and provide accounting information to the interested parties.*
- 2. To enhance their knowledge of the fundamental and technical concepts of accounting.*

Course Outcomes:

1. To know the basic accounting concepts and accounting rules.
2. To prepare the journal and know the subsidiary books.
3. To prepare the ledger accounts and balancing
4. To prepare the trial balance
5. To prepare the final accounts.

CONSUMER PROTECTION

Course Objectives

- 1. To create awareness regarding the intellectual property rights and consumer protection.*
- 2. To explain the students about a better quality of living as consumers.*

Course Outcomes:

1. To familiarize with the rights of consumer, the social framework of consumer rights.
2. To know the exploitations of consumers in different ways
3. To know the various rights of consumers in Consumer Protection Act
4. To know the practical issues in consumer related matters.
5. To know about the various forms of complaint.

BUSINESS COMMUNICATION

Course Objectives:

- 1. To develop better written and oral business communication skills among the students and enable them to know the effective media of communication.*
- 2. To enhance their writing skills in various forms of business letters and reports.*

Course Outcomes:

1. To know the barriers of communication and essentials of a good business communication
2. To know the various kinds of business correspondence and to include the important points to be covered.
3. To know the banking, insurance and agency correspondence
4. To know different secretarial correspondence
5. To know how to prepare an effective resume and technical developments in the field of communication.

QUANTITATIVE TECHNIQUES

Course Objectives

- 1. To provide basic knowledge of mathematical techniques as are applicable to business.*
- 2. To provide logical idea to find out practical solutions for the managerial problems.*
- 3. To provide the basic knowledge of statistical techniques as are applicable to business.*
- 4. To enable the students to apply statistical techniques for quantification of data in business.*

Course Outcomes:

1. To analyse the practical applications of Analytical Geometry in business field.
2. To know about matrix algebra, scalar multiplication and also to find out the inverse of a matrix.
3. To know the measures of central tendency and to apply to measure averages.
4. To apply the tools on measures of dispersion that are useful for estimating variations.
5. To apply the various methods for calculating correlation coefficient.
6. To apply regression analysis for estimating values for future period.
7. To understand the concepts about indices and time series.

LOGISTIC MANAGEMENT

Course Objectives

- 1. To understand the role of logistic management in growth of business*
- 2. To understand the functional areas in logistics*

Course Outcomes:

1. To introduce basic concepts in logistics with special emphasis on maritime shipping.
2. To understand multimodal transport concept and inventory services.
3. To understand the concept of life cycle support and measurement system.
4. To know about electronic data interchange standards.
5. To familiarise with multimodal transport and warehouse resources and strategies.

APPLICATION OF TALLY IN ACCOUNTING

Course Objective

- 1. To provide basic knowledge of computerized accounting to deserving students under self – learning mode.*
- 2. To know the preparation of budget and vouchers*
- 3. To process purchase orders, sales order and salary payment*
- 4. To prepare the final accounts*
- 5. The student will get an employment after learning the paper*

Course Outcomes:

1. To develop the computerised knowledge in accounting.
2. To impart the basic principles and concepts of computerized accounting.
3. To gain knowledge on the use and application of tally.
4. To learn about the concept of vouchers.
5. To create company in tally.
6. To create knowledge of inventory accounting.
7. To create knowledge of budgetary control.
8. To make use of cost category and cost centres in vouchers.

FINANCIAL ACCOUNTING

Course Objectives

- 1. To explain the concept and role of Accounting and financial reporting in the modern marketing economy.*
- 2. To explain the regulatory frame work for the operation of fundamental accounting*

Course Outcomes:

1. To know the concept of average due date and its preparation.
2. To understand about the preparation of bank reconciliation statement.
3. To understand about the self balancing system and sectional balancing system and its various adjustment accounts.
4. To demonstrate and understanding of the various methods of providing depreciation.
5. To know about classification of errors and its rectification.

HUMAN RIGHTS

Course Objectives

- 1. To understand the basic concepts of human rights*
- 2. To have an understanding of the relationship between individual, group, and national rights*

Course Outcomes:

1. To impart basic knowledge about human rights and its types.
2. To know about violation patterns and action against such violations by law.
3. To understand about the rights of disabled persons.
4. To know about the legal provisions of bonded labour.
5. To understand about the minority rights commission and its functions.

ENTREPRENEURSHIP DEVELOPMENT

Course Objectives:

- 1. To enable the students to understand the concept of Entrepreneurship and to learn the professional behaviour about Entrepreneurship.*
- 2. To identify significant changes and trends which create new business opportunities?*
- 3. To analyse the environment for potential business opportunities.*
- 4. To provide conceptual exposure on converting ideas to an entrepreneurial firms*

Course Outcomes:

1. To understand the significance of entrepreneurial skills.
2. To know about the developing ideas and techniques of business.
3. To understand about the procedures of start up.
4. To identify the institutional support provided to entrepreneurs.
5. To analyse the application of various accounting statements.

CORPORATE ACCOUNTING

Course Objectives:

- 1. To familiarize the students with the principles of Joint Stock Company Accounts.*
- 2. To Prepare the Final Accounts according to Companies Act 2013.*
- 3. To know how to value the Goodwill and Shares.*
- 4. To know how to record the transaction in the books of transferee company as per AS 14*

Outcomes:

1. To understand about the issue of shares and debentures.
2. To understand about the redemption of preference shares.
3. To understand the calculation of profit prior to incorporation.
4. To practice the maintenance of final accounts as per revised accounting standards.
5. To understand the accounting for amalgamation and external reconstruction.
6. To analyse the various schemes for capital reduction.
7. To evaluate the preparation of liquidator's financial statement.

COST ACCOUNTING

Course Objectives:

- 1. To keep the student conversant with the ever*
- 2. Enlarging frontiers of Cost Accounting Knowledge.*

Course Outcomes:

1. To explain the elements of cost.
2. To adapt appropriate method for material control.
3. To understand the different types of overheads.
4. To apply the process costing.
5. To debate about the variances of various costing.

BUSINESS LAW

Course Objectives:

- 1. To highlight the Provisions of Law governing the General Contract and Special Contract.*
- 2. To enable the students to understand the Legal Remedies available in the Law to the Business and other People.*

Course Outcomes:

1. To differentiate the Contracts and Agreements.
2. To validate offer, acceptance and consideration.
3. To identify the frauds misrepresentations unlawful agreements.
4. To know the procedures for entering into the various types of contracts.
5. To analyse the contract of sale.

RESEARCH METHODOLOGY

Course Objectives

- 1. To understand the basic concepts of research and its methodologies.*
- 2. To organize and conduct research in a more appropriate manner.*

Course Outcomes:

1. To know the criteria for good research.
2. To recognise the various research designs.
3. To analyse the different types of sampling designs.
4. To know about the various elements of data collection.
5. To differentiate the questionnaire and schedule.
6. To identify the mechanics of research report writing.

INCOME TAX LAW & PRACTICE

Course Objectives:

- 1. To understand the basic concepts of income tax*
- 2. To enable the students to know the provisions of the income tax law.*

Course Outcomes:

1. To know the residential status and tax exemptions.
2. To compute the taxable salary.
3. To calculate house property income.
4. To identify the income from other sources
5. To understand the provisions for filing the return of income

HUMAN RESOURCE MANAGEMENT

Course Objectives

- 1. To study about the importance of human resource.*
- 2. To study the techniques of performance appraisal of employees.*
- 3. To know the methods to redress the grievances of employees.*

Course Outcomes:

1. To know the system of human resource information.
2. To learn the process of selection of human resource.
3. To differentiate the management development and career development.
4. To understand the performance appraisal.
5. To identify the grievance handling and redressal.

ELEMENTS OF E-COMMERCE

Course Objectives:

1. To enable the students to gain basic knowledge of Electronic-Commerce in the area of Business and Financing decisions

Course Outcomes:

1. To gain knowledge of e-commerce applications.
2. To know the functions of internet.
3. To identify the network security data and message security.
4. To understand the applications of EDP.
5. To differentiate the multimedia and digital video.

SPECIAL ACCOUNTS

Course Objective

- 1. To impart knowledge on corporate accounting methods*
- 2. To enable the students to understand the procedures of accounting.*
- 3. To enable them to develop skills in the preparation of accounting statements and their analysis.*
- 4. The students will gain the knowledge about Accounting standards and companies' accounts.*

Course Outcomes:

1. To identify the processes of Holding companies.
2. To recognize the Banking company accounts.
3. To understand the basic principles of Company Insurance.
4. To know the final accounts of public sector undertakings.
5. To equip with different accounting standards knowledge.

MANAGEMENT ACCOUNTING

Course Objective:

- 1. To enable the students to know the importance of management accounting and its concepts.*

Course Outcomes:

1. To understand the basic concepts of management accounting and types of ratios can be applied for evaluating the performance and financial position of a firm.
2. To evaluate the performance of a firm using fund flow and cash flow statement.
3. To prepare various budgets and understand the features and importance of budgets
4. To identify the significance of standard costing, use marginal costing techniques for optimizing cost and profit.
5. To Understand the Capital Budgeting Importance and various Appraisal methods for evaluating and performance of firm.

INDUSTRIAL LAW

Course Objectives

- 1. To acquaint knowledge on industrial relations framework in our country*
- 2. To study various rights and benefits available to the workmen under the legislations.*

Course Outcomes:

1. To know the provisions of Factories Act
2. To know about the welfare, safety and health of workers.
3. To understand the disputes of strike, lock out, retrenchment, lay off and compensation
4. To understand the Trade Union Act
5. To know the rights and duties of Employee State Insurance

AUDITING AND CORPORATE GOVERNANCE

Course Objective:

- 1 To provide knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards and to give an overview of the principles of Corporate Governance and Corporate Social Responsibility*

Course Outcomes:

1. To understand Basic Principles of Auditing, Internal Control, Vouching and verification
2. To understand the Positions and status of Statutory Auditors under the Companies Act 2013.
3. To know about special Areas of Audit and Recent Trends in Auditing.
4. To understand the Conceptual framework of Corporate Governance models, codes and Standards.
5. To know the Concept of CSR and business Ethics under the Companies Act 2013

RETAIL MANAGEMENT

Course Objectives

- 1. To explore the functionalities in the retail management*
- 2. To understand the retail management concepts*

Course Outcomes:

1. To understand basic concept, importance and challenges facing retailers.
2. To identify the types of retailing institutions.
3. To understand Strategic planning process in retailing.
4. To identify the organizational Location and financial decisions.
5. To know the role and functions of Buying and handling of Merchandise Management

HUMAN VALUES & BUSINESS ETHICS

Course Objectives

- 1. To understand values in business*
- 2. To inculcate the ethical practices in business among the students*

Course Outcomes:

1. To understand values in business and Customer satisfaction in society. Productivity etc. and the continuous improvement in their standards
2. To gain an application of Values and ethics in business
3. To know the Government interactions and Ethics in Business pricing policies and strategies
4. To apply and understand Ethics in Production
5. To understand how to handle customer complaints and services-oriented industries

5.B.SC., MATHEMATICS

Programme Outcomes:

1. Bachelor's degree in mathematics is the culmination of in-depth knowledge of algebra, calculus, geometry, differential equations and several other branches of mathematics. This also leads to study of related areas like computer science and statistics. Thus, this programme helps the learners in building a solid foundation for higher studies in mathematics.
2. The skills and knowledge gained has intrinsic beauty, which leads to proficiency in analytical reasoning. This can be utilized in modelling and solving real life problems
3. Students undergoing this programme learn to logically question assertions, to recognise patterns and to distinguish between essential and irrelevant aspects of problems. They also share ideas and insights while seeking and benefitting from knowledge and insight of others. This helps them to learn to behave responsibly in a rapidly changing independent society
4. Students completing this programme will be able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematicians.
5. Completion of this programme will also enable the learners to join teaching profession in primary and secondary schools.
6. This programme will also help students to enhance their employability for government jobs, jobs in banking, insurance and investment sectors, data analyst jobs and jobs in various other public and private enterprises.

PROGRAM SPECIFIC OUTCOMES

After the completion of B.Sc. program in mathematics, the students are able to have

PSO 1: A Solid Foundation in Knowledge: B.Sc. degree is the culmination of depth knowledge of my core branches of mathematics such as Calculus, Classical Algebra, Analytical Geometry, Differential Equations, Sequence and Series, Abstract Algebra, Real and Complex Analysis, Number Theory, Mechanics, Operation Research, Statistics, Graph Theory, Discrete Mathematics, Trigonometry, Transforms and their application and C++/Python. Thus, this programme helps students in creating a solid foundation for further higher studies and research in mathematics

PSO 2: A Competency in Skills: The skills and knowledge gained have intrinsic logic which leads to proficiency in analytical reasoning critical understanding, analysis and synthetic in order to solve theoretical and practical problems. This can orient students towards applications of mathematics in other disciplines and moreover, it can also be applied in modelling and solving the real-life problems.

PSO 3: A Problem-Solving Techniques: Students undergoing this programme learn to logically understand the question assertions to classify the patterns and to evaluate the difference between the necessities and unnecessities of the problems which helps to analyze the problem clearly and to take correct decision for solving the problems.

PSO 4: Interdisciplinary and Research Skills: Students completing this programme will be able to create and present mathematical concepts clearly and precisely, to describe mathematical ideas from multiple perspectives and to explain fundamental concepts of mathematics to non-mathematics people in a better manner.

PSO 5:A Proficiency in Employments: The programme will help students build up with employability for government jobs, jobs in banking, insurance and investments sectors, data analysis jobs and jobs in various other public and private enterprises.

CALCULUS AND CLASSICAL ALGEBRA

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Apply the mathematical knowledge to analyze the properties of a curve such as curvature, radius of curvature, Involute and Evolute.	K3, K4
C02	Classify double and triple integrals	K4
C03	Identify Beta and gamma function and to apply the rules of beta and gamma function in evaluating double and triple integrals.	K3
C04	Construct different types of equations and to find the roots of the equations by Newton's Theorem	K1,K6
C05	Solve the different types of reciprocal equations and to find the number of real roots using Descartes rule of signs.	K6

_K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

STATISTICS- I

(For Mathematics Students)

Course Outcome

CO No	Course Outcomes	Knowledge Level
CO 1	Find and relate the concepts of moments, skewness and kurtosis and to demonstrate the method of least squares and to classify parabolic, exponential and logarithmic curves.	K1, K2, K3
CO 2	Interpret correlation and regression and to illustrate Karl's Pearson's coefficient of correlation and also the lines of regression and coefficient of regression	K2
CO 3	Develop the statistical techniques used in the theory of attributes and to analyze consistency of data and criteria independence and to interpret Yule's coefficient of association.	K3, K4
CO 4	Explain distribution function and its properties, able to find mathematical expectation and to find the cumulants using generating function.	K2
CO 5	Distinguish discrete and continuous probability distributions and to construct binomial, Poisson distribution	K4, K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

ALGEBRA AND DIFFERENTIAL EQUATIONS

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Construct different types of equations and to compare and to find the relationships between roots and coefficients.	K6, K1
CO2	Identify the transformation of equations and to find approximate solutions to equations by making use of Newton's Method and Korner's Method.	K3
CO3	Identify types of matrices and to find the characteristic equation of matrix. Eigen values and eigen vectors can be determined by applying Cayley Hamilton Theorem.	K3, K5
CO4	Distinguish the differential equations of first order and higher degrees and to identify the equations which are all solvable for p, x, y and the equations in the standard form $Pp+Qq=R$.	K3, K4
CO 5:	Identify and distinguish Laplace transformation and inverse Laplace transformation	K3,K4

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

DIFFERENTIAL EQUATIONS AND ANALYTICAL GEOMETRY OF THREE DIMENSION

Course Outcome

CO No.	Course Outcomes	Knowledge Level
CO1	Solve the differential equations which are all solvable for x, y, p and Clairaut's form. Also, to illustrate the method of solving the differential equations of the form $f_1(D)x + g_1(D)y = h_1(t)$, $f_2(D)x + g_2(D)y = h_2(t)$.	K2, K6
CO2	Identify and solve the second order linear differential equation with constant coefficients and to interpret the linear equations of second order with variable coefficients.	K2, K3, K6
CO3	Analyze the 3D-co-ordinate systems and how to find the direction cosines and direction ratios.. Also to find the angle between planes, the length of the perpendicular and angle of bisection.	K1, K4
CO4	Find and classify the equation of lines in different forms and calculate the image of the point, image of a line and to distinguish lines and planes. The angle between the line and plane can be determined. coplanar lines can be shown and the shortest distance between	K1, K2, K5
CO5	The equations of spheres and circles of intersection can be interpreted and	K2, K4

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

Statistics-II

(For Mathematics Students)

Course Outcome

CO No.	Course Outcomes	Knowledge Level
CO 1	To list out the characteristics of index numbers and to find Laspeyer's and Paache's, Fisher and Bowley's Edgeworth's index numbers. The method to classify and analyse the unit test, commodity reversal test, time reversal test and circular tests can be shown.	K1, K2
CO2	Construct testing of hypothesis and to distinguish null hypothesis and alternative hypothesis. Type I and Type II errors can be classified. The level of significance and test of significance for large samples can be explained.	K2, K4, K6,
CO3	Identify the distributions such as t-distributions and F-distribution. By making use of t-test the single mean and difference of means can be found out. Variance ratio test based on Chi-Square distribution by making use of this the goodness of fit can be decided.	K1, K3, K5
CO4	To find analysis of variance. One way and two way classified data can be explained and to randomize block design. Latin squares can be analysed and constructed.	K1, K4, K5
CO5	To explain statistical quality control and its advantages. Process control can be illustrated by making use of this control chart, range chart, P-chart can be designed	K2, K3

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

VECTOR CALCULUS AND FOURIER SERIES

Course Outcome

CO No.	Course outcomes	Knowledge level
CO1	Analyze what is meant by vector differentiation and how to apply vector differentiation and its properties..	K4, K3
CO2	Evaluate the double and triple integrals.	K5
CO3	Analyze and apply vector integration. By making use of Vector integration line, surface and volume integrals can be interpreted.	K2, K3, K4
CO4	Analyze and apply Green's, Stokes and divergence theorems	K3
CO5	Determine the functions whether the functions are odd or even. By making use of these concepts half range series can be found out.	K3, K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

SEQUENCES AND SERIES

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Analyse the real number system and also to classify rational and irrational numbers. To find the upper bounds, least upper bounds and maximum element and to elaborate triangle in equality and Cauchy-Schwartz Inequality.	K1,K2,K4
CO2	Categorize the sequences as bounded sequences, monotonic sequences, convergent sequences and divergent sequences. Also to find the algebra of limits	K1,K4
CO3	Demonstrate the behavior of monotonic sequences and to apply Cauchy's first limit theorem, Make use of Cauchy's Second limit theorem and Cesaro's Theorem. Construct subsequence and to explain Cauchy's general principle of convergence.	K2,K3,K6
CO4	Interpret the series and to apply nth term test, Comparison test, Kummer's test, D'Alembert's ratio test, Raabe's test, Gauss test and root test to compile the nature of the series.	K2, K3,K6
CO5	Analyse the alternating series .Apply the test for convergence for series of arbitrary terms. Also to identify the power series and to determine the radius of convergence.	K1,K3,K4,K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

VECTOR CALCULUS

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Classify the vector point function and scalar point function. Determine the derivative of a vector and derivative of product of scalar and vector function.	K2,K5
C02	Find divergence, curl. Make use of the Laplacian operator.	K1,K3
C03	Interpret the integration of point function and to illustrate line integral. To solve surface integral.	K5,K6
C04	Analyze and solve the volume integral.Also to illustrate and make use of Guass Divergence Theorem to solve problems.	K2, K3,K6
C05	To solve problems based on Green's theorem and Stoke's Theorem	K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

MATHEMATICS FOR COMPETITIVE EXAMINATIONS -I

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Interpret simplification and find averages	K1, K2
C02	Determine ratio and proportion	K5
C03	Assess partnership and solve percentage problems	K4,K5
C04	Distinguish profit and loss	K4
C05	Solve problems on numbers	K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

FUNDAMENTALS OF STATISTICS-I

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Analyse the classification of datas. Also to construct bar diagram and Pie chart.	K3, K6
C02	Illustrate measure of central tendency and to find mean,median and mode.	K1,K2
C03	Explain the measure of dispersion .Also to find standard deviation,variance,quartile deviation and to obtain the relationship between them.	K4,K5
C04	Interpret correlation and to solve rank correlation problems.	K2,K6
C05	To find solution for regression equations	K1, K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

ABSTRACT ALGEBRA

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Explain the definitions of groups and its examples. Also to determine the order of an element. Illustrate about Subgroups.	K2, K4
CO2	Interpret cyclic groups and to find the generators of cyclic subgroups. Illustrate and apply Lagrange's Theorem, Euler's Theorem and Fermat's Theorem.	K1, K3, K6
CO3	Elaborate about Normal Subgroups and group homomorphism. Illustrate Isomorphism, Automorphism. Also to apply Cayley's theorem wherever required.	K4, K5
CO4	Compare and classify Rings and its types. Illustrate about Integral domain and Fields. To summarize about maximal and minimal ideals.	K1, K6
CO5	Utilize the concept of homomorphism and isomorphism on rings. Also to find kernel of homomorphism and to make use of fundamental theorem.	K3, K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

TRIGONOMETRY,LAPLACE TRANSFORMS AND FOURIER SERIES

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Summarize about Trigonometry and to illustrate about the expansion of $\sin nx$, $\cos nx$, $\sin nx$, $\cos nx$	K2,K3
CO2	Obtain the relationship between hyperbolic functions and circular function. Explain about inverse hyperbolic functions.To find summation of the series using C+iS method.	K1,K4
CO3	Illustrate laplace transform	K5
CO4	Solve differential equations with constant coefficientsby making use of Laplace Transforms.	K6
CO5	Solve problems based on Fourier series . Identify the odd and even functions and to deduce half range series.	K3,K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

MATHEMATICS FOR COMPETITIVE EXAMINATION-II

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Analyse and solve the problems based on simple interest and compound interest.	K2,K6
CO2	Apply short tricks on solving time and work problems	K3
CO3	Making use of the concept of time and distance while solving problems	K5
CO4	Utilize Chain rule	K4
CO5	Find solutions for pipes and Cistern problem	K1

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

FUNDAMENTALS OF STATISTICS-II

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Explain the theory of Attributes	K3
C02	Illustrate about index numbers and to determine the weighted index numbers.	K1,K5
C03	Analyse and predict consumer price index numbers	K6
C04	Evaluate Time series	K4
C05	Apply curve fitting for straight line ,parabola and exponential curve	K2

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

LINEAR ALGEBRA

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Explain the definitions and general properties of vector spaces. Also to explain subspace. They know where to apply fundamental theorem of homomorphism.	K1, K2
CO2	Determine the span of a set and to check whether the given set is Linearly dependent or not. Also to find basis and dimensions.	K4
CO3	Illustrate and apply Rank Nullity theorem. Explain the definitions and examples of inner product space. Apply Gram Schmidt Orthogonalization process.	K3,K6
CO4	Construct matrices and also to summarize the elementary transformations. Determine the Inverse of matrix and rank of a matrix. To make use of Cayley Hamilton Theorem.	K2, K6
CO5	Determine Eigen Values and Eigen Vectors. Identify bilinear forms and quadratic forms. Also To deduce Diagonal form from Quadratic form.	K4,K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

REAL ANALYSIS

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Explain about Metric spaces and to construct an open ball .Also to interpret interior	K1,K3
CO2	Interpret about closed sets and to find closure. To determine limit points. Analyze about complete metric space. Discuss about Cantor's intersection theorem and Baire's Category theorem.	K2,K4
CO3	Summarize continuity. Illustrate about uniform continuity.	K3,K5
CO4	Explain about connectedness and to deduce the connected subsets of \mathbb{R} .To obtain the relationship between connectedness and continuity	K4,K6
CO5	Illustrate about compactness and to find the connected subsets of \mathbb{R} .Illustrate and make use of Heine Borel Theorem .To determine the relationship between compactness and continuity.	K3,K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

STATICS

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Explain the forces acting at a point and to apply the parallelogram law of forces, Triangle law of forces and Lami's theorem.	K2,K4
C02	Interpret parallel forces and moments. Analyse the resultant of two parallel forces and the resultant of two unlike unequal parallel forces.To applyVarignon's theorem.	K1,K6
C03	Summarize equilibrium of three forces acting on a rigid body and to illustrate three coplanar forces theorem and to make use of the above theorem to solve problems	K3,K5
C04	Explain about laws of friction.Also to determine the angle of friction and Illustrate about the equilibrium of a particle and to make use of the concepts to solve the problems.	K1,K2,K6
C05	Interpret the equilibrium of strings.To deduce the equation of catenary and its geometrical properties.	K2,K4

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

INTEGRAL TRANSFORMS AND Z TRANSFORMS

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Apply Fourier transforms and to explain the properties.	K2,K4
C02	Solve problems on infinite Fourier cosine and Sine Transforms	K1,K6
C03	Identify and solve Finite Fourier transforms	K3,K5
C04	Illustrate Z transforms and its properties.	K1,K2,K6
C05	Utilize inverse Z transforms to solve difference equations.	K2,K4

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

PROGRAMMING IN C

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Summarize about character set. Classify the keywords and identifiers. Identify the constants, variables and data types.	K3,K4
CO2	Apply different types of operators and to make use of input and output operators.	K1,K6
CO3	Compile programs by utilizing decision making and branching statements. Also to apply Decision making and looping statements while develop a program.	K2,K5
CO4	Make use of one dimensional and two dimensional arrays. Also to utilize Character arrays and strings and its functions while compiling the program	K3,K6
CO5	Illustrate user defined functions and illustrate the definitions of functions and return values and their types. Also to categorize function call, function declaration.	K2,K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

DISCRETE MATHEMATICS

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Illustrate and use the statements, notations and connectives .Construct truth table and utilize conditional and biconditional statements.	K2,K3
CO2	Analyze and explain Predicate calculus	K1,K4
CO3	Elaborate Groups and monoids. Also to develop Group codes	K6
CO4	Construct Lattices and special lattices.Analyze and explain Boolean algebra	K5
CO5	Convert From one form to another form (Decimal,Binary,Octal,Hexadecimal). Evaluate Binary addition,subtraction multiplication and division.	K2,K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

COMBINATIONAL MATHEMATICS

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Explain Selections and to find binomial coefficients. Classify ordered selections and unordered selections.	K1,K3
CO2	Solve pairing problems	K3
CO3	Explain recurrence and classify the types of relations using generating functions.	K2,K5
CO4	Illustrate The inclusion and exclusion principles.	K4,K6
CO5	Construct and solve block designs and square block designs.	K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

OPERATIONS RESEARCH -I

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Solve Linear Programming Problem by making use of Graphical method, Simplex method.	K4
C02	Interpret the concept of duality. Classify primal and dual problems. Utilizing the concept of duality, solve problems on dual simplex method.	K3
C03	Solve Transportation problems by making use of North – west corner rule, Matrix- Minima method, Vogel's Approximation rule. Evaluate Degeneracy and unbalanced transportation problems.	K2, K5
C04	Determine the solution for Assignment problems.	K1, K6
C05	Solve sequencing problems.	K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

STOCHASTIC PROCESS

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Determine the generating functions .Also to analyze and explain Stochastic Process and specification of stochastic process	K1,K3
C02	Interpret Markov Chains .Also to analyze theclassification of states and chains.Illustrate the stability of Markov chain.	K2,K4
C03	Classify Markov chain with denumberable states and Markov chain with continuous state space.	K2,K5
C04	Illustrate Markov Process with discrete state space by using Poisson Process.	K1,K6
C05	Elaborate Erlang Process.	K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

MATH TYPE USING LATEX

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Type words, sentences and symbols not in the keyboard using Tex	K1,K3
C02	Analyze Text environments	K2,K4,K5
C03	Type math by making use of spacing rules, equations	K5
C04	Type spacing of symbols building new symbols, math alphabets and symbols	K2,K6
C05	Write latex documents by making use of abstract, sectioning, cross referencing and Bibliographies.	K4

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

COMPLEX ANALYSIS

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Explain analytic functions and determine the functions of a complex variables and to utilize Cauchy Reimann equations	K2, K3
CO2	Elaborate Bilinear Transformations and classify the elementary transformations. Also to find fixed points.	K4, K5
CO3	Illustrate complex integrations and to make use of Cauchy's Integral Formula	K1, K6
CO4	Explain Series Expansions and to determine Taylor's Series, Laurent's Series. Determine zeros of an analytic function.	K2, K6
CO5	Determine residues and to make use of Cauchy's Residue Theorem. Also to evaluate definite integrals	K4, K5

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

GRAPH THEORY

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Construct graph and to explain its definition. Determine degrees. Also to perform operations on graph	K2,K3
CO2	Classify degree sequence and graphic sequence. Illustrate connectedness, compactness and connectivity.	K4,K5
CO3	Construct Eulerian Graphs and Hamiltonian graphs.Elaborate the characterizations of trees and to find centre of a tree.	K1,K6
CO4	Interpret Planar graphs and to determine chromatic numbers and chromatic index.	K2, K6
CO5	Explain Chromatic Polynomials and the properties of digraphs.	K4

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

NUMBER THEORY

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Explain Peano's theorem and to utilize mathematical induction. Also to make use of binomial theorem	K1, K5
CO2	Illustrate Division Algorithm .Determine GCD .To deduce the Diophantine equation $ax+by=c$	K3, K5
CO3	Interpret the fundamental theorem of arithmetic. Explain The Sieve of Eratosthenes and to use Goldbach Conjecture.	K2, K6
CO4	Summarize the basic properties of congruences and to apply Chinese Remainder Theorem	K2, K4
CO5	Elaborate Fermat's Theorem, Wilson's Theorem and to apply Kraitchik Factorization Method.	K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

DYNAMICS

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Illustrate projectiles and to find the equation of path, range and maximum height and time of flight.	K2, K3
CO2	Elaborate about the collision of elastic bodies. Interpret law of impact and classify direct and oblique impact.	K1, K4
CO3	Determine simple harmonic motion in a straight line. Summarize the composition of SHM of the same period in the same line and along two perpendicular directions.	K2, K6
CO4	Interpret motion under the action of central forces. Derive velocity and acceleration in polar coordinates.	K5, K6
CO5	Obtain the differential equation of central orbit. Also to deduce the pedal equation of central orbit.	K3, K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

NUMERICAL METHODS

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Obtain solution for numerical algebraic and Transcendental equations by making use of various methods.	K1,K3,K4
CO2	Find finite difference for first and higher order differences. To classify forward and backward differences.	K2,K6
CO3	To apply interpolation formula in Newton's Forward and backward, Guass Forward and backward formula.	K5,K6
CO4	Make use of numerical differentiation and integration in Newton's forward & backward differences for differentiation. Also to utilize Trapezoidal rule and Simpson's 1/3 and 3/8 rule.	K3,K4
CO5	Solve Difference equations and to determine the order and degree of difference equation. Solve linear difference equation and find complementary function and to deduce particular Integral of the function.	K1,K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

ASTRONOMY

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Explain Spherical Trigonometry .Also to elaborate the fundamental of spherical trigonometry,thesine,the cosine, four parts and Napier's formula.	K3,K5
C02	Imagine the celestial sphere,Illustrate about the rising and setting of a star. Identify and Classify circumpolar stars and morning,evening stars.	K1,K4
C03	Imagine Earth and to explain refraction. Deduce Tangent formula and Cassini's formula.	K2,K6
C04	Illustrate Geocentric parallax and Heliocentric parallax	K3,K5
C05	Elaborate Kepler's laws. Also to classify True anomaly,mean anomaly and eccentric anomaly and to obtain the relationship between them.	K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

FUZZY MATHEMATICS

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Explain Crisp sets and fuzzy sets and illustrate the characteristics and significance of Paradigm Shift.	K1,K2
CO2	Elaborate the Additional properties of a cuts and the extension principle for fuzzy sets.	K1,K4
CO3	Perform fuzzy set operations.Also to determine fuzzy complements , fuzzy intersections and fuzzy unions.	K5,K6
CO4	Determine fuzzy numbers and Linguistic variables.Apply arithmetic operations on intervals and on fuzzy numbers.Construct lattice of fuzzy numbers.	K2,K3,K4
CO5	Analyze and classify fuzzy decision making ,individual decision making, Multi person decision making problems.	K5,K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

MATHEMATICAL MODELLING

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Illustrate mathematical modelling through ODE. Classify and elaborate linear growth , non-linear and growth decay problems, Compartmentmodels,Dynamic problems and geometrical problems.	K1,k2
CO2	Explain population dynamics, Epidemics.Anlayze the compartment models in economics,medicines, arms race bullets and international trade.	K2,K3,K5
CO3	Explain mathematical modelling problem through second order ODE.	K5,K6
CO4	Illustrate mathematical modelling through difference equation.	K2,K6
CO5	Explain mathematical modelling through graphs.	K3,K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

OPERATIONS RESEARCH-II

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Interpret the games and strategies. Solve two persons zero sum games. Make use of mixed strategies and dominance property.	K2,K3
CO2	Analyze the replacement of items that deteriorate with time. Illustrate replace montage of a machine taking money value into consideration and elaborate the replacement of items that completely fail suddenly and Staffing problems.	K1,K5
CO3	Explain the queueing models and to classify into (M/M/1:FCFS),(M/M/1:∞/FCFS),(M/M/S:/FCFS)	K4,K6
CO4	Compose network scheduling using PERT/CPM. Explain the rules of network construction. Make use of PERT calculation.	K2,K3
CO5	Analyse and solve inventory control problems.	K5,K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

CODING THEORY

Course Outcome

CO No.	Course Outcome	Knowledge Level
CO1	Analyze and illustrate basic assumptions and correcting ,detecting error patterns.Also to interpret effects of error correction and detection.	K3,K4
CO2	Elaborate linear codes and illustrate the bases for C and C+ generating matrices on coding	K1,K2
CO3	Illustrate parity check matrices and determine the equivalent codes	K3,K5
CO4	Explain some bounds for codes and classify perfect codes,hamming codes, extended codes, the extended Golay code and decode them.	K4,K6
CO5	Summarize about polynomials and words,cyclic codes.Make use of polynomial encoding and decoding	K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

PROGRAMMING IN C++

Course Outcome

CO No.	Course Outcome	Knowledge Level
C01	Illustrate and make use of the concepts of tokens, expressions and control structures	K3,K4
C02	Utilize the functions in C++ and to apply it while writing programs	K1,K2
C03	Interpret constructors and destructors	K3,K5
C04	Explain and apply operator overloading while writing programs	K4,K6
C05	Make use of inheritance and classes to compile a program	K6

K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create

6. B.SC., PHYSICS

Upon completion of B.Sc degree programme, the graduates will be able to

PO. 1: acquire a fundamental concepts in the field of Physics and procedural knowledge that creates different types of professionals related to the subject area of Physics, including professionals engaged in research and development, teaching and government / public service.

PO. 2: demonstrate the ability to use skills in Physics and its related areas of technologies for formulating and tackling Physics related problems.

PO. 3: inculcate innovative skills and teamwork among students to meet societal expectations.

PO. 4: perform analysis to assess, interpret and create innovative ideas through practical experiments.

PO. 5: facilitate to enter multidisciplinary path to solve day-to-day scientific problems.

PO. 6: carry out fieldworks and projects both independently and collaboration with others and to report in a constructive way.

PO. 7: improve communication ability and knowledge transfer through ICT aided learning integrated with Library resources.

PO. 8: attain competency in job market / entrepreneurship.

Programme Specific Outcome (PSO)

The student graduating with the degree B.sc (Physics) should be able to

PSO1: understand and experiment the basic concepts of Properties of Matter and Mechanics, Optics and Acoustics, Heat and Thermodynamics, Electricity and Electromagnetism, Instrumentation Physics, Space Physics, Basic Electronics, Spectroscopy, Atomic and Nuclear Physics, Communication Electronics, Quantum Mechanics, Digital Electronics, Solid State Physics, Energy Physics and Medical Physics.

PSO2: develop the skills on scientific programming through programming with C++ which will make them choose their career in wide spectrum of areas.

PSO3: students will have knowledge about the working of medical instruments, laser, super conductivity, electrical appliances, wiring and nano materials.

PSO4: students utilize their laboratory skills to take measurements in Physics laboratory, analyze the measurements and draw valid conclusions.

PSO5: students will be able to compile oral and written scientific communications and will prove that they can think critically and work independently.

PSO6: harness the scientific ideas to reduce pollution by promoting non-conventional and renewable energy sources.

PSO7: students will illustrate proficiency in mathematics and the mathematical concepts needed for the proper understanding of physics and can face competitive exams with ease.

PSO8: gain confidence and move to higher studies.

PROPERTIES OF MATTER & MECHANICS

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Define Stress, Strain, Poisson's ratio, Hooke's law, Torsion pendulum and determine the elastic constant by Searle's Method.	1	Re, Ap
CO-2	Understand the principle of elasticity through the study of young's Modulus and Rigidity Modulus.	1	Un
CO-3	Derive the Expression for the Bending Moment, Cantilever depression, Uniform and Non-Uniform Bending.	1,4	An
CO-4	Find the Young's Modulus of a bar by Uniform and Non-Uniform Bending Method.	1,3,4	Ca
CO-5	Analyse the different Molecular Forces that causes tension on the surface of liquid and determine the surface tension by Capillary rise method and Quincke's Method	3,4	An, Ev
CO-6	Determine the Coefficient of Viscosity of a liquid by Poiseuille's Method and apply the knowledge of viscosity in the field of lubrication	4	Ca, Un, Ap
CO-7	Understand the Analogy between translational and Rotational Motion, Angular Momentum, Angular Impulse, Moment of Inertia and Radius of gyration	1	Un
CO-8	Understand Newton's Second Law for rotation and determine the expression for rotational kinetic energy and power during rotation.	1	Un, E
CO-9	Analyse the centre of pressure on a rectangular and triangular lamina.	1	A
CO-10	Understand the law of floatation and determine the Meta Centric height of a ship and apply the principle of Bernoulli's Theorem in Pitot's tube and Venturimeter	1	Un, Ap

ALLIED PHYSICS- I

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Define the fundamentals of elasticity, concept of stress, strain, bending moment and to solve the problems related.	1	Re, Ap
CO-2	Understand the principles of elasticity through the study of Young Modulus and modulus of rigidity.	1,4	Un
CO-3	Understand principles of surface tension and Viscosity	1	Un
CO-4	Describe the properties of fluids such as viscosity and surface tension and evaluate the value of coefficient of viscosity	1,3,4	An, Ev
CO-5	Explain the phenomena of simple harmonic motion and the properties of systems executing such motions.	1,4	An, Ev
CO-6	Determine the frequency of tuning fork by Melde's string experiment and apply the knowledge of simple harmonic motion.	1,3,4	Ca, Un, Ap
CO-7	Understand the laws of thermodynamics, concepts of transport phenomena.	1	Un
CO-8	Demonstrate the experiments to determine the thermal conductivity and specific heat capacity and apply the knowledge of transport phenomena.	1,4	An, E,Ap
CO-9	Acquire mastery of the fundamental principles and applications of interference, diffraction and polarization	1	Ac
CO-10	Demonstrate the experiments to find the wavelength of different colours of light by normal incidence using grating and apply the knowledge of diffraction principle.	1,3,4	An, Ap

OPTICS AND ACOUSTICS

Course Outcome:

CO. No.	After completion of this course, students will be able to	PSO addressed	CL
CO-1	Understand the concepts of spherical aberration, chromatic aberration in lenses, refraction, deviation and dispersive power of a prism.	1	Un
CO-2	Acquire knowledge of the working principle of constant deviation spectroscope and different types of eyepieces.	1	Un
CO-3	Discuss the theory of interference fringes and interference in thin films	1, 7	Un
CO-4	Apply the phenomenon of interference on optical experiments like air wedge, Newton's rings and Michelson's interferometer.	1,4	Ap
CO-5	Define diffraction, polarization, double refraction and optical activity	1	Re
CO-6	Understand the theory of diffraction by a single slit, diffraction by a circular aperture, theory of grating and theory of different types of polarized light.	1, 7	Un
CO-7	Acquire knowledge of simple harmonic motion, damped and forced vibrations, musical notes and musical scale.	1	Un
CO-8	Describe the principle and working of acoustic instruments like Helmholtz resonator, sonometer and Melde's apparatus.	1, 4	Un, Ev
CO-9	Understand the properties, applications, production and detection of ultrasonic waves	1	Un
CO-10	Derive Sabine's formula and apply it to design the acoustically good auditorium and architectures.	1, 7	Cr

ALLIED PHYSICS - II

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Apply Ohm's Law and construct the resistors in series & parallel	3	Ap
CO-2	Analyse the conversion of Galvanometer into Ammeter and Voltmeter	2	Cr
CO-3	Analyse the properties of magnetism and to classify the Dia, Para and Ferromagnetic materials	2	U
CO-4	Analyse Faraday's Law of Electromagnetic Induction and to determine the mutual induction using BG	2	An
CO-5	Identify and analyse the uses of junction diodes and to analyse the characterization of Zener diode and transistors	2	Re
CO-6	Evaluate the basic logic gates such as NAND, NOR, EX-OR, and to prove De-Morgan's Law	2	Ev
CO-7	Analyse the classification of nuclei and the properties of nucleus	3	Ap
CO-8	Analyse and apply the fundamental laws of radioactivity	2	Ev
CO-9	Demonstrate the projectiles and to calculate the time of flight	1	U
CO-10	Analyse and apply Galilean and Lorentz transformation equations	3	Ap

ELECTRICITY & ELECTROMAGNETISM

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Class level (CL)
CO-1	Understand the basics and applications of Coulomb's law, Gauss' law and thermoelectric effects	1	Un, Ap
CO-2	Explain the Kohlrausch's bridge method for determining the specific conductivity of an electrolyte.	1, 4	Ex, Ca
CO-3	Understand Ohm's law, Kirchoff's laws, growth and decay of current and charge in different circuits.	1	Un, Ap, Ev,
CO-4	Analyse LCR series resonance and LCR parallel resonance circuits with derivation.	1, 7, 8	An, Ev
CO-5	Understand the about magnetic vectors, B-H curve and Lorentz force.	1	Un, Rp
CO-6	Explain the construction, working and application of moving coil Ballistic galvanometer and DeSauty's bridge.	1, 4, 8	Ex, Ap, An
CO-7	Understand the concepts of Faraday's laws, Owen's bridge and coefficient of coupling.	1, 7	Un, Rp
CO-8	Use of Earth inductor for finding horizontal component and vertical component of the Earth's magnetic field	4, 7	Ap, Ca
CO-9	Derive the Maxwell's equations for material medium and for free space.	1, 8	Un, An
CO-10	Explain the concepts of Hertz experiment for production and detection of EM waves and to understand Poynting vector and displacement current.	1, 4, 8	Ex, Un, Cr

ALLIED PHYSICS– I

Course Outcome:

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Define the fundamentals of elasticity, concept of stress, strain, bending moment and to solve the problems related.	1	Re, Ap
CO-2	Understand the principles of elasticity through the study of Young Modulus and modulus of rigidity.	1,4	Un
CO-3	Understand principles of surface tension and Viscosity	1	Un
CO-4	Describe the properties of fluids such as viscosity and surface tension and evaluate the value of coefficient of viscosity	1,3,4	An, Ev
CO-5	Explain the phenomena of simple harmonic motion and the properties of systems executing such motions.	1,4	An, Ev
CO-6	Determine the frequency of tuning fork by Melde's string experiment and apply the knowledge of simple harmonic motion.	1,3,4	Ca, Un, Ap
CO-7	Understand the laws of thermodynamics, concepts of transport phenomena.	1	Un
CO-8	Demonstrate the experiments to determine the thermal conductivity and specific heat capacity and apply the knowledge of transport phenomena.	1,4	An, E,Ap
CO-9	Acquire mastery of the fundamental principles and applications of interference, diffraction and polarization	1	Ac
CO-10	Demonstrate the experiments to find the wavelength of different colours of light by normal incidence using grating and apply the knowledge of diffraction principle.	1,3,4	An, Ap

MAINTANANCE OF ELECTRICAL APPLIANCES

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	Understand the operations and safe handling of commonly used domestic appliances.	1	U
CO - 2	Understand the basic ideas about the components used in electrical appliances.	1	U
CO - 3	Understand a basic knowledge of electricity and magnetism.	1	U
CO - 4	Understand and apply knowledge to design and troubleshoot the electrical circuits.	1, 3	U, Ap
CO - 5	Understand the basic ideas about transformers and their types and working principles.	1, 4	U, An
CO - 6	Understand the concepts underlying the operation of AC and DC circuits.	1, 3	U
CO - 7	Describe the concept of household circuits and their wiring systems in detail.	1, 4	U, An
CO - 8	Understand the earthing and colour coding of the wires.	1, 3	U
CO - 9	Managing the appliances with safety precautions using switches and fuses.	1, 3	U, Ap
CO - 10	Understand the basic ideas behind inverters, motors, and generators.	1, 3	U

INSTRUMENTATION PHYSICS - I

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Name the Physical quantities and define its use.	1	Re
CO-2	Recall and recognize the units of physical quantities	1	Un
CO-3	Compare the different types of errors. Differentiate average & standard deviation	1,2	Un, Ap
CO-4	Calculate arithmetic mean & its deviation	2	Ap
CO-5	Classify the electrode materials & differentiate them	3,8	An, Ap
CO-6	Design the forms of electrodes	4	Cr
CO-7	Recall instruments used commonly in medical field Identify the instrument	1,8	Un
CO-8	Compare digital & analog instruments Distinguish EEG& ECG	7	Ap, An
CO-9	Classify the types of displays Design a simple circuit using LED	3,4	Un, Cr
CO-10	Infer the use of LCD Explain incandescent display.	5	Un, Ev

BASIC PHYSICS-I

Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Recall the definition of speed, velocity and acceleration	1	Re
CO-2	Apply the principle of work, power and energy in any one daily activity.	3	Ap
CO-3	List out the applications of Bernouille's theorem	3	Ap
CO-4	Analyse the functioning of aventurimeter and Pitot's tube	7	An
CO-5	Summarize the effect of reverberation in buildings	1	Un
CO-6	Create a method to produce and detect plane polarized light	7	Cr
CO-7	Enumerate the different types of resistances	1	Un
CO-8	Construct Wheatstone's bridge using Kirchoff's law	7	Cr

APPLIED PHYSICS

Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Explain about the conventional energy Sources	1,7	Re,Un
CO-2	Illustrate about the world's reserve of conventional energy. To classify various forms of energy.	1	Un,An
CO-3	Summarize about fossil fuels such as coal, oil and natural gas and their availability, statistical details.	1	Re,Ev
CO-4	Explain about fossil fuel's application and to list out the merits and demerits.	1,6	An
CO-5	Illustrate about Bio mass energy and Biomass classification and to elaborate the Bio Mass Conversion process	1,5	Re,An
CO-6	Summarize about Dheena Bandhu Model gas plant. They can explain the importance of wood gasification, Also to list out the merits and demerits of Bio Mass	1,5	Un,Ev
CO-7	Demonstrate about the renewable energy resources Such as solar energy and their applications	1,6	Re
CO-8	Elaborate about solar pond, solar water heater, solar cookers, solar green house and solar cell	1,3	Un,An
CO-9	Illustrate about Geothermal energy and Geo thermal power plant. Summarize about the wind energy, wind farms and wind mill.	1,3	Re,Un
CO-10	Explain the process of producing energy from tides and energy from waves	1,3	Re

HEAT AND THERMODYNAMICS

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	Class level (CL)
CO-1	Acquire the knowledge of Joule-Kelvin effect, liquefaction of hydrogen and helium gases and adiabatic demagnetization.	1	Ap, Un
CO-2	Use the practical applications of the low temperature concepts to refrigerator, air-conditioning machine and super fluidity.	1, 3	Ap, Ex
CO-3	Derive the expressions for pressure, gas laws, Maxwell's law of distribution of molecular velocities, viscosity and thermal conductivity.	1, 7, 8	Un, Rp, Ap
CO-4	Derive and determine the Vander Wall's constants and critical constants.	1, 7	Rp, Un
CO-5	Explain the heat experiments like Forbe's method and Lee's disc method for finding thermal conductivity.	1, 4	Ex, Ap, Ca
CO-6	Understand the concepts of black body radiation, Wien's law, Stefan's law and Newton's law of cooling.	1, 8	Un, Ap
CO-7	Acquire the knowledge of Zeroth law, I and II law of thermodynamics, gas equation and Carnot's theorem.	1, 7	Ap, Rp, Ex
CO-8	Apply the laws of thermodynamics to Carnot's engine, Otto engine and Diesel engine to find efficiency.	1, 7	Ap, Un, Ca
CO-9	Derive the Clausius-Clapeyron equation and second latent heat equation and specific heat relation.	1, 8	Un, Ex
CO-10	Understand the concepts of III law of thermodynamics, entropy and to derive Maxwell's thermo dynamical relations.	1, 7, 8	Un, Ap, Ex

ALLIED PHYSICS - II

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Apply Ohm's Law and construct the resistors in series & parallel	3	Ap
CO-2	Analyse the conversion of Galvanometer into Ammeter and Voltmeter	2	Cr
CO-3	Analyse the properties of magnetism and to classify the Dia, Para and Ferromagnetic materials	2	U
CO-4	Analyse Faraday's Law of Electromagnetic Induction and to determine the mutual induction using BG	2	An
CO-5	Identify and analyse the uses of junction diodes and to analyse the characterization of Zener diode and transistors	2	Re
CO-6	Evaluate the basic logic gates such as NAND, NOR, EX-OR, and to prove De-Morgan's Law	2	Ev
CO-7	Analyse the classification of nuclei and the properties of nucleus	3	Ap
CO-8	Analyse and apply the fundamental laws of radioactivity	2	Ev
CO-9	Demonstrate the projectiles and to calculate the time of flight	1	U
CO-10	Analyse and apply Galilean and Lorentz transformation equations	3	Ap

MAINTANANCE OF ELECTRONIC APPLIANCES

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	Understand the basic ideas about the components we use in electronic appliances.	1	U
CO - 2	Recognize resistors, capacitors, and connection systems.	1, 3	U, C
CO - 3	Understand the fundamentals of measuring instruments.	1, 4	U, An
CO - 4	Understand oscilloscopes and their various types.	1, 3	U, An
CO - 5	Understand the classification of active and passive transducers and their types.	1	U, C
CO - 6	Understand about the transducer's applications, merits, and demerits.	1	U, Ap
CO - 7	Understand the basic concepts of communication devices and their working principles.	1, 5	U
CO - 8	Understand the principles of operation of modern technology communication devices.	1, 5	U
CO - 9	Learn about photography by using cameras and their accessories.	1, 3, 4	U, An
CO - 10	Learn about shutter speed, resolution, filters, and the use of various lenses in cameras.	1, 4	U, An

INSTRUMENTATION PHYSICS II

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Recall the use of multimeters. Compare the analog & digital technique	1,2	Re, Un
CO-2	Deduct the use of measurements of frequency & time interval	2,4	Ev
CO-3	Categorize the various types of transducers. Make use of experiments using them	3,8	An, Ap
CO-4	Conclude the various uses of transducers	5	Ev
CO-5	Compare optical & electron microscope Define their uses	1,2	An, Re
CO-6	Conclude the uses of SEM & TEM	5	Ev
CO-7	Identify the X- Ray pattern Relate fluoroscopy & radiography	2,5	Re, Cr
CO-8	Experiment with computers in medicine	4	Ap
CO-9	Explain Oscilloscope List their uses	1	Un, An
CO-10	Formulate the features of CRT	5	Cr

BASIC PHYSICS-II

Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Recall the structure of nuclei	1	Re
CO-2	Explain the properties of alpha, beta and gamma rays	1	Un
CO-3	Enumerate the applications of para, dia and diamagnetic materials	7	Ap
CO-4	Analyse the role of superconductors in the present technology	3	An
CO-5	Weigh the use of Laser technology in medicinal field	7	Ev
CO-6	Explain the postulates of special theory of relativity	7	Cr
CO-7	Differentiate between analog and digital circuits	3	An
CO-8	Design a logic circuit for the addition of two binary numbers	7	Cr

SPACE PHYSICS

Course Outcome:

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Explain about universe planets. Also to imagine and classify interior and exterior planets	1	Re,Un,Ev
CO-2	Illustrate about Van Allen Belts and to summarize about auroro	1	Re,Un,Ev
CO-3	Classify and illustrate about comets, Meteors, Asteroids	1,5	Re,An
CO-4	Elaborate the salient features of asteroids, meteors and its uses.	1,5	Re,An
CO-5	Describe about sun. To list out the structure of photosphere, chromosphere, Corona.	1	Un
CO-6	Elaborate the satellites of planets their structure. Interpret the phases and features of moon	1	Un,Ev
CO-7	Explain about star constellation. Also to discuss about binary stars and their origin.	1	Un
CO-8	Classify the types of clusters, types of variable, types of galaxies.	1	Un,An
CO-9	Summarize the origin of universe.	1	Un,An
CO-10	Illustrate about the Big Bang Theory, Pulsating Theory, Steady state theory.	1	Re,Un

BASIC ELECTRONICS

Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Differentiate between constant voltage source and constant current source	3	An
CO-2	Explain Norton's theorem and Thevinin's theorem	1	Un
CO-3	Design a voltage regulator using Zener diode	7	Cr
CO-4	Construct a half wave bridge rectifier using diodes and capacitors	7	Cr
CO-5	Explain the forward bias and reverse bias action of a transistor	1	Un
CO-6	Analyse the circuit of astable and monostable multivibrator	3	An
CO-7	Explain the working of a Hartley and Colpitts Oscillator	1	Un
CO-8	Design the circuit for low and high pass filter and explain the frequency response curve	7	Cr

SPECTROSCOPY

Course Outcome:

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Explain different types of motion. Classify molecules according to rotational modes.	1,2	Un, An
CO-2	Discriminate the effect of isotopic substitution	5	An
CO-3	Discuss the 3 IR regions. Justify the interaction of rotations & vibrations on molecules.	1,8	Ev, Un
CO-4	Analyzed the IR techniques & explain its importance in research	1,4	An, Cr
CO-5	Distinguish Rayleigh & Raman scattering Categorize classical & quantum theory of Raman effect	2	An
CO-6	Validate the rule of mutual exclusion	5,8	Ev
CO-7	Formulate Lamber- Beer Law & Calculate transmission from absorbance	5,7	Cr, An
CO-8	Relate the use of UV spectrum in research	8	Ap
CO-9	Explain magnetic resonance & its principles.	1	Un
CO-10	List the uses of MRI Interpret NMR spectra	1,5	Re, Ap

ATOMIC AND NUCLEAR PHYSICS

Course Outcome:

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Understand the concepts of free electron theory, band theory and positive rays.	1	Un, Ap, Ex
CO-2	Derive the expressions for electrical conductivity, thermal conductivity and to explain Hall effect and Hall coefficient.	1	Ex, Ca, Un
CO-3	Explain the vector atom model, coupling schemes and Zeeman effect.	1	Ex, Ap, Un
CO-4	Analyse the Stern and Gerlach experiment with derivation.	3, 4	An, Ap, Ca
CO-5	Understand the production, properties, usage of X-rays and various X-ray diffraction methods.	3,4	Un, Ap
CO-6	Explain the basics of primary and secondary cosmic rays, cosmic ray shower and Van Allen belts.	1	Ex, Ap, Un
CO-7	Find the general properties of nucleus by using liquid drop model and shell model and to understand laws of radioactivity.	1, 7	Ca, Un, Rp
CO-8	Explain the construction, working and application of G.M.counter, Wilson cloud chamber, Cyclotron and betatron.	3	Ex, Ap, Un
CO-9	Apply the concepts of nuclear fission and fusion to atom bomb and hydrogen bomb.	1, 8	Ap, Cr, Ex
CO-10	Classify the elementary particles with examples and understand the concept of quark model.	1, 8	Un, Rp, Ap

PROGRAMMING IN C++

Course Outcome:

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	Understand the basics of C++ programming.	1	U
CO - 2	Understand the applications of C++ modules.	1, 2	U, Ap
CO - 3	Understand the basic techniques of numerical analysis.	1, 2, 7	U, C
CO - 4	Understand and apply computational techniques to physical problems.	1, 7	U, Ap
CO - 5	Understand the procedural and object-oriented paradigms with concepts like streams, classes, functions, and arrays.	1, 2, 8	U
CO - 6	Understand dynamic memory management techniques using member functions, classes, constructors, etc.	1, 8	U, C
CO - 7	Understand the concept of function overloading and operator overloading.	1	U, C
CO - 8	Understand inheritance and its types of inheritance.	1, 8	U, C
CO - 9	Managing the C++ streams with operations and classes	1, 2	U, Ap
CO - 10	Understand the fundamental C++ file operations for single and multiple files.	1, 2	U, Ap

COMMUNICATION ELECTRONICS

Course outcome:

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO 1	Analyse amplitude modulation and AM envelope. To explain AM frequency bandwidth and phasor representation of AM with carrier. To determine the coefficient of modulation or percentage modulation or modulation index.	1,4	Un, An
CO 2	illustrate AM power distribution and AM current relation and efficiency. Elaborate emitter modulations or low power AM collector modulator. Classify low level transmitter and high level transmitter	1	An
CO 3	Analyze the comparison of AM system and Quadrature amplitude modulation. To illustrate the Principles of AM detection and AM receivers	1,5	Re, An
CO 4	Explain about tuned radio frequency receiver or straight receiver. To elaborate double frequency conversion AM receiver.	1	Re, Ev
CO 5	Illustrate Frequency modulation and phase modulation. To determine phase modulation and modulation index.	4,5	Re, Un
CO 6	Elaborate the conversion of FM to PM and they can picturize the phasor representation of FM and PM. To compare AM and FM	1	Ev
CO 7	Explain and Analyze FM detectors and balanced slope detector	4	An
CO 8	Illustrate the ratio detector and to elaborate the important features of FM super heterodyne receiver and FM noise suppression. Also to summarize about threshold extension by FMFB technique	5	An, Un
CO 9	Elaborate about BFSK and to summarize about Binary phase shifting Key. The importance of Quadrature PSK and Differential PSK.	1,5	An, Un
CO 10	Comparison of digital modulations can be done. to compare and classify correlative coding and Duo binary encoding.	1,4	Un, Ap

QUANTUM MECHANICS

Course Outcome:

CO. No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Understand the quantum concepts of black body radiation, Planck's theory and photoelectric effect.	1	Un, Rp, Ex
CO-2	Apply the Bohr's quantization concept of angular momentum to hydrogen atom.	1, 7	Ap, Ca
CO-3	Acquire the knowledge of De Broglie's hypothesis and concepts of phase and group velocities.	1, 8	Rp, Ap
CO-4	Explain the concepts of diffraction and interference of electrons and wave packet	1	Ex, Cr
CO-5	Understand the Heisenberg's uncertainty principle and its proof between energy and time.	1, 7	Un, Ex
CO-6	Illustrate some thought experiments to explain the Heisenberg's uncertainty principle.	1, 4, 8	Ex, Ap
CO-7	Derive Schrodinger's time-dependent and time-independent wave equations.	1, 7	Ap, Un
CO-8	Understand the concepts of wave function, eigenfunction, eigen value, operators and postulates of quantum mechanics.	1	Un, Ca, Ex
CO-9	Apply the concepts of quantum mechanics to particle in one-dimensional box and to particle in a rectangular three-dimensional box	1, 7	Ap, Ca, An
CO-10	Acquire knowledge of application of quantum mechanics to simple harmonic oscillator and transmission across a potential barrier.	1, 8	Ap, Ev, Un

DIGITAL ELECTRONICS

Course Outcome:

CO.No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Define binary number	1	Re
CO-2	Differentiate the various codes in Binary system	3	An
CO-3	Construct the circuit for the basic logic gates	3	Cr
CO-4	Explain the half and full subtractor using logic gates	1	Un
CO-5	Draw the circuit for frequency divider	1	Un
CO-6	Analyse the circuit of a stable and monostable multivibrator	3	An
CO-7	Explain the function of a multiplexer and De- multiplexer	1	Un
CO-8	Differentiate A/d and D/A converter	3	An

SOLID STATE PHYSICS

Course Outcome:

CO.No	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Explain the seven classes of crystals and to illustrate about the Bravais lattice in three dimensions.	1	Re,An
CO-2	Imagine and elaborate about Simple cubic, Face centered cubic, Body centered cubic and Hexagonal closed packed structures. To make use of Braggs's law and reciprocal lattice to SCC, BCC and FCC lattices.	1,3	Un,An
CO-3	Illustrate Langevin's theory of Paramagnetism, Weiss Paramagnetism. To analyze the concept of Ferromagnetism and to summarize about domain theory of ferromagnetism and anti magnetism	5	An,Ev
CO-4	Elaborate about the different types of electric polarizations and to classify and compare about the ionic, orientation and space charge polarization	1,8	An,Ap
CO-5	Classify and about types of bonds in crystals. To illustrate about Vanderwaal's and hydrogen bonding. Comparison of ionic and covalent solids .	1,4	Un,An
CO-6	Elaborate about cohesive energy of ionic solids and the application towards Sodium chloride crystal and the evaluation of Madelung Constant for sodium chloride can be done.	1,5	An,Ev
CO-7	Interpret the general properties of Super conductors. Elaborate the effect of magnetic field and Meissner effect, current of effect.	1,4	An
CO-8	Illustrate about entropy. To list out the application of super conductors	5,8	Re,An
CO-9	Describe about the nano particles and synthesis and its classification. Explain the techniques used in synthesis of nanomaterials and about chemical vapour deposition techniques.	1,3	Re,Ev
CO-10	Classify and compare the properties of nano materials. Applications of nano materials can also be explained.	1,3	Ev,Ap

ENERGY PHYSICS

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO - 1	Understand the importance of conventional and non-conventional energy resources.	1, 6	U
CO - 2	Understand the applications, merits, and demerits of conventional and non-conventional energy resources.	1	U, Ap
CO - 3	Understand the basic aspects of solar energy.	1, 6	U, C
CO - 4	Understand solar energy appliances with their merits and demerits.	1	U
CO - 5	Understand the basic aspects of the photovoltaic principle.	1, 6	U, Kc
CO - 6	Learn about photovoltaic appliances and how they work.	1	C, Ap
CO - 7	Understand the solar cell with its applications and its types.	1, 6	U, Kc
CO - 8	Understand the basic ideas of biomass energy and recognise their merits and demerits.	1, 6	U, An
CO - 9	Understand the methods and classifications of biomass energy.	1	U
CO - 10	Understand the basic principles of wind energy conversion.	1, 6	U
CO - 11	Understand the fundamental concepts of oceans and chemical energy resources, as well as their benefits and drawbacks.	1, 6	U, Ap

MEDICAL PHYSICS

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Define electromagnetic spectrum Sketch the X- ray tube design	1,2	Re, Ap
CO-2	Categorize half wave & full wave rectification	2	An
CO-3	Identify the sources of radio activity. Explain the units of radiation	1,3	Re, Un
CO-4	Measure the biological damage	4	Ev
CO-5	Discuss about CAT scanners, Identify transducers for biomedical applications	1	Ev, Un
CO-6	Estimate the computer analysis of ECG	5	Cr
CO-7	State radiography, Compare Ultrasound imaging & magnetic resonance imaging	1,3	Re,An
CO-8	Determine the uses of Gamma Camera	5	An
CO-9	Generalize the uses of lasers. Interpret the effect of laser radiation on tissues	5,8	Ap
CO-10	Justify laser as a tool beauticians tools	8	Ev

PROJECT

Course Outcome:

CO. No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	Design, build and assess the working of scientific models individually as well as in groups	5, 6	Cr, Ev
CO-2	Plan research works related to crystal growth	5, 6	Cr
CO-3	Synthesize Nano materials and compile the characteristics	3, 5, 6	Cr
CO-4	Assess the output of electronic projects	2, 5, 6	Ev
CO-5	Interpret the physical phenomena in theoretical projects	5, 6	Ap
CO-6	Analyse the various properties of atmosphere using available software	5, 6	An
CO-7	Design solar appliances	5, 6, 7	Cr
CO-8	Calculate the thickness of different hairs using air wedge apparatus	1, 5, 6	An

7.B.SC. CHEMISTRY

Programme Outcome

PO1 :Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate Programme of study

PO2: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups

PO3 :Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development

PO 4 : Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 5 : Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.

PO 6 : Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problem arising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation

PO7: Cooper ation/Team work: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team

PO8 : Scientific reasoning: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.

PO9 : Reflective thinking: Critical sensibility to lived experiences, with self awareness and reflexivity of both self and society

PO10 : Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO11 : Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.

PO12 : Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

PO13 :Moral and ethical awareness/reasoning: Ability toembrace moral/ethical values in conducting one’s life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstratingthe ability to identify ethical issues related to one’s work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO14 : Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 15 : Lifelong learning: Ability to acquire knowledge and skills, including „learning how to learn“, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.

Programme Specific Outcomes

PSO1: Disciplinary Knowledge: Understand the fundamental principles, concepts, and theories related to physics and computer science. Also, exhibit proficiency in performing experiments in the laboratory.

PSO2: Critical Thinking: Analyse complex problems, evaluate information, synthesize information, apply theoretical concepts to practical situations, identify assumptions and biases, make informed decisions and communicate effectively

PSO3: Problem Solving: Employ theoretical concepts and critical reasoning ability with physical, mathematical and technical skills to solve problems, acquire data, analyze their physical significance and explore new design possibilities.

PSO4: Analytical & Scientific Reasoning: Apply scientific methods, collect and analyse data, test hypotheses, evaluate evidence, apply statistical techniques and use computational models.

PSO5: Research related skills: Formulate research questions, conduct literature reviews, design and execute research studies, communicate research findings and collaborate in research projects.

PSO6: Self-directed & Lifelong Learning: Set learning goals, manage their own learning, reflect on their learning, adapt to new contexts, seek out new knowledge, collaborate with others and to continuously improve their skills and knowledge, through ongoing learning and professional development, and contribute to the growth and development of their field.

QUANTITATIVE INORGANIC ESTIMATION (TITRIMETRY) AND INORGANIC PREPARATIONS

Course Outcomes

COs	On successful completion of the course the students should be able to
CO1:	Explain the basic principles involved in titrimetric analysis and inorganic preparations
CO2:	Compare the methodologies of different titrimetric analysis
CO3:	Calculate the concentrations of unknown solutions in different ways and develop the skill to estimate the amount of a substance present in a given solution.
CO4:	Assess the yield of different inorganic preparations and identify the end point of various titrations

ALLIED CHEMISTRY FOR PHYSICAL SCIENCES I

Course Outcomes

COs	On successful completion of the course the students should be able to
CO 1:	Gain in-depth knowledge about the theories of chemical bonding, nuclear reactions and its applications.
CO 2:	Evaluate the efficiencies and uses of various fuels and fertilizers
CO 3	Explain the type of hybridization, electronic effect and mechanism involved in the organic reactions explain the type of hybridization, electronic effect and mechanism involved in the organic reactions
CO 4:	Apply various thermodynamic principles, systems and phase rule.
CO 5:	Explain various methods to identify an appropriate method for the separation of chemical components

ALLIED CHEMISTRY PRACTICAL FOR PHYSICAL SCIENCES I

Course Outcomes

COs	On successful completion of the course the students should be able to
CO 1:	Gain an understanding of the use of standard flask and volumetric pipettes, burette.
CO 2:	Design, carry out, record and interpret the results of volumetric titration
CO 3:	Apply their skill in the analysis of water/hardness.
CO4:	Analyze the chemical constituents in allied chemical products

FOUNDATION COURSE

Course Outcomes

COs	On successful completion of the course the students should be able to
C01:	Learn about atom structure and periodic properties.
C02:	Gain knowledge on types of chemical bonding
C03:	Explain different states of matter
C04:	Discussion on nomenclature and isomerism in organic compounds
C05:	Knowledge on electromagnetic radiation and its interaction with matter

GENERAL CHEMISTRY-II

Course Outcomes

COs	On successful completion of the course the students should be able to
CO1	Explain the concept of acids, bases and ionic equilibria; periodic properties of s and p block elements, preparation and properties of aliphatic and aromatic hydrocarbons
CO2	Discuss the periodic properties of sand p- block elements, reactions of aliphatic and aromatic hydrocarbons and strength of acids
CO3	Classify hydrocarbons, types of reactions, acids and bases, examine the properties s and p block elements, reaction mechanisms of aliphatic and aromatic hydrocarbons
CO4	Explain theories of acids, bases and indicators, buffer action and important compounds of s block elements
CO5	Assess the application of hard and soft acids indicators, buffers, compounds of s and p- block elements and hydrocarbons

QUALITATIVE ORGANIC ANALYSIS AND PREPARATION OF ORGANIC COMPOUNDS

Course Outcomes

COs	On successful completion of the course the students should be able to
CO1:	Observe the physical state, odour, colour and solubility of the given organic compound.
CO2:	Identify the presence of special elements and functional group in an unknown organic compound performing a systematic analysis.
CO3:	Compare mono and dicarboxylic acids, primary, secondary and tertiary amines, mono and diamides, mono and polyhydric phenols, aldehyde and ketone, reducing and non- reducing sugars and explain the reactions behind it.
CO4:	Exhibit a solid derivative with respect to the identified functional group.

ALLIED CHEMISTRY FOR PHYSICAL SCIENCES II

Course Outcomes

COs	On successful completion of the course the students should be able to
CO 1:	Write the IUPAC name for complex, different theories to explain the bonding in coordination compounds and water technology
CO 2:	Explain the preparation and property of carbohydrate, amino acids and nucleic acids.
CO 3:	Apply/demonstrate the electrochemistry principles in corrosion, electroplating and fuel cells
CO 4:	Identify the reaction rate, order for chemical reaction and explain the purpose of a catalyst.
CO 5:	Outline the various type of photochemical process.

ALLIED CHEMISTRY PRACTICAL FOR PHYSICAL SCIENCES

Course Outcomes

COs	On successful completion of the course the students should be able to
CO1	Gain an understanding of the use of standard flask and volumetric pipettes, burette
CO2	Design, carry out, record and interpret the results of volumetric titration.
CO3	Apply their skill in the analysis of water/hardness.
CO4	Analyze the chemical constituents in allied chemical products analyze the chemical constituents in allied chemical products

DAIRY CHEMISTRY

Course Outcomes

COs	On successful completion of the course the students should be able to
CO1	Understand about general composition of milk – constituents and its physical properties
CO2	Acquire knowledge about pasteurization of Milk and various types of pasteurization - Bottle, Batch and HTST Ultra High Temperature Pasteurization.
CO3	Learn about Cream and Butter their composition and how to estimate fat in cream and Ghee
CO4	Explain about Homogenized milk, flavoured milk, vitaminised milk and toned milk
CO5	Have an idea about how to make milk powder and its drying process - types of drying

COSMETICS AND PERSONAL GROOMING

Course Outcomes

COs	On successful completion of the course the students should be able to
CO1	Know about the composition of various cosmetic products
CO2	Understand chemical aspects and applications of hair care and dental care and skin care products.
CO3	Understand chemical aspects and applications of perfumes and skin care products.
CO4	To understand the methods of beauty treatments their advantages and disadvantage
CO5	Understand the hazards of cosmetic products.

8.B.SC., ZOOLOGY

Programme Outcomes:

PO1: Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate Programme of study

PO2: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.

PO3: Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.

PO4: Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of nonfamiliar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO5: Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.

PO6: Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problem arising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation

PO7: Cooperation/Team work: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team

PO8: Scientific reasoning: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.

PO9: Reflective thinking: Critical sensibility to lived experiences, with self

awareness and reflexivity of both self and society.

PO10 Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data. PO 11 Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.

PO 12 Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

PO 13: Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 14: Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 15: Lifelong learning: Ability to acquire knowledge and skills, including „learning how to learn“, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.

Programme Specific Outcomes:

PSO1 – Placement: To prepare the students who will demonstrate respectful engagement with others’ ideas, behaviors, beliefs and apply diverse frames of reference to decisions and actions.

PSO 2 - Entrepreneur: To create effective entrepreneurs by enhancing their critical thinking, problem solving, decision making and leadership skill that will facilitate startups and high potential organizations

PSO3 – Research and Development: Design and implement HR systems and practices grounded in research that comply with employment laws, leading the organization towards growth and development.

PSO4 – Contribution to Business World: To produce employable, ethical and innovative professionals to sustain in the dynamic business world.

PSO 5 – Contribution to the Society: To contribute to the development of the society by collaborating with stakeholders for mutual benefit

ANIMAL DIVERSITY- I : INVERTEBRATA

Course Objectives

1. *To elucidate the importance of taxonomy.*
2. *To know the methods of nomenclature,*
3. *To realize the differences between Protozoa and Metazoa*
4. *To study the structure, functional organization, adaptations and the economic importance of lower and higher Invertebrates.*

Course Outcomes

Students can identify the distribution, biological status and the importance of the Invertebrate animals.

PROFESSIONAL ENGLISH FOR LIFE SCIENCES –I

Course Objectives

- 1. To develop the language skills of students by offering adequate practice in professional contexts.*
- 2. To enhance the lexical, grammatical and socio-linguistic and communicative competence of first year life sciences students.*
- 3. To focus on developing students' knowledge of domain specific registers and the required language skills.*
- 4. To develop strategic competence that will help in efficient communication.*
- 5. To sharpen students' critical thinking skills and make students culturally aware of the target situation.*

Course Outcomes

1. Recognise their own ability to improve their own competence in using the language.
2. Use language for speaking with confidence in an intelligible and acceptable manner.
3. Understand the importance of reading for life.
4. Read independently unfamiliar texts with comprehension.
5. Understand the importance of writing in academic life.

ENVIRONMENTAL STUDIES

Course Objectives

The scope of environmental studies is very wide and it deals with many areas like

- i) Conservation of natural resources,*
- ii) ecological aspects,*
- iii) pollution of the surrounding natural resources,*
- iv) controlling the pollution,*
- v) social issues connected to it, and*
- vi) impacts of human population on the environment.*

Course Outcomes

1. Students enabled to have thorough knowledge of environment.
2. Students came to know their responsibilities to care and protect the environment.
3. Students could understand their role to establish sustained environment.

ANIMAL DIVERSITY –II: CHORDATA

Course Objectives

To exemplify the intermediary position of Protochordates between invertebrates and vertebrates, and to study the structure, functional organization, adaptations and the economic importance of lower and higher chordates.

Course Outcomes

To understand the knowledge of habits and habitats and biology of vertebrates.

PROFESSIONAL ENGLISH FOR LIFE SCIENCES –II

Course Outcomes

1. The Professional Communication Skills Course is intended to help Learners in Arts and Science colleges,
2. Develop their competence in the use of English with particular reference to the workplace situation.
3. Enhance the creativity of the students, which will enable them to think of innovative ways to solve issues in the workplace.
4. Develop their competence and competitiveness and thereby improve
5. their employability skills.
6. Help students with a research bent of mind develop their skills in writing
7. reports and research proposals.

DEVELOPMENTAL ZOOLOGY

Course Objectives

To understand the sequential changes from cellular grade of organization to organ grade of organization in the development of multicellular organisms.

Course Outcomes

To know the developmental processes of animals particularly in man

HOME AQUARIUM

Course Objectives

To understand the construction and maintenance of aquarium, selection, culture and breeding techniques.

Course outcome:

To gain knowledge about the culture practices of aquarium fishes.

NUTRITION AND DIETETICS

Course Objectives

To understand the importance of the various food stuffs on one side and to study malnutrition, Nutrition related diseases and special diets for persons suffering from diseases on the other side.

Course outcome:

To understand the food we have to take and balanced diets to maintenance of health practices.

BEE KEEPING

Course Objectives

To know the knowledge of rearing of honey bees and extraction of honey.

Course outcome:

To encourage the students to develop self employment and keep apiary.

CLINICAL BIOLOGY

Course Objectives

To understand the methodology of collection, analysis and preservation of samples related to various diseases.

Course outcome:

To understand various preventive measures

CELL AND MOLECULAR BIOLOGY

Course Objectives

To understand the ultrastructure and functions of various cell organelles..

Course outcome:

To inculcates the techniques of Cell and Molecular Biology.

BIOPHYSICS AND BIOINSTRUMENTATION

Course Objectives

To know the methods of various instrumentations related to biological systems and functions.

Course outcome:

To gain knowledge about the establishment of clinical laboratory and also useful for research purposes.

VERMITECHNOLOGY

Course Objectives

To get a thorough knowledge of producing vermicompost and vermiculture

Course outcome:

To encourage the self employment practices and save the human being and environment by the way of minimizing the use of chemical fertilizers.

PUBLIC HEALTH AND HYGIENE

Course Objectives

To understand the physical, mental and social health and also know the safer disposal of various wastes.

Course outcome:

To gain the knowledge about the preventive measures.

COMMUNITY AND SOCIAL PREVENTIVEMEDICINE

Course Objectives

To understand the knowledge of epidemic and endemic diseases

Course outcome:

To gain the knowledge about the maintenance of hygienic conditions, various diseases and their preventive measures

ECOLOGY & TOXICOLOGY

Course Objectives

To study the interaction and interdependence among environmental factors and living organisms – To enumerate the ill-effects and the health hazards of toxic agents released to the environment – To discern the evolutionary significance of animals, theories origin of species and significance.

Course outcome:

To understand the dynamics of various ecosystems such as marine, freshwater and terrestrial.

GENETICS

Course Objectives

To understand the inheritance of parental characters and hereditary diseases

Course outcome:

To gain knowledge of Mendelian traits of human traits and transmission of characters.

ANIMAL PHYSIOLOGY AND BIOCHEMISTRY

Course Objectives

Carving an integrated approach to chemistry related to the functional significance of the various organs and organ systems of animals.

Course outcome:

Students learned about various physiological systems and their activities.

IMMUNOLOGY AND MICROBIOLOGY

Course Objectives

To study the types of immunity and immune system and their function and basic awareness about the microorganisms.

Course outcome:

To know the role of immune system and life cycle of microbes and Pathogenesis and their control measures.

EVOLUTION

Course Objectives

To know how the life originated in our planet and related theories

Course outcome:

Students learned principle of evolution and factors responsible for Evolution..

ANIMAL BIOTECHNOLOGY

Course Objectives

To introduce the various concepts, principles of b\Biotechnology.

To illustrate the concepts of isolation, cloning and insertion of various genes into a prokaryotes.

To describe the utilization of Biotechnology in various biological fields

Course outcome:

Students learned about the advancement in Biotechnological techniques and their utilization in biological fields.

BIostatistics, Computer Applications and Bioinformatics

Course Objectives

To study the descriptive and non- descriptive methods of Mathematics and their applications in biology incorporating computer system.

Course outcome:

To understand the Mathematical principles of Biological systems and Bioinformatics

SERICULTURE

Course Objectives

To explore the scope for students adopting Sericulture as a vocation after their graduation as it is rural based and welfare oriented agro based industry.

Course outcome:

Students learned how to rear, maintain the silk wormsscientifically and know the reeling of silk.

ECONOMIC ENTOMOLOGY

Course Objectives

To understand the role of insects in the ecosystem and their beneficial and harmful impacts on the society and plants.

Course outcome:

Students learned about the beneficial and harmful insects.

DAIRY FARMING

Course Objectives

To introduce various breeds of Indian cows

To describe construction, maintenance of sheds and also introduce the growing and maintenance of dairy animals

To describe how to prevent and manage various diseases of dairy animals

Course outcome:

Students learned about selection, growing and maintenance of dairy animals

APICULTURE

Course Objectives

To examine the scope for self employment opportunities after their graduation account of the rural based and welfare oriented nature of this vocation.

Course outcome:

Students learned about selection, rearing and maintenance of apiary.

FOOD AND FOOD PROCESSING TECHNOLOGY

Course Objectives

To understand the physical and chemical properties of food stuff, the methods of preparation of palatable diets and the techniques employed to increase their shelf – life.

Course outcome:

Understood various value added food products and their marketing strategies

POULTRY SCIENCE

Course Objectives

To introduce various breeds of chicks, layers and broilers

To describe construction, maintenance of poultry keeping and also introduce the rearing and maintenance of poultry

To describe how to prevent and manage various diseases of poultry

Course outcome:

Students can get self employed after their graduation. To know about poultry farming and to get deep knowledge about poultry manure, nutrition and various diseases

**INDUSTRIAL FISH AND FISHERIES – ALLIED
BIOLOGY OF FISH**

Course Objectives

To help the students taking Industrial Fish and Fisheries as a subject to have a thorough knowledge of the various aspects of the Biology of Fish

Course outcome:

To understand the marketing of fishes and fishery products.

**INDUSTRIAL FISH AND FISHERIES – ALLIED
CAPTURE FISHERIES**

Course Objectives

To highlight the recent trends and types of capture fisheries to students studying industrial fish and fisheries.

Course outcome:

To understand the knowledge of techniques about fish capture and culture.

9.B.SC., COMPUTER SCIENCE

Programme Outcomes (PO)

P01	Scientific aptitude will be developed in Students
P02	Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the Computer Science & humanities stream
P03	Students will become employable; Students will be eligible for career opportunities in education field, Industry, or will be able to opt for entrepreneurship.
P04	Students will possess basic subject knowledge required for higher studies, professional and applied courses
P05	Students will be aware of and able to develop solution oriented approach towards various Social and Environmental issues.
P06	Ability to acquire in-depth knowledge of several branches of Computer Science and aligned areas. This Programme helps learners in building a solid foundation for higher studies in Computer Science and applications.
P07	The skills and knowledge gained leads to proficiency in analytical reasoning, which can be utilized in modelling and solving real life problems.
P08	Utilize computer programming skills to solve theoretical and applied problems by critical understanding, analysis and synthesis.
P09	To recognize patterns and to identify essential and relevant aspects of problems.
P010	Ability to share ideas and insights while seeking and benefitting from knowledge and insight of others.
P011	Mould the students into responsible citizens in a rapidly changing interdependent society

Programme Specific Outcomes

PSO1	Think in a critical and logical based manner
PSO2	Familiarize the students with suitable software tools of computer science and industrial applications to handle issues and solve problems in mathematics or statistics and real time application related sciences.
PSO3	Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
PSO4	Understand, formulate, develop programming model with logical approaches to a Address issues arising in social science, business and other contexts.
PSO5	Acquire good knowledge and understanding to solve specific theoretical and applied problems in advanced areas of Computer science and Industrial statistics.
PSO6	Provide students/learners sufficient knowledge and skills enabling them to undertake further studies in Computer Science or Applications or Information Technology and its allied areas on multiple disciplines linked with Computer Science.
PSO7	Equip with Computer science technical ability, problem solving skills, creative talent and power of communication necessary for various forms of employment.
PSO8	Develop a range of generic skills helpful in employment, internships& societal activities.
PSO9	Get adequate exposure to global and local concerns that provides platform for further exploration into multi-dimensional aspects of computing sciences.

PYTHON PROGRAMMING

Course Outcomes

COs	On completion of this course, students will	POs
CO1	Learn the basics of python, Do simple programs on python, Learn how to use an array.	PO1, PO2, PO3, PO4, PO5, PO6
CO2	Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.	PO1, PO2, PO3, PO4, PO5, PO6
CO3	Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules.	PO1, PO2, PO3, PO4, PO5, PO6
CO4	Work with List, tuples and dictionary, Write program using list, tuples and dictionary.	PO1, PO2, PO3, PO4, PO5, PO6
CO5	Usage of File handlings in python, Concept of reading and writing files, Do programs using files.	PO1, PO2, PO3, PO4, PO5, PO6

OFFICE AUTOMATION LAB

Course Outcomes

COs	To know what they are going to learn
CO1:	Know how to solve various problems on discrete mathematics
CO2:	Use approximation to solve problems
CO3:	Differentiation and integration concept are applied
CO4:	Apply , direct methods for solving linear systems
CO5	Discrete solution of ordinary problems

PROBLEM SOLVING TECHNIQUES

Course Outcomes

COs	On completion of this course, students will	POs
CO1	Study the basic knowledge of Computers. Analyze the programming languages.	PO1, PO2, PO3, PO4, PO5, PO6
CO2	Study the data types and arithmetic operations. Know about the algorithms. Develop program using flow chart and pseudocode.	PO1, PO2, PO3, PO4, PO5, PO6
CO3	Determine the various operators. Explain about the structures. Illustrate the concept of Loops	PO1, PO2, PO3, PO4, PO5, PO6
CO4	Study about Numeric data and character-based data. Analyze about Arrays.	PO1, PO2, PO3, PO4, PO5, PO6
CO5	Explain about DFD Illustrate program modules. Creating and reading Files	PO1, PO2, PO3, PO4, PO5, PO6

DATA STRUCTURE AND ALGORITHMS

Course Outcomes

COs	On completion of this course, students will	POs
CO1	Understand the concept of Dynamic memory management, data types, algorithms, Big O notation	PO1,PO6
CO2	Understand basic data structures such as arrays, linked lists, stacks and queues	PO2
CO3	Describe the hash function and concepts of collision and its resolution methods	PO2,PO4
CO4	Solve problem involving graphs, trees and heaps	PO4,PO6
CO5	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data	PO5,PO6

DIGITAL LOGIC FUNDAMENTALS

Course Outcomes

COs	On completion of this course, students will	POs
CO1	Understand the concept of various number systems	PO1,PO6
CO2	Understand basic concepts of digital systems	PO2
CO3	Describe the storage structures	PO2,PO4
CO4	Solve problems using SOP and	PO4,PO6
CO5	Apply concepts for simplifications	PO5,PO6

INTRODUCTION TO HTML

Course Outcomes

COs	On completion of this course, students will	POs
CO1	Understand the concept of various tags	PO1,PO6
CO2	Understand basic designing	PO2
CO3	Describe the hash function and concepts of tables, designing etc	PO2,PO4
CO4	Solve problem involving style sheets	PO4,PO6
CO5	Apply the attributes in designing web pages	PO5,PO6

UNDERSTANDING INTERNET

Course Outcomes

COs	On completion of this course, students will	POs
C01	Understand the concept of network	PO1,PO6
C02	Understand basic languages	PO2
C03	Describe the security hash function and concepts of security methods	PO2,PO4
C04	Solve problem involving malware	PO4,PO6
C05	Apply Algorithm for secure network	PO5,PO6

1. M.A ECONOMICS

Programme Outcomes (POs)

Identify the standard level of growth and development of the economy of the country and to determine and frame planning policies.
Identify and formulate the research design, analyze data and be able to unite the research report and provide valid inferences.
Understand the concepts of national income, macroeconomic variables such as multiplier, consumption, investment and general equilibrium.
To gain mathematical knowledge for better understanding of economic concepts and theory and ability to apply the knowledge in the formulation and validation of economic theories.
Understand and apply the knowledge of the industrial economics on location, efficiency, productivity and industrial policies
Frame monetary policies, understand and analyze the value of money, cash balance, capital markets and banking system and hence improve the ability to compare central bank function with that of the other countries.

Program Specific Outcomes (PSOs)

To apply economic theories and to expand the problem-solving acumen.
They will be taught the applications of theories in analyzing current economic problems
Conscious about the socio-economic environment, both domestic and international and its implications on business.
The students of Economics can easily crack the competitive examinations and can become successful in getting employment opportunities.
Open up research opportunities in the national level premier educational institutes.
The character building of students and makes them responsible citizens.
The students are exposed to national and international problems and hence they will have a thorough understanding of national and international economic events.
To understand the importance of inclusion, development and sustainability in order to resolve related local, national and global issues.

ADVANCED MICRO ECONOMIC THEORY – I

Course Objectives:

- 1. To equip the students with the basic analytical skills on the economic behavior of individuals, firms and markets.*
- 2. To impart the knowledge on consumer and producer behavior to reach equilibrium*

Course Outcomes

After the completion of the course, the students must be able to

1. Have a good understanding of consumer behavior
2. Gain knowledge of Theories of production.
3. Get a complete knowledge about Market Structure and Pricing.
4. Know the collusive models of the economy.
5. Study the Theories of the Firm.

MACRO-ECONOMIC THEORY AND ANALYSIS - 1

Course Objectives:

- 1. To identify the different concepts of national income.*
- 2. To illustrate the circular flow of income of a country.*
- 3. To analyse the implications of change in policy measures for Business and the economy.*

Course Outcomes:

1. Evaluate the national income accounting.
2. Gain knowledge of theory of inflation.
3. To understand the sectoral flow of income in the country.
4. To evaluate critically on consumption function and investment function.
5. To obtain knowledge of real business cycle theory.

STATISTICAL METHODS

Course Objectives:

- 1. To equip the students with the basic analytical skill on the statistical methods.*
- 2. To enable the Students knowledge on hypothesis testing and model selection.*

Course Outcomes:

1. Understand the knowledge of sampling Distribution and Applications.
2. Gain knowledge of test of Hypothesis.
3. To develop the skills of sampling and sample survey.
4. Gain knowledge of correlation and Regression.
5. To acquire knowledge on sampling applications.

INTERNATIONAL ECONOMICS

Course Objectives:

- 1. To enable the students to gain knowledge about the different aspects of foreign trade procedures and its significance at the international level.*
- 2. To create awareness among the students about world trade and economy.*

Course Outcomes:

1. Develop the systematic understanding about the international trade.
2. Develop knowledge on inter – regional and foreign trade.
3. Apply the theories of international trade.
4. Develop a systematic understanding about the foreign aid and MNCs.
5. To understand the functions of World Trade Organisation.

WELFARE ECONOMICS

Course Objectives:

- 1. To impart the knowledge on Scope of Welfare Economics.*
- 2. To understand the importance of Social Welfare Functions.*

Course Outcomes:

1. Have a good understanding on the concept of optimum resources allocation under Capitalism and Socialism.
2. Study the Classification of Welfare.
3. Gain knowledge on Social Welfare Functions.
4. Gain knowledge on Taxation.
5. Acquired skill in social choice theories.

ENTREPRENEURIAL DEVELOPMENT

Course Objectives:

- 1. The objective of this course is to develop and strengthen entrepreneurial quality and motivation amongst the students.*
- 2. To motivate the entrepreneurial instinct and to develop necessary knowledge and skills among the students.*

Course Outcomes

After the completion of the course, the students must be able to

1. Have a good understanding of the concept Entrepreneurial Development.
2. Gain knowledge of Entrepreneurial Growth.
3. Get a complete knowledge about Project appraisal and Finance.
4. Study the various Financial Institutions.
5. Measure the activities of entrepreneurs participation in economic development.

ADVANCED MICRO ECONOMIC THEORY – II

Course Objectives:

1. To impart skills on theories of firm and distribution, welfare Economics, general Equilibrium in closed and open systems of Economic Analysis.

Course Outcomes

After the completion of the course, the students must be able to

1. Have a good understanding of alternative theories of the firms.
2. Gain knowledge of Distribution Theories.
3. Get a complete knowledge about Welfare Economics and General Equilibrium Analysis.
4. Study the Theories of Risk and uncertainty.
5. Know the recent development in microeconomic theories.

MACRO-ECONOMIC THEORY AND ANALYSIS -II

Course Objectives:

- 1. To develop the knowledge on theories, models and policies governing the function of the different domains of macroeconomic system.*
- 2. To provide the knowledge on the macroeconomic techniques.*
- 3. To identify the different views on interest.*

Course Outcomes:

1. To evaluate a critical insight on classical and Keynesian macroeconomic models.
2. To know the contribution of Baumol and Tobin Approaches.
3. To construct a sound knowledge on macro economic policies.
4. Have a good understanding of IS-LM model with labour market.
5. Interpret macroeconomic theories and policies.

MATHEMATICAL METHODS

Course Objectives:

- 1. To familiarize the concepts relating to Matrix*
- 2. To make aware of application of matrix technique to the solution of linear equations.*
- 3. To impart knowledge on differential calculus.*
- 4. To develop the skill of deriving total functions from marginal functions.*
- 5. To enable the students to find optimum solution for LPP.*

Course Outcomes:

After the completion of the course, the students will be able to

1. Solve the simultaneous linear equations.
2. Locate the maxima and minima for the functions.
3. Employ Cobb-Douglas production function in research.
4. Apply integral calculus to find consumer and producer's surplus.
5. Use graphical method to solve LP problems.

HISTORY OF ECONOMIC THOUGHT

Course Objectives:

- 1. To acquaint students with different schools of economic thought.*
- 2. To make students understand the contribution of Indian Economists in Economics*
- 3. To enable students to analyse the Contribution of Nobel laureates in development of economic thought*

Course Outcomes:

On completion of the course, students would be able to:

1. Understand the doctrine and the concepts of the history of economic thoughts.
2. Predict the role of neo classical school of economists in price determination in consumer surplus and innovation.
3. Have a historical consciousness of economic ideas and its evolution in relation to socialism by Karl Marx.
4. Identify Keynesian revolution and monetarism.
5. Know the recent developments in economic thoughts.

HUMAN RESOURCE DEVELOPMENT

Course Objectives:

- 1. To know about Human Resource Development and Human Resource Management.*
- 2. To know about the fundamental concepts of socialisation.*
- 3. To enable the Students to gain knowledge about the HRD Interventions.*
- 4. To know about Realignment and Retention.*

Course Outcomes:

1. To analyse Human Resource Development Functions.
2. Have a good understanding of Roles and Competencies of HRD Professionals.
3. Gain knowledge on Human Resource Development Applications.
4. Have a good understanding of issues in employee counseling.
5. Evaluate Human resource performance and work force.

RURAL DEVELOPMENT

Course Objectives:

- 1. To impart the knowledge on rural poverty, inequality, unemployment and Regional Disparities.*
- 2. To understand the knowledge on NGO's and Social Welfare Organisation.*
- 3. To enable the student to gain knowledge about the Panchayat Raj and Co-operatives.*
- 4. The objective of the course is to develop and strengthen the knowledge on Rural development programmes.*

Course Outcomes:

1. Describe the importance of rural development.
2. Analyse the causes and remedies of rural poverty.
3. Understand the role of SHG's in rural development.
4. Have a good understanding of rural health care policy and rural energy programmes.
5. Be aware of the availability in rural welfare schemes for service sector of the economy.

AGRICULTURAL ECONOMICS

Course Objectives:

- 1. To enable the students to understand the significance of Agriculture.*
- 2. To enable the students to gain knowledge about the different aspects of Agricultural finance and Capital.*

Course Outcomes:

1. Develop the relationship between Agriculture and Industry.
2. Understand the different trends of Agricultural productivity.
3. Identify the problems of Agricultural labours.
4. Develop the knowledge on Agricultural finance and Agricultural policy.
5. Measure the effects of World Trade Organization in Indian Agriculture.

DEVELOPMENT ECONOMICS

Course Objectives:

- 1. To equip with strong economic fundamental governance and the process of economic growth and development.*
- 2. To understand the alternative theory of growth.*
- 3. To understand the knowledge of planning in a mixed economy.*
- 4. Gain knowledge of structural view of development.*

Course Outcomes:

1. Construct the knowledge of economics planning and growth.
2. Have a good knowledge about perspective and annual planning.
3. Provide an illustration of Indian economy.
4. To construct a critical study on the development of the economic scenario.
5. Evaluate the various planning and development in Indian Economy.

MONETARY ECONOMICS

Course Objectives:

- 1. To gain sound knowledge in monetary theories and banking practices.*
- 2. To provide a strong knowledge based on India's monetary problems.*

Course Outcomes:

1. Understand the concepts of Banking.
2. Analyse the measures of money supply.
3. Develop the knowledge on recent trends on banking system.
4. Identify the difference between money market and capital market.
5. Explore the instruments and role of monetary policy.

RESEARCH METHODOLOGY

Course Objectives:

- 1. To understand the need for research in social science.*
- 2. To know the different types of research and steps in scientific research.*
- 3. To be aware of sampling and non-sampling errors.*
- 4. To acquire knowledge on fundamentals of hypothesis testing.*
- 5. To understand the steps in drafting a research report.*

Course Outcomes:

After the completion of the course the students will be able to

1. Identify a research problem.
2. Select the appropriate sampling design.
3. Frame a hypothesis and research objectives.
4. Have sound knowledge on data collection and processing of data.
5. Writing a research report in an organized manner.

COMPUTER APPLICATION IN ECONOMICS

Course Objectives:

- 1. To introduce the concepts of Data Analysis.*
- 2. To educate the students to improve the skills towards career prospects.*

Course Outcomes:

1. To draw distributive tables, graphs and trend lines.
2. To gathering knowledge about MS office.
3. Gain knowledge about EXCEL.
4. To understand how to create, save and print a document.
5. Comprehend the use of regression analysis for analyzing economic data.

DEMOGRAPHY

Course Objectives:

- 1. To know India's demographic conditions and population policy.*
- 2. To develop gender based education with professional ethics.*

Course Outcomes:

1. To import the knowledge on History of Census taking in India.
2. Gain knowledge of population growth in developed and developing countries.
3. To understand the measures and fertility rate.
4. Understand the basic concepts and definitions.
5. To analyze the various population policies in India.

INDIAN ECONOMIC DEVELOPMENT AND POLICY

Course Objectives:

- 1. To equip with the current social issues.*
- 2. To make the students understand some important components of Indian economy and economic problems.*
- 3. To enable the students to gain knowledge about the Indian Population Poverty line.*
- 4. To make the students understand the Inter-regional disparities in growth and development.*

Course Outcome:

1. To develop knowledge on Issues on performance of public sector enterprises and privatization
2. To critically evaluate the current social economic issues
3. Create the knowledge about the major poverty alleviation programmers
4. Develop the knowledge on Expenditure trends.
5. Acquire knowledge of participation of India in the International Organizations.

PUBLIC FINANCE

Course Objectives:

- 1. To know the different types of goods.*
- 2. To gain sound knowledge on public expenditure.*
- 3. To understand the basic ideas of taxation.*
- 4. To equip the students with the knowledge of budgeting.*
- 5. To get familiar with the concept of fiscal federalism.*

Course Outcomes:

After the completion of the course, the students will be able to

1. Understand the characteristics of different types of goods.
2. Recognize the need for public expenditure.
3. Have more knowledge on the different types of taxation.
4. Figure out the causes and consequences of public debt in India.
5. Acquire strong knowledge base on Indian public finance.

ENVIRONMENTAL ECONOMICS

Course Objectives:

- 1. To enable students acquire knowledge about the Theory of environmental economics.*
- 2. To impart the students to overcome the environmental problems.*

Course Outcomes:

1. To familiarize with the theories of environmental economics.
2. Develop knowledge on renewable and non-renewable resources.
3. To assess India's environmental policies.
4. Understand the Sustainable Economic Development Goals.
5. Apply the environment and economic policy.

HEALTH ECONOMICS

Course Objectives:

- *To explain the key concepts of health economics*
- *To assess the problem with a global perspective*
- *To think critically about the health policies*
- *To understand and analyze health problems*

At the end of the course a student should become public policy analyst in health care system.

Course outcome

After the completion of the course, the students must be able to

1. Have a good understanding of Basic Concepts of Health Economics.
2. Gain knowledge of Health and Development.
3. Get a complete knowledge about Health as Investment.
4. Study the significance of health in Developing Countries.
5. Critically review the medical education standards and health policy in India.

LABOUR ECONOMICS

Course Objectives:

- 1. To understand the concept of Labour Market.*
- 2. To develop the ability to analyse the Labour Welfare Legislation in India.*

Course Outcomes:

1. Develop the knowledge on International Labour Organisation.
2. To assess the Labour Market, Demand and Supply of Labour.
3. Understand the need for Industrial Relation Machinery.
4. Develop the knowledge on Role of State in Industrial Relations.
5. Assess the labour welfare schemes in India.

2. M.A., ENGLISH

Programme Outcomes

P.O. No.	At the end of the programme, the students will be able to:
PO-1	comprehend the significance of literary works in their social, cultural and ideological contexts.
PO-2	discover the incredible diversity of the English Language and Literature throughout the history of the world.
PO-3	ascertain how writers have reacted to the social developments of their contemporary period and produced a text.
PO-4	express the hermeneutic engagement of creative texts with gender, race, region and identity across various significations.
PO-5	problematise the Post-colonial Literatures and cultures with a nationalist perspective.
PO-6	develop comprehensive reading, writing, and research skills of high order.
PO-7	undertake academic and literary profession.
PO-8	adapt themselves to the changing aspects of academic and creative professionalism.

Programme Specific Outcomes

PSO No.	Upon completion of the M.A. English Literature Programme, students will be able to:
PSO-A	locate the historicity and textuality of World Anglophone Literatures.
PSO-B	appraise the diversity of humanist discourses delineated in the texts.
PSO-C	relate the texts to convey and construct cultural values and ideas.
PSO-D	foster and articulate universalism with social empathy.
PSO-E	respond positively to the significant paradigm shift.
PSO-F	validate the texts with dominant critical theories, methodologies, and contemporary practices in the field.
PSO-G	develop proficiency in critical thought and academic writing.
PSO-H	acquire professional skills related to translation and media studies.

BRITISH POETRY

Course Objectives:

To help the students understand the aspects, chronology, sub-genres and movements of British Poetry.

To make the students learn about the literary movements and trends they represent in literary history.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	recognize the various characteristics and sub-genres of poetry.	A, C	K1, K4
CO 2	outline the development of numerous literary movements.	B	K1, K2
CO 3	classify the poets as representatives of their periods.	A, C	K3, K5
CO 4	rationalise British Poetry as an aesthetic record of the societies concerned.	B, C, D	K5
CO 5	analyse British Poetry with a focus on content and form.	F, G	K4, K5
CO 6	apply and evaluate the structure and style of the poetry with poetic tools.	F, G	K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

BRITISH DRAMA

Course Objectives:

To enable the students understand and appreciate the socio-political realities from the 16th century to modern times.

To learn about the various theatrical skills and techniques.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	recall the seminal works of various dramatists throughout the ages	A, C	K1
CO 2	trace the influences and social culture of the English societies through their drama of various periods	B, C	K2, K4
CO 3	apply and enact the drama scenes in classroom	D, E	K3, K6
CO 4	analyse the various dramatic techniques used in the plays	F	K4
CO 5	evaluate the literary elements such as setting, characterization, plot, theme, symbol etc.	F, G	K4, K5
CO 6	express their ideas, thoughts & viewpoints through action	F, G	K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

INDIAN ENGLISH LITERATURE- I

Course Objectives:

- 1. To enable the students to get an overview of the rich tradition of Indian English Literature before independence.*
- 2. To introduce the students to the literary texts from various regional, cultural, social, and political locations in India before independence.*

Course Outcomes:

C.O. No	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	appreciate the diverse aspects of Indian English Literature of the pre-independence era.	A, B	K1, K2
CO 2	identify the unique features of Indian Writings in English.	B, C, E	K2, K4
CO 3	develop a perceptivity of the major historical movements and their impact on literature.	C, D	K3, K5
CO 4	explore the colonial context in which Indian English developed as a language and literature.	D	K5
CO 5	assess the contributions of significant writers of the pre-independent era.	A, E	K3, K4, K5
CO 6	develop literary sensibility and the spirit of Indianness through reading and critically analysing, display an emotional response to the literary texts, cultivate a sense of appreciation for them	F, G	K1, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

AMERICAN LITERATURE – I

Course Objectives:

To help the students situate early American literary texts in their cultural and historical contexts.

To familiarize the students with the literary genres of early American texts and prominent American writers.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	gain knowledge and understanding of a range of American Writings in their cultural contexts.	A, B	K1, K2
CO 2	develop close reading skills as a means of literary analysis.	B, C	K1, K2
CO 3	comprehend the ways, the ideas, values and themes of American society.	A, C, D	K3, K4
CO 4	describe the significant historical and cultural developments of colonial America.	A, B, C	K4, K5
CO 5	assess the major conventions and tropes of transcendental literature.	B, F, G	K5
CO 6	construct short poems/ stories to recreate any scene from the prescribed plays	F, G	K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

AFRICAN LITERATURE

Course Objectives:

To familiarize with the social and political consciousness and economic crisis of Africa.

To make learners aware of various African traditions and cultures through representative texts of African Literature in English

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	understand the various genres and culture of Africa.	A, C	K1, K2
CO 2	familiarise themselves with the basic concepts and assumptions conveyed in the texts.	B, D	K2
CO 3	develop a realization that literature fosters humanistic awareness and attitudes.	B, C, D	K2, K5
CO 4	analyse and comprehend Africa's reality through its narratives, protests against colonization, struggle for independence, African pride and hope for the future.	E, F	K2, K4
CO 5	assess Africa through specific forms of literary expression from the continent and the diaspora.	B, C, E	K4, K5
CO 6	demonstrate experience with, and increased confidence in, developing their own analyses of selected works of African literature and use this for developing their own research questions and hypotheses.	E, F, G	K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

WORLD LITERATURE IN TRANSLATION

Course Objectives:

To familiarize the students with different socio-cultural context that produce a narrative.

To make the students understand the significance and nuances of translation.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	get acquainted to the spectrum of world literature.	A, B, C	K1
CO 2	understand that translation facilitates cultural communication.	B, C, E, G	K2, K4
CO 3	analyse various socio-cultural texts.	F	K3, K4
CO 4	undertake an independent research activity.	F, G	K3, K4, K6
CO 5	validate some of the main theoretical and methodological issues involved in reading World Literature.	E, F, G	K5
CO 6	demonstrate mastery in expressing oneself through translation or mutli-lingual writing in a clear, coherent and persuasive manner, and to construct an interpretive argument.	D, G, H	K1, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

LITERATURE AND PANDEMICS

Course Objectives:

To expose the students to understand the plight of humanity during pandemics as portrayed in literary texts.

To initiate the students to various kinds of writing techniques adopted by writers during the Pandemic Period

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	identify and demonstrate the knowledge about contagions.	A, C, D	K1, K2
CO 2	classify the varied socio-cultural conditions related to pandemics.	B, C	K2, K4
CO 3	elucidate the significant impact of the pandemics on society.	E, F	K2, K3
CO 4	examine the major biological crises like the COVID- 19 pandemic.	B, D	K3, K4
CO 5	assess pandemic as a unique narrative device and its role in stimulating a new reading.	E, F, H	K4, K5
CO 6	envision themselves in the societies more equitably in the aftermath of pandemics with the knowledge gained from how the writer adopted the rhetoric of pandemic in different contexts	F, G, H	K3, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 - Create

BRITISH NON-FICTION

Course Objectives:

To enable the students to understand and appreciate the cultural realities from classical period to modern times.

To facilitate the students with empirical forms of knowledge.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	recall the pragmatic works of British Literature.	A, C	K1
CO 2	learn and appreciate the cultural realities of the various periods.	B, C, E	K2, K5
CO 3	develop critical insights to analyse various aspects of non-fiction.	F, G	K3, K4
CO 4	relate the English literary texts to the historical, the social and the political contexts.	A, B, C, D	K1, K4, K5
CO 5	perceive the changing role of English in the new world order.	C, E	K5
CO 6	apply rhetorical strategies and established criteria in an attempt to persuade a reader and to evaluate an oral discourse	G, H	K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

INDIAN ENGLISH LITERATURE- II

Course Objectives:

To enable the students to get an overview of the recent trends and developments in Indian English Literature.

To develop a literary sensibility towards the texts of modern Indian English Literature.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	comprehend the contribution of significant writers of the post-independent era.	A, E	K1, K2
CO 2	identify the unique features of Indian Writings in English.	B, C	K1, K2
CO 3	examine the socio-political and cultural milieu of Indian English Literature after independence.	A, B, C	K3, K5
CO 4	distinguish the use of myths in Indian Writing in English and its contemporary relevance.	C, D, E	K3, K4
CO 5	analyse themes dealt with by modern writers in the post- colonial context.	F, G	K4, K5
CO 6	develop of self-expression through various skills of creative writing by attaining a holistic idea of the distinctive features of Indian Writing in English and their history through the texts and contexts	B, D, G, H	K1, K2 K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 - Create

AMERICAN LITERATURE-II

Course Objectives:

To introduce the texts that discuss the evolving of American experience and character.

To highlight the consciousness of people from varying ethnic and cultural background.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	identify the roles played by gender, race, age, class, ethnicity, wealth, poverty, and geography in creating Contemporary American Literature.	A, C	K1
CO 2	comprehend the relationship between Literature and American history and the philosophical and the religious movements.	A, B, C, D	K2, K4
CO 3	appraise the literary texts to examine the cultural and rhetorical contexts in which they were written.	B, C	K5
CO 4	analyse the strength and limitation of various literary forms practised in America.	F	K3, K4
CO 5	evaluate the relationship between the African American culture and the American culture as a whole	C, D, F	K5
CO 6	effectively express ideas related to the literary works and their own ideas during class, group activities, academic and professional activities.	F, G	K1, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

CANADIAN LITERATURE

Course Objectives:

To make the students familiar with the texts that reflect Canadian culture and society.

To help the students get acquainted with Canadian Literature's richness through representative works of poets, essayists, playwrights, and novelists.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	define the richness of Canadian Literature through the various genres.	A, B, C	K1
CO 2	interpret the cultural and the literary aspects of Canadian Literature.	C, E	K2, K4
CO 3	gauge the concerns at stake in conceiving the arena of Canadian Literature and its trajectories over time.	B, D, E	K4, K5
CO 4	generate thoughtful and critical analyses of the assigned texts.	A, B, F	K3, K4
CO 5	formulate sustained and logical arguments that build on textual evidence and manifest themselves in various genres.	E, F, G	K5, K6
CO 6	articulate original critical analyses with new insights of the assigned texts	F, G	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

SHAKESPEARE

Course Objectives:

To make the students familiar with the significance of the characters, title, plot, theme and style.

To assist the students to appreciate Shakespearean verse and comprehend the magnitude of the Shakespearean World.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	recognise the elements of dramatic devices and techniques of Elizabethan Drama.	A	K1
CO 2	identify Shakespeare's unique dramatic styles and understand the contexts of setting, plot, characterisation, and thematic contents.	B, C, E	K1, K2, K4
CO 3	infer the different features of Shakespearean tragedies, comedies, and historical plays.	B, F	K3
CO 4	analyse Shakespearean theatre and language.	C, F	K4
CO 5	evaluate the Elizabethan views on cosmic universe and liberal humanism	F, G	K5
CO 6	interpret criticism and apply it within logical and coherent academic arguments based on evidence, and engage in critical debates	F, G	K2, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

LITERARY THEORY - I

Course Objectives:

To make the students understand the concepts and nature of theories and their applications.

To enable the students to interpret literary texts by focusing on a theory.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	locate the history of literary criticism and evolution of theory.	A, B	K1, K5
CO 2	interpret the context of the significant ideological shift of western thoughts.	B, E	K2, K4
CO 3	inculcate the habit of close and intensive reading.	E, G	K6
CO 4	analyse the central discourses of Enlightenment.	D, E, F	K3, K4
CO 5	initiate interpretations of literature empirically.	F, G	K4, K5
CO 6	illustrate, from the prescribed works, various features and techniques employed in criticism and apply it to any given text.	F	K3, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

BRITISH FICTION

Course Objectives:

To familiarise the students with the background, the major themes and the literary techniques of the texts.

To make the students comprehend the relationship between the social, the political and the scientific developments of the period and their impact on the literary style.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	appreciate the contextualization and the historical consciousness of the texts.	A, C	K1, K2
CO 2	distinguish the different socio-cultural milieu and the narrative techniques.	B, C	K2, K4
CO 3	familiarise the avant-garde writings by the early novelists.	A, D, E	K1, K2
CO 4	analyse the concepts of modern and postmodern literature.	E, F	K3, K4
CO 5	perceive the distinct literary characteristics of the modern narratives.	C, E, F	K5
CO 6	demonstrate a capacity for a close critical reading of a literary text and broaden their vocabularies and to develop an appreciation of the language.	F, G	K1, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

AUSTRALIAN LITERATURE

Course Objectives:

To familiarize the students with the texts that reflect Australian society and culture.

To acquaint the students with the complexities of Australian colonial and indigenous literature.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	trace the key issues in Australian literature.	A, B	K1, K2
CO 2	understand Australia's varied socio-cultural conditions.	B, C, D	K2
CO 3	appreciate the literary aspects of Australian literature.	D, E, F	K4
CO 4	explore the theoretical positions and analyse complex problems and issues.	D, E, F	K3, K4
CO 5	assess Australia's major literary works and develop literary arguments in a variety of contexts.	D, E, G	K5
CO 6	conduct research to locate secondary critical sources that can inform reading and engagement with Australian literature and present the results of analyses coherently.	F, G	K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

RESEARCH METHODOLOGY

Course Objectives:

To train the students in the use of language, style and discourses suitable for thesis-writing.

To expose the students to a theoretical thrust and hands-on experience in writing research proposals.

Course outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	spell the definition and the process of research.	E, F, G	K1, K2
CO 2	identify a research problem and proceed with it.	A, B, C, F	K1, K2, K4
CO 3	model the literary review based on the critical precepts.	A, B, F	K1, K3
CO 4	trace the consciousness of ethical issues in educational research.	F, G	K3, K4
CO 5	compile a research paper/thesis based on the mechanics of writing	F, G	K5, K6
CO 6	select and define appropriate research problem, organize and conduct research and, write a research report and thesis	A, E, G	K4, K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

ASPECTS OF ENGLISH LANGUAGE - I

Course Objectives:

To facilitate the students to the advanced study of English grammar, focusing on the language history, cultural implications, and linguistics.

To assist the students in grasping the essentials of the structure and systems of language.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	recall the origins and the development of language.	A, C	K1
CO 2	understand the basic principles of linguistic theory.	B, E, F	K2
CO 3	infer the knowledge of fundamental language structures and functions.	F, G	K1, K3
CO 4	designate the place and the manner of articulation of phonemes in the English language and categorise speech sounds into various types.	E, F	K4, K5
CO 5	appraise the various linguistic phenomena that have developed and changed in Modern English.	B, C, E	K5
CO 6	collect, organize and analyse linguistic data from diverse languages, to form hypotheses about language structure/use and to test those hypotheses against new data.	A, F, G	K1, K4, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

LITERARY THEORY - II

Course Objectives:

To assist the students to understand the ideologies of different schools of thoughts and the varied consciousness of the society.

To familiarise the students with the recent trends in literary studies.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	relate the text with a specific epistemological and contextual mode of learning.	A, B	K1, K5
CO 2	identify the contemporary and the historical schools of the literary world.	A, B, C, E	K1, K4
CO 3	predict the ways in which literary theory applies to their own lives and cultures.	C, F	K4, K5
CO 4	deconstruct various literary interpretations of the text and find the relationship between the reader and the work.	B, F	K3, K5
CO 5	validate the significance of race, class, and gender from a theoretical perspective.	F, G	K5
CO 6	demonstrate inductive reasoning that moves logically and persuasively from particular pieces of compelling evidence to broader generalizations that advance/deepen/enrich understanding	C, F, G	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

GREEN LITERATURE

Course Objectives:

To introduce the students to specific literary texts based on the ecological concerns and focus on the need to address the rising global threats.

To express care and concern for the environment and advocate a more thoughtful and ecologically sensitive relationship between man and nature

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	tabulate the indomitable part of nature in life.	A, D	K1
CO 2	exemplify the most relevant critical theories through literary texts.	B, C, F	K2, K3
CO 3	elucidate the role of literature in addressing contemporary issues such as environmental concerns.	E, F	K3, K4
CO 4	examine the social issues from the eco-critical perspective.	D, E, F	K4, K5
CO 5	prioritise ethical, cross-cultural and historical context of the environmental issues.	C, D, E	K5
CO 6	study literature and environment from an interdisciplinary point of view to analyse and brainstorm possible solutions for promoting or hampering sustainable practices crucial for environmental conservation	F, G	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

NATIONAL LITERATURE IN TRANSLATION

Objectives:

To help the students learn the texts written in different languages in India and understand their distinct socio-history and cultural identities.

To familiarise the students with the different regional literary movements of India.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	relate the thematic concerns in the regional literatures of India.	A, B, C	K1, K2
CO 2	illustrate regional consciousness in their reading of literary texts.	B, C	K2
CO 3	distinguish the socio-cultural movements that formulated the regional literature.	B, C, D	K3, K4
CO 4	categorise the regional literatures translated in English.	E, F, H	K3, K4
CO5	validate the historical, the social, and the cultural crises specific to the region.	B, C, D	K5
CO 6	Perform comparative study of the original and the translated texts to see the process of negotiation that constructs, and is constructed in, the English language translation	F, G, H	K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

GENDER STUDIES

Objectives:

To familiarize the students with the notions of biological differences, epistemologies and histories related to power structure.

To offer an interdisciplinary explanation of gender and sensitise the students about the problems of women and their reactionary responses in their writings.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	retrieve the ability to conduct an interdisciplinary analysis of gender studies.	A, C	K1, K4
CO 2	restate the position of gender on the lives of the individuals.	B, D	K1, K2, K4
CO 3	outline a body of knowledge about the social construction of sex and gender.	C, D, E	K2, K3
CO 4	analyse socio-historical and contemporary power dynamics underpinning group relations, social institutions, and systems of representation	C, F, G	K3, K4
CO 5	perceive feminism in its diverse cultural contexts.	F	K5
CO 6	apply theoretical frameworks of feminism, gender and women's studies, queer studies, sexuality studies.	F, G	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

ASIA – PACIFIC LITERATURE

Course Objectives:

To help the students explore some aspects of the social and literary environments that have shaped the production and interpretation of literary texts in both historical and contemporary Asia-Pacific cultures.

To help the students identify issues related to the intersection of gender, caste, class, language, religion and politics in the Asia-Pacific province.

Course Outcomes:

C.O. No	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	recognise distinguishing characteristics of the various Asia- Pacific literature and relate the writings to their historical, cultural, and political contexts.	A, C	K1
CO 2	trace the various narrative techniques, folktales, stories, parables, proverbs, and other old-world literary material incorporated into literature of the Asia-Pacific region	A, B, D, F	K2
CO 3	extend the knowledge to review the global concerns with regional sensitivity, (re)imagining “modernity” through literary plots about the exchanges between Asia and the Pacific Islands	B, D, E	K2, K3
CO 4	relate cultural and social values of various societies with linguistic differences and analyse how culturally based assumptions influence perceptions and behaviours in the writings.	C, E, F	K3, K4
CO 5	validate the cultural discourse from the representative literary texts and make critical use of concepts and analytic tools from literary studies to develop, review, analyse and synthesise knowledge about Asia and the Pacific region.	C, D, F	K4, K5
CO 6	Make reflections on one’s work or competencies to connect course content and lived experience.	C, F, G	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

ASPECTS OF ENGLISH LANGUAGE - II

Course Objectives:

To enable the students to acquire the knowledge of the structural descriptions of the language.

To equip the students with the formative principles of the linguistic analysis of the different domains of language.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	identify various grammatical processes.	B	K1
CO 2	understand the distinguishing features of written and spoken language in the texts.	A, B, E	K2
CO 3	classify the grammatical structures and their role in linguistic analysis	E, F, G	K2, K3
CO 4	distinguish the concepts of word meaning and sentence meaning; sense and reference.	C, F, G	K4, K5
CO 5	validate the knowledge and understanding of the English language and its use in various contexts.	F, G	K4, K5
CO 6	engage in research by tracing the characteristics of the language as well as in employing the scope of linguistics into understanding the specific characteristics of literature, including prose and poems in different languages	E, F, G	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 - Create

CONTENT WRITING

Course Objectives:

To inculcate the knowledge of documenting sources.

To develop internet skills for writing in the social media.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	record the knowledge of digital skills essential for the media.	E, G, H	K1
CO 2	outline an idea on content marketing.	G, H	K2
CO 2	compute practical skills on earning through content writing.	E, G, H	K2, K6
CO 4	analyse and present a topic of study in a field-specific language.	F, G, H	K4, K5
CO 5	standardise teamwork skills.	G, H	K3
CO 6	demonstrate knowledge of editing and revision techniques, the world of publishing, and other career-related aspects of writing.	F, H	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

TRANSLATION: THEORY AND PRACTICE

Course Objectives:

To encourage the students to recognise various problems and challenges faced by the translators concerning literary texts.

To equip the students with various procedures and techniques of translation.

Course Outcomes:

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	recall the various theories of translation and their importance in the contemporary world.	F, H	K1
CO 2	extend the skill to translate and engage in advanced study in the field of translation.	B, H	K2, K3
CO 3	apply various methods of interpretation related to Translation Studies.	C, F, H	K3
CO 4	assess the multi-cultural approaches and navigate the linguistic problems in translation.	C, D, F, H	K4, K5
CO 5	perceive the difficulties in translation at a practical level and evaluate alternative strategies for dealing with them.	F, G, H	K4, K5
CO 6	choose between different models of translation on the basis of their relative merits and demerits.	F, H	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

PROJECT

Course Objectives:

To enable the students to defend, to challenge and to question an issue from a specific perspective

To assist the students to engage in persuasive standpoints and to argue in a detailed empirical manner and to hypothesize and to make conclusions.

C.O. No.	Upon the completion of this course, students will be able to	PSOs Addressed	Cognitive Level
CO 1	tabulate the sources and the documents effectively.	A, B, C	K1
CO 2	relate several articles to form an original opinion on a topic.	B, F	K2, K5
CO 3	connect several articles and form thesis statements from their critical reading.	B, C, F	K4, K5
CO 4	plan and write a more advanced and argumentative paper.	F, G	K3, K5, K4
CO 5	deduct Plagiarism and devise the ways to prevent it.	F, G	K4, K5
CO 6	apply various aspects of the research process, framing useful research questions, identify research gaps, research design, data collection, analysis, writing and presentation.	G	K5, K6

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 - Create

M.SC., MATHEMATICS

Programme Outcome

The M.Sc. Mathematics programme will enable the students to

PO1	Knowledge	Capable of demonstrating comprehensive disciplinary knowledge gained during course of study
PO2	Research Aptitude	Capability to ask relevant/appropriate questions for identifying, formulating and analyzing the research problems. and to draw conclusions from the analysis.
PO3	Communication	Ability to communicate effectively on general and scientific topics with the scientific community and with the society at large
PO4	Problem Solving	Capability of applying knowledge to solve scientific and other problems
PO5	Individual and Team Work	Capable to learn and work effectively as an individual, and as a member or leader in diverse teams, in multidisciplinary settings.
PO6	Investigation of Problems	Ability of critical thinking, analytical reasoning and research based knowledge including design of experiments, analysis and interpretation of data to provide conclusions.
PO7	Modern Tool usage	Ability to use and learn techniques, skills and modern tools for scientific practices.
PO8	Science and Society	Ability to apply reasoning to assess the different issues related to society and the consequent responsibilities relevant to the professional scientific practices
PO9	Life-Long Learning	Aptitude to apply knowledge and skills that are necessary for participating in learning activities throughout life
PO10	Project Management	Ability to demonstrate knowledge and understanding of the scientific principles and apply these to manage projects

PROGRAM SPECIFIC OUTCOMES (PSOS)

After successful completion of the programme, a student will be able to:

PSO1	Have deep understanding and knowledge in the core areas of Mathematics.
PSO2	Demonstrate understanding and application of concepts/ theories/ principles/ methods/ techniques in different areas of pure and applied Mathematics.
PSO3	Have capability to read and understand mathematical texts.
PSO4	Demonstrate and communicate mathematical knowledge effectively and unambiguously through oral and/or written expressions.
PSO5	Attain skills of computing /programming /using software tools /formulating models.
PSO6	Attain abilities of critical thinking, logical reasoning, investigating problems, analysis and problem solving.
PSO7	Application of mathematical methods/ techniques, disciplinary knowledge so as to develop skills to solve mathematical problems in other disciplines and/ or in the real world.
PSO8	Development of intellectual capabilities to get into further research in the discipline.
PSO9	Have strong foundation in basic and applied aspects of Mathematics so as to venture into jobs in scientific and various industrial sectors and/or teaching career in Mathematics.
PSO10	Development of strong oral and written communication skills promoting the ability to present ideas and also promote team work spirit.

ALGEBRA - I

Course Objective :

To inculcate the ideologies of Algebra.

Course Outcomes (COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Demonstrate competence with the basic ideas of algebra including the concepts of counting principle and Homomorphisms	K-2
CO 2	Understand the concept of Cayley's theorem and about Solvable group	K-3
CO 3	Able to demonstrate about the permutations and Accounting principle	K-3
CO 4	Appreciate the significance of Sylow's theorem and Galois theory	K-4
CO 5	Acquire the knowledge of direct products, finitely generated abelian groups	K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

ANALYSIS - I

Course Objective :

To identify compact sets, connected sets, continuity of functions and derivatives of functions.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Understand the need of metric spaces, compact sets and connected sets.	K-2
CO 2	Able to recognize the convergence of sequence of functions.	K-4
CO 3	Analyze the root test, ratio test, power series, absolute convergence and algebra of series.	K-4
CO 4	Interpret knowledge about the concept of limits and continuity of functions.	K-2
CO 5	Able to know another equally important main ideas namely differentiation and make use of the study of velocity and acceleration of continuous paths.	K-2, K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ANALYTIC NUMBER THEORY

Course Objective :

To Analyse Arithmetic, multiplicative and Chebyshev's functions

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Study the basic concepts of elementary number theory	K-2
CO 2	Explain several arithmetical functions and construct their relationships	K-2, K-3
CO 3	Apply algebraic structure in arithmetical functions	K-3
CO 4	Demonstrate various identities satisfied by arithmetical functions	K-3
CO 5	Determine the application to $\mu(n)$ & $\Lambda(n)$ and several equivalent form of prime number theorem	K-5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

OPERATIONS RESEARCH

Course Objectives:

To distinguish Transportation models with Inventory theory and Queueing Theory.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Be able to build and solve Transportation and Assignment problems using appropriate method	K-2
CO 2	Learn the constructions of network and optimal scheduling using CPM and PERT	K-3
CO 3	Ability to construct linear integer programming models and solve linear integer programming models using branch and bound method	K-3
CO 4	Understand the need of inventory management.	K-3
CO 5	To understand basic characteristic features of a queuing system and acquire skills in analyzing queuing models	K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ORDINARY DIFFERENTIAL EQUATIONS

Course Objective :

To evaluate solutions of homogeneous equations, Legendre polynomials and Bessel function.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Develop ways of finding explicit solutions of second order linear equations and understand the nature and properties.	K-2, K-3
CO 2	Recall an algebraic function and create attention to the general homogeneous second order linear equation.	K-3
CO 3	Confront the theoretical side of the problem, adapt to the technical task of defining the Legendre polynomial and build their special properties.	K-3
CO 4	Make use of many important applications of Legendre polynomials to mathematical physics. Define the more important Bessel functions and prove some of their simpler properties.	K-3,K-5
CO 5	Specialize the linear system	K-4, K-5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ALGEBRA - II

Course Objective :

To recognise Ring homomorphism, Ideals, Radicals and Direct sum of rings.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Demonstrate competence with the basic ideas of algebra including the concepts of ideals and quotient Rings.	K-2
CO 2	Understand the concept of the Particular Euclidean ring.	K-3
CO 3	Able to demonstrate about the Polynomial rings over Commutative rings.	K-3
CO 4	Appreciate the significance Radicals	K-3
CO 5	Acquired the knowledge of direct sum of rings	K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ANALYSIS - II

Course Objective :

To describe Integrals of functions, Uniform convergence, Power series and Fourier series.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Construct the integration of real valued functions on intervals.	K-2, K-3
CO 2	Explain the integration of vector valued functions and make use of geometric interest with application.	K-2, K-3
CO 3	Explain a new mode of convergence, pointwise convergence with integration , equicontinuous function and pointwise bounded sequence.	K-3
CO 4	Developing properties of polynomials and deriving properties of function represented by power series.	K-3
CO 5	Explain the algebraic completeness of the complex field, its generalization and its conclusion.	K-2, K-4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ADVANCED CALCULUS

Course Objective :

To identify Definite integrals, Differentiation, inverse transformation and transformation of multiple integrals

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Understand the difference between a multiple integral and an iterated integrals and move from one to the other	K-2, , K-3
CO 2	Organise with functions whose range of values will be points in m space, for some specific choice of m such as 2 or 3.	K-3
CO 3	Use linear and affine transformation as local approximations to a general transformation.	K-4
CO 4	Deviate from the older traditional approach and adopt one which is of greater significance of applications in analysis.	K-3,K-4
CO 5	Show how to translate between the language and notation of the system of differential forms and that of vector analysis.	K-3, K-4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

DIFFERENTIAL GEOMETRY

Course Objective :

To build the concept of a surface and analyse the properties of surface

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Interpret the geometric character of curves in Space (\mathbf{R}^3)	K-2
CO 2	Explain the nth order of a curve and a surface, Develop the plane of curvature at a point of the surface	K-2,K-3
CO 3	Build the concept of a surface and fundamental forms	K-3
CO 4	Explain the intrinsic and non intrinsic properties of a surface	K-3
CO 5	Analyse the properties of a surface relative to the Euclidean space in which it is embedded	K-4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

RESEARCH METHODOLOGY AND STATISTICS

Course Objective :

To explain different components of a Research Project, Multivariate functions and various distributions.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Discuss the information of the sections in a dissertation or thesis	K-6
CO 2	Discuss the distributions of two random variables, conditional Distributions and expectations, independent random variables and its generalizations	K-6
CO 3	Build the Gamma and Chi-Square Distributions and Normal Distributions	K-3
CO 4	Classify the distributions of Functions of Random Variables and define three additional distributions of statistical inference	K-3, K-4
CO 5	Build an alternative procedure around the concept of the moment generating - function of a distribution and establish the central limit theorem	K-3,K-4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

CLASSICAL MECHANICS

Course Objective :

To illustrate Mechanics of a system of particle, Hamilton principle and Kepler problem

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Distinguish between the external force acting on the particles due to sources outside the system and internal forces on all other particles in the system.	K-2, K-3
CO 2	Work with many vector forces and accelerations and deal with two scalar functions.	K-3
CO 3	Emphasize that configuration space has no necessary connection with the physical three-dimensional space. extend Hamilton's principle to cover certain types of nonholonomic systems.	K-4
CO 4	Discuss the problems of two bodies moving under the influence of a mutual central force as an application of the Lagrangian formulation.	K-3
CO 5	Solve the orbital equation for motion in a central inverse-square force law in a fairly straightforward manner with results that can be stated in simple closed expressions.	K-4, K-5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

PARTIAL DIFFERENTIAL EQUATIONS

Course Objective :

To analyse various methods of solutions of Partial differential equation, Cauchy's Method and Separation of variables

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Find the fundamental difference between Pfaffian differential equations in two variables and those in a higher number of variables.	K-3, K-4
CO 2	Find the general solution of a linear partial differential equation and indicate how such a general solution may be used to determine the integral surface which passesthrough a given curve.	K-4, K-5
CO 3	Able to solve the nonlinear partial differential equation.	K-5
CO 4	Able to solve linear partial differential equations of the second order.	K-5
CO 5	Able to extend the characteristic curves of a second - order linear differential equation in two independent variables to the case where there are n independent variables.	K-3, K-4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

PYTHON PROGRAMMING

Course Objective :

To demonstrate Problem Solving Techniques, Algorithmic Problem Solving, Python introduction and Python functions.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Give mathematical model for real world problems	K-1, K-2
CO 2	Design algorithms for mathematical models, analyse the efficiency and correctness of algorithms.	K-4
CO 3	Design implementable programs in Python.	K-5
CO 4	Define and demonstrate the use of functions and looping using Python.	K-3
CO 5	Design and implement a program to solve a real-world problem.	K-5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ADVANCED ALGEBRA - I

Course Objective :

To paraphrase vector space, Jordan form, Matrices and Transformations

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Construct the process to develop the fundamental notations of linear dependence, basis and dimensions.	K-3
CO 2	Develop the concepts about linear transformation and matrix theory	K-3
CO 3	Discover the existence of linear transformation in similarities	K-4
CO 4	Identify the theorems about linear transformations, canonical form of matrices and fundamental properties of matrices	K-3
CO 5	Classify the behaviour of Hermitian, Unitary and Normal transformations.	K-4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

GRAPH THEORY

Course Objective :

To illustrate Graphs with trees, Euler tour, Hamilton cycles and vertex and edge colouring.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Demonstrate the concept of different structures and types about graphs and explain its applications	K-2,K-3
CO 2	Determine the properties of trees and applications in network and study the concepts of connections in graphs	K-2,K-3
CO 3	Acquire the knowledge about Euler Tours, Hamilton Cycles and matchings in Graphs	K-3
CO 4	Analyze the concept of edge coloring ,independent sets and cliques in Graphs	K-4
CO 5	Explain the concept of vertex colorings	K-5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

MEASURE AND INTEGRATION

Course Objective :

To analyse Lebesgue Measure, Lebesgue outer measure, Lebesgue integrals and Signed Measures

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Establish the basics for Lebesgue measurable functions and the Lebesgue integral. characterise on inner approximation by closed sets and on outer approximation by open sets.	K-4
CO 2	Establish results regarding the approximation of measurable functions by simple functions and by continuous functions.	K-4, K-5
CO 3	Exhibit a uniform bounded sequence of Riemann integrable functions on a closed, bounded interval can converge pointwise to a function that is not Riemann integrable.	K-4
CO 4	Provide a characterization of the class of functions on closed, bounded intervals that may be expressed as the difference of increasing functions.	K-3, K-4
CO 5	Abstract the most important properties of Lebesgue measure on the real line in the absence of any Topology.	K-3, K-5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

TOPOLOGY – I

Course Objective :

To relate Topology with various kinds such as Product topology , Metric topology and to learn compactness and limit points, local compactness.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Demonstrate an understanding of the concepts of topological spaces, construct topologies on a set. Understand the natural generalization of open and closed sets, limit points for the real line and Euclidean space onto the Topological Spaces.	K-2
CO 2	Extend the concept of continuity and various properties of continuous functions; and define a topology on the cartesian products of topological spaces.	K-3
CO 3	Define the metric topology using a metric on the set, give examples for metric topology and prove the properties of any metric topology.	K-4
CO 4	Acquire knowledge of the concepts of separation, connectedness, covering and open covering of a topological space and compactness for a topological space.	K-4
CO 5	Appreciate the importance of a weaker form of compactness called Limit point compactness, local compactness and one-point compactification and identify spaces where Limit point compactness coincides with compactness.	K-5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ALGEBRAIC NUMBER THEORY

Course Objective :

To appreciate the significance of approximating irrational numbers, acquired the knowledge of Unique factorizations

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Demonstrate competence with the basic ideas of Diophantine and other linear equations.	K-2
CO 2	Solve some special equations of the type $x^4+y^4=z^2$	K-3
CO 3	Able to demonstrate about infinite continued functions	K-3
CO 4	Appreciate the significance of approximating irrational numbers	K-3
CO 5	Acquired the knowledge of Unique factorizations	K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

CALCULUS OF VARIATIONS AND INTEGRAL EQUATIONS

Course Objective :

To identify Constraints, Linear Equations and various theorems.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Demonstrate competence with the basic ideas Maxima and Minima	K-2
CO 2	Explain about Constraints and Lagrange's Multipliers Hamilton's principles-Lagrange equations	K-3
CO 3	Demonstrate Relation between differential and integral equations	K-3
CO 4	Appreciate the significance of Fredholm equations with separable kernels	K-3
CO 5	Acquired the knowledge of Iterative methods for solving equations of second kind	K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

PYTHON PROGRAMMING – PRACTICALS

Course Objective :

To evaluate GCD of numbers, various sorts, search and to generate an adjacency matrix.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Write programs using advanced concepts of Python.	K-3
CO 2	Write, Test and Debug Python Programs.	K-4
CO 3	Implement Conditionals and Loops for Python Programs.	K-5
CO 4	Use functions and represent Compound data using Lists, Tuples and Dictionaries.	K-4
CO 5	Read, write and manipulate data from & to files in Python.	K-5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

ADVANCED ALGEBRA - II

Course Objective :

To construct extension fields, Finite fields and to learn Four-square theorem

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Build the knowledge with the relation of one field to another	K-3
CO 2	Develop the construction of an extension field K of F in which the polynomial $f(x) \in F[x]$ have all its roots and study the nature of roots of $f(x)$	K-3
CO 3	Study the relationship between the roots of a polynomial with its Galois Group and examine it	K-2, K-4
CO 4	Determine the nature of fields having only a finite number of elements	K-5
CO 5	Understand the classification of all division rings R in their centre and satisfy the condition. Also study the Left Division Algorithm and Lagrange's Theorem	K-2, K-4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

COMPLEX ANALYSIS

Course Objective :

To learn Analytic functions, Line integral and Residue theorem.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Extend Calculus to Complex domain.	K-4
CO 2	Develop the fundamentals of point set Topology and Metric Space.	K-4
CO 3	Distinguish between definite and indefinite integrals. familiar with the theory of definite integrals of real continuous functions.	K-5
CO 4	Able to study the local properties of an analytic function in great detail.	K-4, K-5
CO 5	Classify the isolated singularities of analytic functions.	K-4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

FUNCTIONAL ANALYSIS

Course Objective :

To describe Banach Space, Hilbert space and various operators

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Make use of the uniform boundedness theorem in the conjugate of an operator on a Banach Space.	K-2, K-3
CO 2	Able to determine the natural imbedding of N in N^{**}	K-5
CO 3	Examine the properties of the mapping from the operator on a normed linear space to its conjugate. understand the importance of operators such as self adjoint and normal operators.	K-3, K-4
CO 4	Able to focus on fixed but arbitrary Hilbert space.	K-2, K-3
CO 5	Analogy between the set of all operators on Hilbert space and the set of all complex numbers.	K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

TOPOLOGY - II

Course Objective :

To distinguish Separation, countability axioms and to learn various lemmas.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Demonstrate understanding of the concepts of countable, First countable space, Second countable space, Lindelof space, Separable space and Regular space.	K-2
CO 2	Appreciate the concepts of normal space and derive normality from other spaces, and understand the Urysohn Lemma and completely regular definition.	K-2, K-4
CO 3	Prove the Urysohn metrization theorem, Imbedding theorem, Tietze extension theorem and explain the relation between Tietze extension theorem and Urysohn Lemma.	K-4
CO 4	Prove elementary properties of locally finite collection and metrizable spaces, with understanding of Maximality with respect to the finite intersection property and the Tychonoff theorem.	K-4
CO 5	Explain Baire spaces, complete metric space, compact Hausdorff spaces and the relation between these spaces. Apply theoretical concepts in topology to understand some applications.	K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

PROJECT

Course Objective :

To enrich the research interest and to create innovative ideas.

Course Outcomes(COs)

On successful completion of the course, the students will be able to

Course outcome		Cognitive Level
CO 1	Differentiate primary and secondary data and questionnaire	K-2
CO 2	Explain about research methodology	K-3
CO 3	Read articles and write a new article.	K-3
CO 4	Know about the bibliography	K-3
CO 5	Know how to write dissertations and present a paper in conferences.	K-3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

4 M. SC CHEMISTRY

PROGRAMME OUTCOMES (POs):

On successful completion of the Programme, students will be able to

PO1: Function as responsible individuals with ethical values, accountable to the community.

PO2: Gain detailed knowledge of the major areas of chemistry including a wide range of factual information and experimentally observed phenomena.

PO3: Apply chemical concepts in new situations and computational software in chemistry efficiently.

PO4: Think critically and analyze chemical problems.

PO5: Work effectively and safely in a laboratory environment.

PO6: Present scientific and technical information resulting from laboratory experimentation by means of oral presentation, scientific poster or a written report.

PO7: Pursue higher education / employable/ entrepreneur.

PO8: Work in teams as well as independently in academia, industry or government.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

Upon successful completion of M.Sc. Chemistry programme, graduates will be able to

PSO1: Apply advanced concepts of organic, analytical, physical and inorganic chemistry to solve complex problems to improve human life.

PSO2: Possess skill in spectral, analytical, qualitative and quantitative techniques which will be useful in industry.

PSO3: Gain knowledge in recent and advanced developments in the area of Green Chemistry, Chemistry of Industrial products and formulation, Forensic Chemistry, Industrial Processes, Catalysis, Nanoscience and Nanotechnology, Medicinal Chemistry, Natural Products Chemistry, Bioinorganic Chemistry, Computational Chemistry, Contrasting agents in medical Diagnosis, Sensors etc.

PSO4: Design a synthetic route for new compounds and transform innovative ideas into reality.

PSO5: Be competent in problem solving, critical thinking and analytical reasoning as applied to scientific problems.

PSO6: Acquire understanding of Plagiarism and Intellectual Property Rights.

PSO7: Use Computational software in chemistry efficiently.

PSO8: Carry out research / investigation independently to solve practical problems and write / present a substantial technical report/document.

PSO9: Transform learned knowledge and skills to qualify in the NET and other competitive exams for higher studies and job.

AROMATICITY AND ORGANIC REACTION MECHANISM

Course Objectives:

- To understand the concept of aromaticity, Novel ring systems and organic reaction mechanism determination.
- To study about reactive intermediates involved in organic reactions.
- To understand Aliphatic and Aromatic Nucleophilic substitution reaction, Elimination and Addition reaction mechanisms.

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Analyze and predict the aromaticity of compounds and the nomenclature of bicyclic and tricyclic systems.	K4, K3, K2
CO2	Develop skills for identifying the kinetics of reactions.	K2, K5
CO3	Demonstrate the generation, stability, and reactivity of carbenes, nitrenes and free radicals.	K2
CO4	Explain and analyze the mechanism of substitution, elimination and addition reactions in aliphatic systems.	K2, K4
CO5	Infer the major types of nucleophilic substitution reactions on aromatics with their specific reactivity.	K2

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

FUNDAMENTALS OF INORGANIC CHEMISTRY, NUCLEAR CHEMISTRY AND INORGANIC POLYMERS

Course Objectives:

- To understand different type of bonds and to study different theories of bonding.
- To understand the acid-base concept, reactions in non-aqueous medium and to study applications of redox potential in inorganic systems.
- To introduce nuclear chemistry and to study the applications of radio isotopes.
- To understand structures and bonding in inorganic polymers and metal clusters.

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Recall the basic concepts of atomic structure, periodic table, periodic properties and chemical bonding of elements.	K1
CO2	Explain poly acids, cage compounds and Inorganic polymers.	K2
CO3	Apply the concept of hybridization to identify the structure of molecules by VBT, MOT and VSEPR theory.	K3
CO4	Distinguish hard and soft acids and bases and explain their relative strengths.	K4
CO5	Explain various nuclear reactions and the analytical applications of radio isotopes.	K2 , K3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

QUANTUM MECHANICS AND SPECTROSCOPY – I

Course Objectives:

- To have a good foundation in understanding the physical and mathematical aspects of quantum mechanics that leads to classical thermodynamics.
- To become familiar with the required mathematics for solving quantum mechanical problems.
- To understand and appreciate the quantum mechanical approach to the atomic and molecular electronic structure.
- To know quantization of energy and the interaction of electromagnetic radiation with matter.
- To learn the fundamentals of molecular spectroscopy.
- To know the application of spectroscopy to study the structure of molecules.

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the mathematical and physical aspects of quantum mechanics which illustrates the relationship between mathematics and fundamental of quantum mechanics.	K2
CO2	Solve quantum mechanical problems.	K3
CO3	Analyze the quantum mechanical aspects in various areas of applications in chemistry.	K4
CO4	Explain the basic idea of quantization of energy and spectroscopy and apply to the rotational spectra of diatomic molecules.	K2, K3
CO5	Explain the basic principles of vibrational spectra of diatomic molecules including both IR and Raman spectra.	K2

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

GREEN CHEMISTRY – TECHNIQUES AND APPLICATIONS

Course Objectives:

- *To understand the basic principles of Green chemistry and Green techniques.*
- *To study Green catalysis and Green solvents.*
- *To learn Renewable energy sources, their working principle and applications.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the basic principles of green chemistry, alternative energy sources and green metrics.	K2
CO2	Apply the green catalysis in chemical reactions.	K3
CO3	Identify the role of important green solvents in organic reactions.	K5
CO4	Illustrate name reactions and analyze the various green reactions using microwave techniques.	K2, K4
CO5	Explain the principles of renewable energy resources and generate its importance to the environment.	K2, K6

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

CHEMISTRY OF INDUSTRIAL PRODUCTS AND FORMULATION

Course Objectives:

- *To study paint formulations, various cosmetics and manufacture and refining of pulp.*
- *To learn milk processing, milk products and textile fibres.*

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Acquire knowledge of paints and pigments and investigate its drying mechanism.	K2
CO2	Apply and formulate the role of cosmetics in industries.	K3, K6
CO3	Identify the fibre for paper making and evaluate its properties.	K5
CO4	Apply processing operations of milk and milk products in day to day life.	K3
CO5	Explain types of textile fibres and analyze its characters by various treatments	K2, K4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

FORENSIC CHEMISTRY

Course Objectives:

- *To understand the importance of Forensic science, GPS, Finger printing and Forensic serology.*
- *To learn the role of chemistry in Forensic science, toxicology and DNA finger printing.*
- *To understand the concept of Cyber technology.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Acquire knowledge on forensic science and apply through biometric and finger printing technique.	K2, K3
CO2	Interpret the different methods of finger printing and characterization of blood stains.	K5
CO3	Analyze the selected drugs, inks and paints using different techniques.	K4
CO4	Identify the samples using forensic toxicology methods and DNA finger printing.	K3
CO5	Explain the proper applications of computer network in forensic science to investigate the crimes.	K2, K6

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ORGANIC CHEMISTRY PRACTICAL - I

Course Objectives:

- *To introduce the students to have hands on experience to perform various reactions.*
- *The students can Separate and characterize the two component mixtures.*

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the basic separation procedures of organic mixtures.	K2
CO2	Select the separation methods to separate the organic mixtures.	K3
CO3	Classify the functional groups using systematic procedure.	K4
CO4	Determine the physical properties of organic compounds	K5
CO5	Develop skills to isolate natural products from plants.	K3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

INORGANIC CHEMISTRY PRACTICAL - I

Course Objectives:

- *To learn the principles and methods of qualitative analysis of familiar and less familiar cations present in a mixture.*
- *To identify the methodology to analyze qualitatively a metal ion in the presence of another metal ion.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Recall the procedure for the identification of more familiar metal ions.	K1
CO2	Explain the principles and techniques and have skills of qualitative analysis of familiar and less familiar cations in a mixture.	K2, K3
CO3	Analyze a metal ion in the presence of another metal ion.	K4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

PHYSICAL CHEMISTRY PRACTICAL - I

Course Objectives:

- *To learn the Principles of Conductometric Titrations.*
- *To understand the Principles of Thermometry.*

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the principles of conductometric titrations and estimate the strength of solutions.	K2, K5
CO2	Explain the basic principles of thermometry and determine the heat of solution as well as the amount of solute present in the solution.	K2, K5
CO3	Determine the solubility product of sparingly soluble salts using conductometric technique.	K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

STEREOCHEMISTRY, ORGANIC REAGENTS AND PHOTOCHEMISTRY

Course Objectives:

- To understand the concept of Stereochemistry and conformation of organic molecules.
- To study synthetic utility of important organic reagents.
- To understand Photochemistry and Pericyclic reactions

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Recognize three dimensional structures of any organic molecule with orientation of atoms or groups.	K3
CO2	Analyze the conformation and the reactivity of acyclic and six-membered cyclic compounds.	K4
CO3	Develop the skill to choose the appropriate reagents for organic reactions.	K3
CO4	Illustrate the fundamental concepts of photochemistry and its application in organic reactions	K2
CO5	Explain the core concepts of Pericyclic reactions and its mechanisms in organic substrates and to predict whether the chemical reaction is thermal or photochemical.	K2, K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

COORDINATION COMPOUNDS AND SOLID STATE CHEMISTRY

Course Objectives:

- *To know the nature of metal-ligand bond and to study various theories of bonding in coordination compounds.*
- *To study the stability, chemical reactions and magnetic properties of coordination compounds.*
- *To study the crystal structures, defects in solid crystals, band theory of solids and super conductors.*

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Recall the basic terms in coordination chemistry, Applications and limitations of CFT.	K1
CO2	Explain the stability and reactions of various coordination complexes.	K2
CO3	Compare the magnetic properties of Octahedral, Tetrahedral and Square planar coordination complexes.	K4
CO4	Classify the types of defects in solids and apply this knowledge to identify the type of defect present in compounds.	K2 , K3
CO5	Distinguish metals, semiconductors and insulators and explain the properties and applications of semiconductors.	K4 , K2

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ELECTROCHEMISTRY AND SPECTROSCOPY - II

Course Objectives:

- *To understand the concepts of Electrochemistry.*
- *To analyze the applications of Electrochemistry.*
- *To know quantization of energy and the interaction of electromagnetic radiation with matter.*
- *To learn the fundamentals of molecular spectroscopy.*
- *To know the application of spectroscopy to study the structure of molecules.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the concepts of electrochemistry and basic ideas of electrochemical processes.	K2
CO2	Analyze the applications of electrochemistry such as batteries and fuel cells.	K4, K3
CO3	Illustrate the electroanalytical techniques such as Polarography, Differential pulse polarography, Stripping voltammetry. Cyclic voltammetry, etc.	K2
CO4	Explain the basic principles of nuclear magnetic resonance (NMR) and Electron paramagnetic resonance (EPR) spectroscopy techniques.	K2
CO5	Illustrate the principles of Nuclear quadrupole resonance and Mössbauer spectroscopy techniques and Mass spectrometry.	K2

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

NANOSCIENCE AND NANOTECHNOLOGY

Course Objectives:

- *To study structure, properties and synthetic methods of nanomaterials.*
- *To understand nano composites and carbon nanostructures.*
- *To learn nano medicines, nano robots and dendrimers.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the unique properties and structure of nanomaterials.	K2
CO2	Trace the different methods of synthesis of nanomaterials.	K2
CO3	Acquire knowledge about polymer based nanocomposites and applications of bio-nanocomposites.	K2, K3
CO4	Evaluate the synthesis and potential applications of carbon nanotubes and grapheme.	K5
CO5	Apply nanotechnology in bio-medical field.	K3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

MEDICINAL CHEMISTRY

Course Objectives:

- *To introduce the mechanism of drug action, drug delivery systems and molecular docking.*
- *To learn drug design and drug synthesis.*
- *To learn various types of drugs and their mode of action*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Categorize the drug delivery system and gain knowledge on molecular docking.	K4, K2
CO2	Acquire knowledge about structure activity relationship of drugs.	K2
CO3	Explain the structure and functions of antiseptics, antibiotics and differentiate bacterial and fungal cell walls.	K2, K4
CO4	Illustrate the synthesis and mode of actions of some important drugs.	K2
CO5	Create certain developments in cancer chemotherapy and cardiovascular drugs.	K6

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

INDUSTRIAL PROCESSES AND CATALYSIS

Course Objectives:

- *To learn unit operations and reverse osmosis in industrial plants.*
- *To study catalyst and homogeneous and heterogeneous catalysis in industries.*
- *To understand the environmental impact of chemical industries.*

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Acquire knowledge on unit operations and unit process in industry.	K2
CO2	Explain reverse osmosis and how to apply it in the pretreatment of water.	K2, K3
CO3	Distinguish homogeneous and heterogeneous catalysis and analyze the advantages of heterogeneous catalysis in industry.	K4
CO4	Evaluate the role of catalysis in petrochemical industry.	K5
CO5	Save the environment from hazardous industrial chemical waste.	K6

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ORGANIC CHEMISTRY PRACTICAL - II

Course Objectives:

- *To enable the students to develop analytical skill in organic quantitative analysis.*
- *To understand the techniques involved in the preparation of standard solutions, standardization and calculations in the estimations of compounds.*
- *To develop preparative skills in organic preparations*

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Develop the skills to estimate organic compounds	K3
CO2	Estimate the amount of organic compound using quantitative organic estimation methods	K5
CO3	Illustrate various organic reactions and their utility in organic preparations.	K2, K3
CO4	Acquire the skills to isolate useful compounds from natural sources	K3
CO5	Determine the physical properties of organic compounds	K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

INORGANIC CHEMISTRY PRACTICAL - II

Course Objectives:

- *To understand the principles and various analytical methods of quantitative analysis of cations present in a mixture.*
- *To improve the skill in quantitative estimation of metal ions by complexometric titration.*
- *To understand the preparation and analysis of coordination complexes.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Describe the principles, techniques and skills related to quantitative determination of ions in a mixture by complexometric titration.	K2
CO2	Estimate one metal ion in presence of another metal ion by complexometric method.	K5
CO3	Estimate the amounts of components present in Solder alloy.	K4, K5
CO4	Prepare and analyze the Inorganic complexes and estimate them by volumetric methods.	K6,K4, K5
CO5	Describe the basic principle of calorimetry and apply it for the estimation of ions present in solution.	K2,K3, K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

PHYSICAL CHEMISTRY PRACTICAL - II

Course Objectives:

- *To motivate the students to understand the principles of conductometric titrations and Distribution law.*
- *To understand the Principles and applications of Thermometry.*

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the basic principles of conductometric titrations and determine the Dissociation constant of weak acids.	K2, K5
CO2	Illustrate the principles of distribution law and estimate the distribution of solute in two immiscible solvents.	K2, K5
CO3	Outline the basic principles of thermometry and determine the solution enthalpy of solute in solvent.	K2, K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

ORGANIC SPECTROSCOPY AND REARRANGEMENTS

Course Objectives:

- *To study the concept of UV, IR, NMR spectroscopy, Mass spectrometry and their applications in organic systems.*
- *To interpret the spectral data of organic molecules.*
- *To understand the mechanism of Rearrangement reactions.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Describe the basic principles of UV, IR, ORD and CD, and the applications of UV-Visible spectroscopy, IR spectroscopy, ORD and CD in structural elucidation of organic compounds.	K2, K3, K4
CO2	Interpret the ^1H NMR and ^{13}C NMR spectral data to elucidate the structure of organic compounds.	K2, K3, K4
CO3	Explain the fragmentation pattern in Mass spectrometry and use them in structural elucidation.	K3, K2
CO4	Interpret the 2D NMR spectrum and solve structure related problems	K2, K3
CO5	Illustrate the types and mechanisms of the prescribed rearrangement reactions and their applications in Organic synthesis.	K2, K3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

SPECTRAL METHODS-I, ORGANO METALLIC AND ANALYTICAL METHODS

Course Objectives:

- To study the applications of electronic and photo electronic spectroscopic techniques in coordination compounds.
- To study the applications of ORD and CD to determine absolute configuration of chelate complexes.
- To introduce organometallic compounds and to study their catalytic applications in homogeneous and heterogeneous systems.
- To understand the basic principles and applications of thermo and spectro analytical techniques.

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Describe the principles and applications of electronic and photo electronic spectroscopic techniques in coordination compounds.	K2, K3
CO2	Determine absolute configuration of chelate complexes by applying ORD and CD.	K3, K4, K5
CO3	Recall the EAN rule and explain the 18 & 16 electron rules to determine the stability of complexes.	K1, K2, K4
CO4	Classify terminal and bridging carbonyl groups in metal carbonyls using IR spectra.	K4
CO5	Categorize the different types of organometallic catalysts and explain their applications.	K4, K2, K3
CO6	Describe the principles and applications of thermo analytical techniques and determine the stability of complexes.	K2, K3, K4, K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

GROUP THEORY AND CHEMICAL THERMODYNAMICS

Course Objectives:

- *To understand the basic concepts of group theory.*
- *To understand the inter linking of quantum chemistry and group theory.*
- *To explain various concepts of thermodynamics.*
- *To apply the concepts of statistical thermodynamics for the study of equilibrium reactions and reaction rates.*
- *To understand the inter linking of quantum chemistry and statistical thermodynamics.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the basic concepts of group theory and construct character tables for various point groups.	K2, K3
CO2	Analyze the symmetry of molecules and apply the group theory into spectroscopy and hybridizations.	K4, K3
CO3	Illustrate the relationship between group theory and quantum mechanics.	K2
CO4	Summarize the concepts of statistical thermodynamics and the interlinking between the quantum mechanics and thermodynamics.	K2
CO5	Explain the irreversible thermodynamic processes and apply to biological and non-linear systems.	K2, K3

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

SCIENTIFIC RESEARCH METHODOLOGY

Course Objectives:

- To introduce scientific research and to learn the survey for literature, chemical abstract, choosing a research problem, scientific writing of research articles, presentations and research proposal and funding agencies.
- To learn Plagiarism and Intellectual Property Rights.
- To introduce the basic principles, working and applications of Instrumental techniques like Surface Probe Microscopy.

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Select research problem and various funding agencies.	K2
CO2	Write the research report and make effective presentations.	K3
CO3	Apply software for identifying plagiarism.	K3
CO4	Describe the forms of IPR and its significance.	K2, K3
CO5	Describe the surface probe microscopic techniques to analyze the sample surfaces.	K2, K4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

ORGANIC CHEMISTRY PRACTICAL - III

Course Objectives:

- To enable the student to develop analytical skill in organic quantitative analysis.
- To enable the students to understand the mechanism involved in two stage organic preparations.

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Estimate the amount of organic compounds using quantitative organic estimation methods	K5
CO2	Develop the skills to handle corrosive and toxic chemicals in organic preparations.	K3
CO3	Categorize organic reactions and their mechanisms relevant to organic preparations.	K4
CO4	Carry out microscale organic preparations	K3, K6
CO5	Determine the physical properties of organic compounds	K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

INORGANIC CHEMISTRY PRACTICAL - III

Course Objectives:

- *To identify the methodology to separate and estimate mixture of metal ions quantitatively.*
- *To understand the principles for volumetric and gravimetric methods of estimation of cations present in a mixture.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Describe the concept of volumetric and Gravimetric analysis.	K2
CO2	Explain the principles for volumetric and gravimetric methods of estimation of cations present in a mixture.	K2, K3
CO3	Separate and estimate mixture of metal ions quantitatively.	K4, K5
CO4	Analyze and estimate the contents of Ores and Alloys.	K4, K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

PHYSICAL CHEMISTRY PRACTICAL - III

Course Objectives:

- *To learn and apply the Principles of Potentiometric Titrations.*
- *To understand the Principles and applications of Kinetics and Adsorption.*

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain the principles of potentiometric titrations and apply for various reactions such as neutralization, redox and precipitation reactions.	K2, K3, K5
CO2	Determine the Dissociation constant of weak acids, pH of buffer and solubility product of sparingly soluble salts potentiometrically.	K5
CO3	Describe the principles of chemical kinetics and study the kinetics of a system.	K2, K3, K4
CO4	Illustrate the principles of adsorption process and carry out experiments to find out whether a particular adsorption process is Freundlich or Langmuir Adsorption isotherm.	K2, K3, K4

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

SYNTHETIC STRATEGIES IN ORGANIC CHEMISTRY

Course Objectives:

- To study selected name reactions and synthetic utility of important organic reagents.
- To understand the concept of retrosynthesis and the terms involved, about one group and two group disconnections and protection and deprotection of important functional groups.
- To study about Steroids, Vitamins and Terpenoids.

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Illustrate the prescribed organic name reactions with their mechanisms and apply in organic synthesis.	K2, K3
CO2	Design organic synthetic steps employing disconnection approach in the synthesis of drugs, natural products etc.	K3, K6
CO3	Identify suitable reagent for important organic reactions and building appropriate bonds.	K3
CO4	Explain the structural elucidation of cholesterol and various synthetic approaches of steroids in Natural Products synthesis.	K2
CO5	Infer the structural elucidation and the synthesis of vitamins and terpenoids	K2

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

BIOINORGANIC, SPECTRAL METHODS-II AND PHOTOCHEMISTRY

Course Objectives:

- To introduce bioinorganic chemistry and to study role of metalloporphyrins and metalloenzymes in various biological processes.
- To study the applications of Mossbauer and nuclear quadrupole resonance spectroscopic techniques in inorganic systems.
- To study the applications of NMR and EPR techniques in inorganic systems.
- To introduce inorganic photochemistry and to study applications in various systems.

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Describe the role of metalloporphyrins and metalloenzymes in various biological processes.	K2
CO2	Apply metal complexes as drugs and probes of nucleic acids	K3
CO3	Explain the applications of Mossbauer, NMR and EPR Spectroscopy in inorganic compounds and interpret the data.	K2, K3, K4
CO4	Explain the photophysical and photochemical properties of metal complexes	K2
CO5	Develop photochemical conversion, storage of solar energy and green photocatalyst.	K6

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

CHEMICAL KINETICS, PHOTOCHEMISTRY AND SURFACE CHEMISTRY

Course Objectives:

- To educate the kinetic theory of gases.
- To explain various concepts of Phase rule.
- To elucidate the use of chemical kinetics in understanding reaction mechanisms and to apply the theories and concepts of it for homogenous and heterogeneous catalyzed reactions.
- To understand the photochemical organic reactions and radiation chemistry reactions.
- To understand the surface phenomena.

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Explain kinetic theory of gases and phase rule and its applications.	K2, K3
CO2	Describe the concepts of chemical kinetics and make use of it in understanding reaction mechanisms.	K2,K3, K4
CO3	Illustrate various photochemical processes and experimental techniques in photochemistry.	K2, K4
CO4	Explain the basic ideas of radiation chemistry and its applications.	K2, K3
CO5	Describe the concepts of Adsorption processes and catalysis.	K2

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

SELECTED TOPICS IN CHEMISTRY

Course Objectives:

- *To understand the concept of Computational chemistry.*
- *To learn principle of corrosion, corrosion inhibition and separation techniques.*
- *To study Chemical sensors, Biosensors and Contrasting agents in medical diagnosis.*

Course Outcomes

Upon completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Describe the importance and applications of Computational Chemistry methods.	K2, K3
CO2	Be competent in separation and purification techniques.	K3, K4
CO3	Explain the corrosion monitoring methods and application of corrosion inhibitors.	K2, K3
CO4	Develop various types of sensors.	K3, K6
CO5	Choose contrasting agents in medical diagnosis.	K3, K6

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6:Creating.

COMPUTATIONAL SOFTWARE IN CHEMISTRY

- LABORATORY COURSE

Course Objectives:

- To impart skills on use of various chemistry tools that are essential for any student with chemistry as a major course.
- To learn the techniques of molecular simulations which will enhance the students' employability in academia and industry.

Course Outcomes

On completion of the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Use chemical software for drawing chemical structures, reaction schemes and generation of their names.	K3
CO2	Perform molecular docking in structural molecular biology and computer assisted drug design which enhance their employability in academia and industry.	K4, K6
CO3	Calculate the single point energy, energy gap, dipole moment, resonance energy, equilibrium constant, electrophilicity index, dimerisation energy etc.	K5
CO4	Interpret spectral data (UV, IR, NMR spectrum)	K4
CO5	Investigate intermolecular interactions and packing in crystalline materials using Hirshfeld surface analysis.	K4, K5

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

PROJECT

Course Objectives:

- *This course is designed to reinforce the concepts with analytical techniques.*
- *It provides a platform for students to have a hands-on experience with instruments and present a project report on a research topic.*

Course Outcomes

After completing the course, the students will be able to

CO Nos	CO Statement	Cognitive Level
CO1	Identify research problem, carry out literature survey and use of different experimental/spectroscopic techniques.	K1, K2, K3, K4
CO2	Develop interdisciplinary solutions to a variety of chemical problems.	K3
CO3	Communicate research findings efficiently in written (report) and verbal (viva-voce) forms.	K4, K5, K6
CO4	Use terminology appropriate to the field of study correctly and contextually.	K3
CO5	Motivate themselves and acquire basic knowledge for carrying out research work.	K6, K2

K-1: Remembering; K-2: Understanding; K-3: Applying; K-4: Analyzing; K-5: Evaluating; K-6: Creating.

5.M.SC., ZOOLOGY

Programme Educational Objectives (PEOs)

The M.Sc., Programme will enable the students

PEO1:To acquire knowledge on recent development in Science and its applications in various fields.

PEO2:To prepare the post-graduate aspirants to qualify competitive examinations, and subsequent placements.

PEO3:To gain knowledge on agro-based industries related to applied Science leading to self-employment and entrepreneurship.

PEO4:To inculcate scientific literature in Science and promote students with research aptitude to participate in the society oriented research.

PEO5:To upgrade the academic performance of students in par with the national and international levels.

PEO6:To create the holistic development in students and facilitate them to become a responsible Indian citizen.

Programme Outcomes (POs)

Upon completion of M.Sc., programme the students will be able to

PO1: Gain knowledge and skill in the fundamentals of both classic and applied aspects.

PO2: Analyse the interactions among the diverse animals and their relationship with the environment.

PO3: Understand the various genetic principles and their importance to animal and human health.

PO4: Acquire knowledge on applied and agro-based industries such as sericulture, aquaculture, poultry farming, vermicomposting etc.

PO5: Make use of the principles and professional ethics while delivering their duties in relevant fields.

PO6: Apply the knowledge and understanding for utilization of renewable energy for sustainable development and creating a clean and healthy environment.

PO7: Contribute their education and experience to the development of our country.

Programme Specific Outcomes (PSOs)

Upon completion of M.Sc., Zoology programme, the student will be able to

PSO1:Apply various concepts of Zoology in genetic engineering, soil fertility, food industry, clinical laboratory, health and hygiene etc.

PSO2:Utilize academic proficiency, effective communication and practical skills in dissemination of knowledge.

PSO3:Make use of the knowledge and skills to face pandemic, epidemic and other health issues.

PSO4: Critically evaluate various ecological issues and resolve the complex environmental problems.

PSO5:Design research project to collect, present, use statistical packages for analysis and interpret the biological data

PSO6:Practice moral standards and ethical principles in biological research leading to social and clinical values.

PSO7:Participate in competitive examinations and become professionals at various field of animal sciences including research and teaching.

PSO8:Develop empathy and love towards the wild animals, their environment and conservation practices.

STRUCTURE AND FUNCTION OF INVERTEBRATES

Course Objectives:

The objectives of the course are enabling the student to

- 1. insist the importance of nomenclature and taxonomic classification of invertebrates and fundamental concepts.*
- 2. acquire knowledge on the similarities and differences of structural organization between organisms and functional relations among invertebrates.*
- 3. understand the structure of different organ systems and their special functional adaptations.*
- 4. emphasize the role of functional aspects in the light of evolutionary significance.*
- 5. importance of larval forms and minor phyla to understand the phylogeny.*

Course Outcomes

Upon the successful completion of the course, the student will be able to

C01: develop critical understanding of fundamental concepts in taxonomic procedure and identification of invertebrates at species level using bioinformatics tools.

C02: examine the pattern of locomotion and nutrition of invertebrates on the basis of their morphological characteristics and structures.

C03: apply the knowledge of respiration, circulation and excretion and analyses how do the variations are established among invertebrate animals.

C04: analyses the progressive complexity of nervous system among invertebrates and compare the complexity of neural evolution with other taxa.

C05: interpret and conclude how the morphological changes occur in invertebrate due to changes in environment and help to drive evolution over a long period of time.

C06: The course makes a detailed comparison of the anatomy of invertebrates and also highlights how the taxonomic hierarchy relates their complexity of structure and function. The course thus gives an overview of the intricate life processes and adaptive radiations in invertebrates.

COMPARATIVE ANATOMY OF CHORDATES

Course Objectives:

The objectives of the courses are enabling the student to

- 1. understand the origin, evolution and classification of Chordates.*
- 2. explore the vertebrate morphology and anatomy with the aim to understand the physiological functions and adaptation.*
- 3. explain and describe the physiological adaptations in chordates.*
- 4. compare and evaluate the anatomical structures with functions in the diverse group of chordates.*

Course Outcomes

Upon the successful completion of the course, the student will be able to

C01: develop understanding of the evolution of vertebrates by integrating the structure, function and development.

C02: relate the evolutionary concepts including homology and analogy and able to discuss the details of major organ systems.

C03: analyze and appreciate the basic structural organization of endoskeletal system in diverse groups of chordates and its evolutionary importance.

C04: compare the similarities and dissimilarities of respiratory, circulatory and nervous system of vertebrates.

C05: apply the knowledge of progressive changes in the development of urinogenital system and sense organs in relation to their mode of life.

C06: integrate the morphology of vertebrates with their ecology, behaviour and physiological adaptation in diverse habitats.

C07: design and construct a teaching module to elucidate/explain the comparative anatomy of chordate.

ENVIRONMENTAL BIOLOGY

Course Objectives:

- 1. To provide fundamental environmental concepts that provides an in-depth understanding of our environment.*
- 2. The scientific basis for understanding how environmental systems interfere with population and interactions, community ecology and succession, types of ecosystems, pollution effects and conservation.*

Course Outcomes

The Course will provide an overview of know the concepts of environment, populations ecology and its interactions, community ecology and ecological succession, ecosystems and biogeography and pollution and conservation.

C01: Understand the concepts of environment

C02: Identify the characteristics of population and its interactions

C03: Understand community ecology and ecological succession

C04: Appreciate how elements are cycling in the environment

C05: Understand the productivity and functions of Indian ecosystems

C06: Understand the types, sources, effects and control of pollution and importance of green-house effect, acid rain and ozone depletion

C07: Recognise the need of conservation strategies.

BIOCHEMISTRY

Course Objectives:

The objectives of the course are to

- 1. Illustrate the structure of atoms and molecules and their biological importance*
- 2. Relate the structure and biological functions of carbohydrates ,proteins, lipids, nucleic acids, and vitamins*
- 3. Explain the synthesis of carbohydrates, proteins, lipids, and nucleic acids and their role in metabolic pathways*
- 4. Analyse the mechanism of action of enzymes, enzyme kinetics and the role of coenzymes, iso enzyme and ribozyme*
- 5. Compare the metabolic disorders of carbohydrates, proteins, lipids, and nucleic acids*

Course Outcomes

On successful completion of the course the student will be able to

C01: Explain the structures and functions of biomolecules

C02:Classify the biomolecules

C03: Identify biomolecules structural differences and its properties

C04: Apply biochemical calculation for enzyme kinetics.

C05: Analyse the properties of bio molecules

C06: Interpret the metabolic disorders of biomolecules

C07: Solve the problems in biochemistry

CELL AND MOLECULAR BIOLOGY

Course Objectives:

The objectives of the course are enabling the student to

- 1. To equip the students on the structure and function of cells*
- 2. To understand importance of molecular structure of chromosome, nucleic acid etc.*
- 3. To emphasize the role of recombinant DNA technology and gene expression.*

Course Outcomes

Upon the successful completion of the course, the student will be able to

C01: understand the structural and functional differentiation of prokaryotes and eukaryotes.

C02: Acquire knowledge on structure and function of cell organelles.

C03: Imbibe the knowledge on cell cycle and related diseases

C04: Enable to understand the bio-chemical nature of DNA

C05: Understand DNA repairing mechanism and protein synthesis

C06: Learn regulation of gene expression in prokaryotes and eukaryotes.

DEVELOPMENTAL BIOLOGY

Course Objectives:

The objectives of the course are enabling the student to

- 1. To understand the basic concepts of development*
- 2. To comprehend the process of production of gametes*
- 3. To emphasize the importance of morphogenesis and organogenesis*

Course Outcomes

Upon the successful completion of the course, the student will be able to

C01: Understand the concept of differentiation and transgenics of development.

C02: Acquire knowledge on gametogenesis, fertilization and early development

C03: Comprehend cell surface molecules in sperm-egg recognition

C04: Enable to know the environmental regulation of embryonic development

C05: Understand the concept of regenerative capacity in the animal

C06: Learn infertility and various assisted reproductive technology

GENETICS

Course Objectives:

The objectives of the course are enabling the student to

- 1. To understand the basic concepts of heredity and scope of genetics*
- 2. To comprehend the gene and gene mapping in prokaryotes and eukaryotes*
- 3. To emphasize the chromosomal aberrations, chromosome anomalies and genetic diseases*

Course Outcomes

Upon the successful completion of the course, the student will be able to

C01: Evaluate the deviations from Mendelian Inheritance

C02: Acquire knowledge on concepts of Linkage, recombination and crossing over

C03: Comprehend and contrast X-linked and Y-linked inheritance in man

C04: Enable to know the concepts of Eugenics and Euthenics.

C05: Understand the concept of genetic structure of populations and changes in gene frequency

C06: Evaluate mutation, mutagenesis, mutagens, and mutants and its evolutionary significance

EVOLUTION

Course Objectives:

The objectives of the course are enabling the student to

- 1. To understand the basic concepts of emergence of evolutionary theories*
- 2. To comprehend the major trends in the origin of higher categories*
- 3. To monitor natural populations and conservation of genetic resources*

Course Outcomes

Upon the successful completion of the course, the student will be able to

C01: Interpret the evolutionary time scale and stages of primate evolution

C02: Acquire knowledge on molecular Evolution and role of gene in evolution

C03: Comprehend molecular phylogenetics and construction of phylogenetic tree

C04: Evaluate the protein and nucleic acid sequences with phylogeny

C05: Justify the concept of extinction of small populations frequency

C06: Assess the development of artificial evolution *in vitro*

COMPARATIVE ANIMAL PHYSIOLOGY

Course Objectives:

The objectives of the course are to

- 1. To understand the principles and facts of animal physiology.*
- 2. To emphasize on mammalian physiology and other vertebrate taxa.*
- 3. To deal with the diverse functions of the living organisms encompassing various physiological systems.*

Course Outcomes

On successful completion of the course the student will be able to

C01: assess the levels of adaptations, its mechanism, and physiological adaptations of different environments.

C02: compare the physiological adaptations to stress, exercise, meditation, yoga and their effects.

C03: evaluate the respiratory physiology in air, and water and its neural and chemical regulations.

C04: Analyse the mechanism of excretion and their excretory products and the role of endocrine glands in various functions.

C05: Compare the neural and muscular physiology and analyse the mechanism of muscular contraction.

ANIMAL BIOTECHNOLOGY

Course Objectives:

The objectives of the course are to

- 1. facilitate the method of conversion of natural raw materials into useful products by the application of living organism in the industrial process.*
- 2. conservation of resources via the recycling of waste material and the recovery of more valuable products.*
- 3. Diagnose diseases and apply therapeutics using biotechnology tools*
- 4. Deal with environmental pollution remedies using recombinant strains and bioethics of biotechnological products.*

Course Outcomes

On successful completion of the course the student will be able to

C01: Discuss the basic steps in gene cloning, hybridization and DNA sequencing techniques.

C02: Evaluate human genome project, DNA sequencing, synthesis of oligonucleotides and gene transfer technology

C03: Examine cell culture, organ culture, embryo culture and *in vitro* fertilization and embryo transfer.

C04: Analyse fermentation, microbial products, protein engineering, and enzyme biotechnology.

C05: Evaluate the microbial biomass production and genetically engineered microorganisms.

RESEARCH METHODOLOGY

Course Objectives:

The objectives of the course are enabling the student to

- 1. understand the working principles, construction and applications of the instruments used in research related to Zoology.*
- 2. Know the general laboratory procedures and maintenance of research equipment.*
- 3. appreciate the importance, concept of research and learn the art of thesis, paper writing and publication.*
- 4. overview the concept of preparation of research proposal & funding agencies,*

Course Outcomes

Upon the successful completion of the course, the student will be able to

COs 1: Understand the objectives, types and importance of research. Formulate the parts of dissertation and develop report writing.

COs 2: Plan the methods of writing scientific paper and components of research paper.

Realise the need of publication and know the importance of impact factor & citation index.

COs 3: Analyse the working principles of microscopy, pH meter and preparation of different buffers. Measure the pH of soil and different water samples

COs 4: Realise the need of centrifuges and their uses in research and can separate amino. Realise the principle and applications of gas liquid chromatography. acids and sugars using paper & thin layer chromatography

COs 5: Learn the principles and applications of electrophoresis, flame photometer, and bomb calorimeter. Estimate amino acids and sugars using spectroscopic techniques

MICROBIOLOGY

Course Objectives:

The objectives of the course are to

- 1 Promote interest in the basic and applied areas of Microbiology*
- 2 Deal with the classification of bacteria, algae, fungi, protozoa and viruses.*
- 3 Impart knowledge of role of microorganisms in industrial, food, medical and agricultural sectors.*
- 4 Emphasize the primary and secondary screening of microbes linked to fermentation industry.*
- 5 Focus on the medically important microbes, causative agents of diseases, symptoms and control measures*

Course Outcomes

On successful completion of the course the student will be able to

- CO1:** Assess the classification of microorganisms, general properties and their structure and cultivation methods.
- CO2:** Analyse the bacterial morphology, nutritional requirements and culture techniques.
- CO3:** Evaluate the role of microbes in fermentation and microbial production of antibiotics, bio-fertilizers, insecticides etc.
- CO4:** Apply the microbial analysis of water purity, role of microbes in sewage treatment and biogas production and mining.
- CO5:** Examine various microbial pathogenesis and problems related to antibiotic resistance in man.

BIOSTATISTICS AND BIOINFORMATICS

Course Objectives:

The objectives of the course are to

- 1. impart knowledge on data collection, classification tabulation and graphic presentation.*
- 2. Learn important statistical methods such as measure of central tendency, correlation and regression.*
- 3. Gain knowledge on concept of probability, distributions and tests of significance.*
- 4. Comprehend the chi-square test – goodness of fit and one-way two-way analysis of variance*
- 5. Understand the role of information technology in Biology and application of Bioinformatics.*

Course Outcomes

On successful completion of the course the student will be able to

C01: Assess the methods of collection data, sampling, classification, tabulation and presentation of data.

C02: Analyse the measure of central tendency, dispersion, skewness and kurtosis.

C03: Evaluate the types of correlation, correlation coefficient, regression analysis and regression equation.

C04: Examine the theoretical Distribution, Binomial distribution, Poisson distribution and Normal distribution in Biological sciences.

C05: Apply the concepts of Bioinformatics, bioinformatics tools and Polygenetic analysis tools.

IMMUNOLOGY

Course Objectives:

The objectives of the course are enabling the student to

- 1. Understand the concepts and molecular events underlying Immunology.*
- 2. Identify the cells and organs of immune system and antigen-antibody interactions.*
- 3. Appreciate the MHC, immune-regulation, immune-tolerance and complement system.*
- 4. Know the Immunological tolerance, hypersensitivity, immunological reactions and immune response.*

Course Outcomes

Upon the successful completion of the course, the student will be able to

COs 1: Explain the organization and structure of lymphoid organs Cells of the immune system and their differentiation.

COs 2: Analyse antigens, Antigenicity, immunogenicity, factors influencing immunogenicity and structure and functions of Antibodies

COs 3: Analyse the Complement system, Major Histocompatibility Complex and HLA system in man

COs 4: Evaluate generation, activation and differentiation of T-cells and B-Cells.

COs 5: Assess the immunological reactions and immune response to tumor evasion of the immune system – cancer immunotherapy

ENTOMOLOGY

Course Objectives:

The objectives of the course are to

- 1. Demonstrate insect identification, structure, and function*
- 2. Examine insects deeply within a biological level of analysis*
- 3. Impart knowledge on basic aspects of anatomy of different insects*
- 4. Identify the potential impact of different insect species on agriculture,*
- 5. Understand the principles and methods of managing pest insect populations*

Course Outcomes

On successful completion of the course the student will be able to

C01: Classify insects using taxonomic keys.

C02: Demonstrate the external morphology of the insect body and their appendages and functions

C03: Identify, collect, and manage different insects of household, man and animals

C04: Apply appropriate indirect and direct measures to prevent or reduce pest attack

C05: Analyse the main pest species of crops based on the symptoms of the attack and morphological traits

C06: Develop strategies to manage the vectors population

C07: Plan and implement crop protection according to the Integrated Pest Management Principles.

AQUACULTURE

Course Objectives:

The objectives of the course are to

- 1. Creating awareness on the scope & importance, fishery resources of India in general and Tamil Nadu in particular.*
- 2. Support different types of Fish culture, fresh water and marine prawn culture and its prospects in India*
- 3. Promote, facilitate and influence the best possible standards of fisheries management.*
- 4. Provide the technical and general knowledge necessary for competent fisheries management.*
- 5. Inform the recent advancement and role of biotechnology in conservation of fishes.*

Course Outcomes

On successful completion of the course the student will be able to

CO1: Assess the biotic and abiotic factors of water necessary for fish life and ecological characteristics of lakes, rivers and marine environment.

CO2: Analyse culture of mussels, clams, oysters and pearl culture, sewage fed fish culture, paddy cum fish culture, frog culture, and sea weed culture.

CO3: Evaluate the fish breeding in natural conditions, hypophysation, stripping, transgenic fishes, hybridization and polyploidy.

CO4: Construction of different types of fish ponds, setting and management of fresh water aquarium.

CO5: Examine common fish diseases such as bacterial, viral, fungal and nutritional deficiency diseases.

SERICULTURE

Course Objectives:

The objectives of the course are to

- 1. Creating awareness on the scope, importance, Sericulture resources of national and international level.*
- 2. Promote the various techniques involved in the rearing of mulberry silkworm.*
- 3. Support practices for mulberry cultivation and propagation. Methods of propagation, manuring, irrigation, pruning and harvesting of leaves.*
- 4. Provide knowledge on physical characters for commercial purposes and Cocoon marketing.*
- 5. Inform the recent trends in silk production and marketing and sericulture an entrepreneurship for youth and women.*

Course Outcomes

On successful completion of the course the student will be able to

CO1: Assess the Silk producing organisms, Non-mulberry silkworms: Eri, Tasar & Muga, their food plants and life history.

CO2: Analyze mulberry varieties, cultivation, propagation, manuring, irrigation, pruning and harvesting of leaves.

CO3: Evaluate the biology of *B. mori*, voltinism and races suitable for rearing. **CO4:** Rearing methods like Chawki rearing and rearing of late age and mature larvae- mounting practices and cocoon marketing.

CO5: Examine diseases of Silkworm like Fungal, Viral, Bacterial diseases and Pest of silkworm and causative agent, symptoms, prevention and control measures.

1. M. PHIL - ECONOMICS

Course Outcomes

- To prepare the students to identify the research issues in economics especially in the thrust areas.
- To inculcate the research aptitude among the students.
- To understand the significance and the methodology of research with the application of statistics and Mathematics for economic model building with view to suggesting policies.

2. M.PHIL ENGLISH

Programme Outcomes:

POs	At the end of the programme, the students will be able to:
P01	Comprehend the significance of literary works in their social, cultural and ideological contexts.
P02	Discover the incredible diversity of the English Language and Literature throughout the history of the world
P03	Ascertain how writers have reacted to the social developments of their contemporary period and produced a text
P04	Express the hermeneutic engagement of creative texts with gender, race, region and identity across various significations.
P05	problematise contemporary Literature and cultures with a nationalist perspective
P06	Develop comprehensive reading, writing, and research skills of a high order
P07	undertake academic and literary professions.
P08	Adapt themselves to the changing aspects of academic and creative professionalism.

Programme Specific Outcomes:

PSOs	Upon completion of the M.Phil English Literature Programme, students will be able to:
PSO1	Locate the historicity and textuality of World Anglophone Literatures.
PSO2	Appraise the diversity of humanist discourses delineated in the texts
PSO3	Relate the texts to convey and construct cultural values and ideas
PSO4	Foster and articulate universalism with social empathy
PSO5	Respond positively to the significant paradigm shift
PSO6	Validate the texts with dominant critical theories, methodologies, and contemporary tactics in the field.
PSO7	Develop proficiency in critical thought and academic writing.
PSO8	Acquire professional skills related to translation and media studies

Course Outcomes:

COs	Upon the completion of this course, students will be able to	Cognitive Level
CO1	Identify the key concepts of Contemporary Literature	K1
CO2	Infer the common themes dealt by the Contemporary Literature	K2
CO3	Analyse the origin of post-colonial theories	K3
CO4	Categorise selected texts for their literary value and cultural importance.	K4
CO5	Disseminate the significance of Language, Literature and Hybridity in Contemporary Period	K5
CO6	Overcome the assimilatory practices of the cultural, historical, and economic processes of Contemporary Literature	K6

3. M. PHIL - MATHEMATICS

Course Outcomes

- To develop a strong base in theoretical mathematics such as Advanced Algebra, Advanced Analysis, Functional Analysis.
- Enables the students to obtain advanced knowledge in a specialized field.
- Communicate mathematical ideas, results, context and background effectively and professionally in written and oral form.
- Students will be able to produce and define an original contribution to knowledge as evidenced by the writing and defense of a thesis involving significant original research.

4. M. PHIL-CHEMISTRY

Course Outcomes

- After studying the M.Phil. program, the students will be able to
- Introduce the purpose and importance of research for future development.
- Know the different types of literature search and indexes.
- Understand the error analysis, correlation methods and computer application.
- Enrich the knowledge in various types of spectral techniques and scientific analysis.
- Develop their skills for carryout the project.
- Make awareness in social and industrial relevant issues.
- Expose to present their findings in national and international seminars and conferences.
- Qualify as Chemist/Scientist in various industries and research institutions.

5. M. PHIL., ZOOLOGY

RESEARCH AND TEACHING METHODOLOGY

Course Objective:

To provide in-depth Knowledge on methods involved in preparation of working solutions, quantitative and also on the working principles of equipments involved in research and teaching pattern.

Course Outcomes

COs	Upon the completion of this course, students will be able to
CO1	Know to significance and preparation protocol of solution and buffers for research work.
CO2	Learn to know the principle and functions of advanced biological instruments and their applications.
CO3	Acquired Knowledge on the histopathological and histochemical techniques.
CO4	know the quantitative and qualitative estimation of biological macro and micro molecules.
CO5	Learn to handle the computer aided statistical software packages.
CO6	Enable to familiarize the methods of thesis writing and project proposal preparation.
CO7	Inculcate the knowledge on the teaching and learning methods.

ANIMAL BIODIVERSITY

Course Objective:

To provide knowledge on animal diversity, its significance in natural environmental and conservation strategies.

Course Outcomes

COs	Upon the completion of this course, students will be able to
CO1	Understand the ecosystem, diversity of organisms and their ecological relationship.
CO2	Know the genetic relationship of an animal's their distribution and biological hotspot areas.
CO3	Realize the importance of animal classification and taxonomy; species concept and their evolutionary significance.
CO4	Inculcate conservation strategies of ecosystem and various enactments relating to conservation policy at national and international status.
CO5	Learn the measurement of biodiversity richness, species evenness and geometric analysis.

ANIMAL HEALTH

Objective:

To provide knowledge on animal health, disease control, and related farm management practices.

Course Outcomes

COs	Upon the completion of this course, students will be able to
CO1	Know the importance of animal nutrition, nutritional deficiency diseases and feed management.
CO2	Learn the control and management of zoonotic organisms.
CO3	Know the cattle/livestock management practices.

APPLIED ZOOLOGY

Course Objective:

To provide knowledge on vermiculture techniques, harmful insects related to agriculture, infectious and communicable diseases, live stocks diseases and farming also on the significance and economic importance of sericulture and apiculture.

Course Outcomes

COs	Upon the completion of this course, students will be able to
CO1:	Know the importance of productive insects and their conservation strategies.
CO2:	Learn the management and control of causative agents.

DOCTOR OF PHILOSOPHY (PH. D - ECONOMICS)

Course Outcomes

- Develop and deepen the current and advanced knowledge in the field with original thought and/or research and come up with innovative definitions based on Master's degree qualifications.
- Conceive the interdisciplinary interaction which the field is related with, come up with original solutions by using knowledge requiring proficiency on analysis, synthesis and assessment of new and complex ideas.
- Evaluate and use new information within the field in a systematic approach.
- Develop an innovative knowledge, method, design and/or practice or adapt an already known knowledge, method, design and/or practice to another field; research, conceive, design, adapt and implement an original subject.
- Critical analysis, synthesis and evaluation of new and complex ideas.
- Gain advanced level skills in the use of research methods in the field of study.
- Contribute the progression in the field by producing an innovative idea, skill, design and/or practice or by adapting an already known idea, skill, design, and/or practice to a different field independently.
- Broaden the borders of the knowledge in the field by producing or interpreting an original work or publishing at least one scientific paper in the field in national and/or international refereed journals.
- Demonstrate leadership in contexts requiring innovative and interdisciplinary problem solving.
- Develop new ideas and methods in the field by using high level mental processes such as creative and critical thinking, problem solving and decision making.

- Investigate and improve social connections and their conducting norms and manage the actions to change them when necessary.
- Defend original views when exchanging ideas in the field with professionals and communicate effectively by showing competence in the field.
- Contribute to the transition of the community to an information society and its sustainability process by introducing scientific, technological, social or cultural improvements.
- Demonstrate functional interaction by using strategic decision making processes in solving problems encountered in the field.
- Contribute to the solution finding process regarding social, scientific, cultural and ethical problems in the field and support the development of these values.

DOCTOR OF PHILOSOPHY (PH. D - ENGLISH)

Course Outcomes

- To enable the scholars to have a focused study on the chosen literary works.
- To guide the scholars through various course work assigned to them.
- To guide the scholars to publish articles in various journals as part of their research work.

DOCTOR OF PHILOSOPHY (PH. D - MATHAMATICS)

Course Outcomes

- To enable the scholars to have a focused study on the mathematical analysis.
- To guide the scholars through various course work assigned to them.
- To guide the scholars to publish articles in various journals as part of their research work.

DOCTOR OF PHILOSOPHY (PH. D-CHEMISTRY)

Course Outcomes

- To have a deep working knowledge of the principles, techniques, and concepts of contemporary chemistry.
- To be able to effectively design and carry out independent research leading to new knowledge.
- To be able to communicate clearly and effectively within and across disciplinary lines.
- To be able to educate students interested in chemical sciences.
- To be aware of and prepare for various career opportunities with an advanced degree in chemistry.
- To clearly understand the ethical conduct of research.
- To understand and adopt the best safety practices in chemical research.

DOCTOR OF PHILOSOPHY (PH. D-ZOOLOGY)

Course outcomes

- To impart specific research skills that underpins the various branches of the science of Zoology.
- To enable the deep research knowledge to understanding and knowledge of vast areas of Zoology.
- To make the research scholars to develop the knowledge regarding cellular, biochemical, biophysical and organs level.
- To facilitate the research scholars get the job offer from various college lecturer and researcher at scientist level in national and international level institutes.
- To apply the in depth practical skills with appropriate statistical to prove for societal importance for betterment of human being.
- To create and give suggestion to people or government authorities via research publication and conference presentation.

ADD ON COURSES

CAREER ORIENTED COURSES

CERTIFICATE COURSE IN SOIL SCIENCE AND AGRICULTURE

CHEMISTRY (for I B. Sc Chemistry)

Course outcomes

- Comprehensive knowledge on rocks and minerals, their composition and the types of soils formed from different parent materials.
- Imparts knowledge on essential nutrients, soil fertility, nutrient transformations, Manures and fertilizers in soil.
- Understand various soil physical, chemical and biological properties and their impact on plant growth.
- The knowledge gained in this course will be useful in understanding the behavior of soils in crop production and management.

DIPLOMA COURSE IN SOIL SCIENCE AND AGRICULTURE CHEMISTRY

(for II B. Sc Chemistry)

Course Outcomes

- Students will gain knowledge on concepts and principles of Soil Science.
- This course will impart knowledge on the concepts and methods of soil resource inventory.
- Students will understand on soil quality and health, Distribution of Waste land and problematic soils and their reclamation in Tamil Nadu
- The knowledge gained in this course will be useful in understanding the behavior of soils in crop production and management.

CERTIFICATE COURSE IN GANDHIAN THOUGHT

Course Outcome

- Mahatma Gandhi and his principles have great relevance in this era of Globalization.
- Violent conflict and instability disrupt markets and societies.
- A peaceful environment is a pre requisite for successful business.
- Inclusive Growth is necessary for sustainable development. This course is designed to inculcate strong values in students and sensitize the youth to the problems of the marginalized.
- It aims at training the students in the art of participatory management and peaceful methods of conflict resolution.
- Through an interesting and well-planned mix of lectures, presentations, skits, films, social outreach programs and other activities it aims at developing the overall personality of students by helping them discover their latent talents and instilling leadership qualities.
- True education is not just coming out with a degree.
- It is how you change and what your values are when you finish. Peace is definitely good business and efforts to promote it certainly makes good business sense.
- With increasing number of Companies going in for Corporate Social Responsibility students who have completed this Course will definitely have an edge over others as the job market may prefer those who have executed some social sector responsibilities in addition to academics.

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CERTIFICATE COURSE IN SALESMANSHIP

Course Outcomes

- To familiarize the students regarding various dimensions of salesmanship and career opportunities available in these fields.
- To familiarize the students in understanding the basic psychology of the customer and pitch the sales accordingly.
- To develop practical understanding among the students associated with salesmanship through classroom discussion/ participation and projects.
- To develop transferrable skills among the students for managing sales operation efficiently so that they could be ready to join the sales functions in any organization.
- To provide knowledge to students in concise and understandable format so that students could learn and apply these concepts in their career for the growth.
- To provide brief insight about personal selling and its stages, meaning and importance of knowledge of industry and company product and customers and other key dimensions of sales management like sales organization, motivation and compensation.