



## **SREE NARAYANA COLLEGE, CHATHANNUR**



### **CRITERION II: TEACHING-LEARNING AND EVALUATION**

#### **2.6 - Student Performance and Learning Outcomes**

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



**SREE NARAYANA COLLEGE, CHATHANNUR**  
**PG DEPARTMENT OF COMMERCE**  
**B.COM CBCSS COURSE OUTCOME AND PROGRAMME OUTCOME**

<b>SEMESTER</b>	<b>COURSE NAME</b>	<b>COURSE OUT COME</b>	<b>PROGRAMME OUTCOME</b>
I	Methodology and perspectives of business education	To focus higher learning in business education	To create awareness about business environment and fundamental understanding about ethical practices
I	Environmental studies	To develop knowledge of environment that contribute maintaining and enhance quality of environment	To acquire basic ideas about environment and give awareness about environmental protection
I	Management concepts and thought	To provide advance learning on management theory and practice	To understand different dimensions of the management process
I	Managerial economics	To enhance application of economics in managerial decision making	To understand economic principles and theories in various business decisions
II	Informatics and cyber laws	To equip the students to effectively utilize the digital knowledge	To create awareness about informatics, cyber laws and regulations
II	Financial accounting	To equip the students to prepare the accounts of specialized business enterprises	To familiarize the accounting treatment of specialized business enterprises
II	Business regulatory framework	To acquaint the students with the legal framework influencing business decisions and operations.	To provide a brief idea about the framework of Indian business Laws
II	Business mathematics	To acquire knowledge in applying basic mathematical tools in practical business decisions.	To familiarise the students with the basic mathematical tools.
III	Entrepreneurship development	To provide practical insight for becoming an entrepreneur	To familiarize the students with the latest programmes of Government in promoting small and medium industries
III	Advanced financial accounting	To enhance knowledge with the preparation of accounts of various business areas	To provide awareness of accounts related to dissolution of partnership firms, consignments, joint venture, branch and departments
III	Company administration	To familiarize the students about the salient provisions of Indian	To acquaint the students with Management and Administration of Companies, Compliance

		Companies Act 2013	requirements, investigation into the affairs of the company and winding up procedure
III	Financial management	To provide conceptual and analytical insights to make financial decisions skill fully.	To familiarise the students with the conceptual framework of financial management and its practical application
IV	Indian financial market	To provide an in-depth knowledge on Financial Market and its Operations	To provide a clear-cut idea about the functioning of Indian Financial Market
IV	Banking and insurance	To expose the students to the changing scenario of Indian banking and Insurance.	To provide a basic knowledge about the theory and practice of banking and insurance
IV	Corporate accounting	To expose the students to the accounting practices prevailing in corporate entities	To create awareness about corporate accounting in conformity with the provisions of Companies Act, IAS, IFRS and preparation of accounts of banking and insurance companies
IV	Project finance	To provide an understanding of the process and issues relating to project preparation, appraisal, administration, review and monitoring of projects	To familiarise the students with the types of project appraisal, risk analysis, project financing costing and valuing
V	Fundamentals of income tax	To impart basic knowledge and understanding of the concepts and practices of Income Tax law in India.	To enable the students to acquire the basic skills required to compute the tax liability of individual assessee with more emphasis on Income from Salaries and Income from House property, business or profession, capital gain and other sources
V	Cost accounting	To impart knowledge of cost accounting system and acquaint the students with the measures of cost control	To familiarize the students with cost and cost accounting concepts and its accounting treatment
V	Marketing management	To impart the knowledge of various concepts of modern marketing management	To provide an understanding of the contemporary marketing process in the emerging business scenario and application of modern marketing techniques for obtaining a competitive advantage in business organizations
V	Financial services in India	To provide a general awareness about the financial services	To familiarize the students with the structure and functioning of financial service sector in India
VI	Auditing	The acquaint the	To provide students the knowledge of
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		students with the principles and practice of auditing	auditing principles, procedures and techniques in accordance with current legal requirements and professional standards
VI	Applied costing	To develop the skill required for the application of the methods and techniques of costing in managerial decisions.	To acquaint the students with different methods and techniques of costing
VI	Management accounting	To develop professional competence and skill in applying accounting information for decision making.	To enable students to acquire sound knowledge of concepts, methods and techniques of management accounting
VI	Strategic management	To enhance the decision-making abilities of students in situations of uncertainty and dynamic business environment	To give basic understanding about the concepts related to strategic management

### M.COM – COURSE OUTCOME AND PROGRAMME OUTCOME

SEMESTER	COURSE	COURSE OUTCOME	PROGRAMME OUTCOME
I	Business Ethics and Corporate Governance	To provide a understanding on Corporate Governance practices and the provisions of the Companies Act relating to corporate governance	To convey basic understandings on the theories of Business Ethics
I	Legal Framework for Business	To enable student acquire updated knowledge and develop understanding of the regulatory framework for business	To make students aware of opportunities available in various legal compliances so as to enable them employable and To expose students in emerging trends in good governance practices including governance
I	Research Methodology	To acquire practical knowledge and required skills in carrying out research.	To provide an insight into the fundamentals of social science research and to understand the need, significance and relevance of research and research design
I	Planning and Development Administration	To make the students aware about new planning initiatives in India	To generate an overall insight on planning process in Indian Economy
I	Advanced	To expose the students to	To acquaint the students

	Corporate Accounting and Reporting	advanced accounting issues and practices such as insurance claims, investment accounting and liquidation of companies.	about important accounting standards and to gain ability to prepare financial statements including consolidated financial statements of group companies and financial reports of various types of entities by applying relevant accounting standards
II	E-Business and Cyber Laws	To familiarise and acquire advance knowledge in information technology	To equip the students with the emerging trends in business and to equip the students to introduce and explore the use of information technology in all aspects of business
II	Strategic Management	To explore knowledge in strategy and how to implement in an organization for various situations	To create a conceptual awareness on various strategies and to familiarise students with the formulation, implementation and evaluation of strategies
II	Quantitative Techniques and Financial Econometrics	To explore the area of quantitative techniques and SPSS used for their future research	To impart expert knowledge in the application of Quantitative Techniques, Business Econometrics in research and use of SPSS in processing and analysis of data.
II	International Business	To acquire knowledge regarding international business	To introduce the concept of international business and to create awareness on the changes in the international business arena
II	Investment Management	To explore border understanding of investment.	To provide a general understanding about investment avenues, personal finance, behavioural finance and how it equips to decide personal investment.
III	Income tax Planning and Management	To acquire knowledge regarding income tax Act and its practical implementations	To impart deep knowledge about the latest provisions of Income Tax Act and to develop application and

			analytical skill of the provisions of Income Tax Law for Income Tax planning and Management.
III	Security Analysis and Portfolio Management	To equip the students to value the real worth of securities	To provide a comprehensive understanding on the principles of security analysis and develop the skill in portfolio management.
III	International Financial Management	To explore broader concepts on international financial instruments and markets.	To familiarise the students with the international financial markets and instruments and foreign exchange risk management
III	Strategic Cost and Management Accounting	To introduce the evolving Strategic approaches and techniques in Cost and Management field and to developed industrial behaviour among the students in the emerging business areas	To comprehend and familiarize the established techniques, methods and practices in Strategic Cost and Management Accounting to the students
IV	Goods and Service tax & Customs Duty-Law and practice	To impart skill in applying and analysing the provisions of Goods and Service Tax Act and Customs Act in handling practical situations	To gain expert knowledge of the principles and law relating to Goods and Service Tax and Customs Act.
IV	Risk Management and Derivatives	To explore knowledge in the areas of risk management process and derivative markets	To understand the risk management process and its applications, derivatives and its applications
IV	Accounting Standards	To enable the students to apply some key standards while preparing and presenting the financial statements Course.	To acquaint the students to understand the structure, process and organizational set up involved in evolving accounting standards in India
IV	Management Optimization Techniques	To convey basic principles and application of optimization tools of resource utilization	To provide an insight into optimal project implementation Techniques under deterministic and probabilistic conditions

**Department of Mathematics**

SI.No.	Course code	Course Name	Outcome
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1	MM1141	Methods of Mathematics	CO1 : Define maxima, minima, critical points and points of inflection. CO2 : Apply the concept of differentiation in real life situation. CO3: Explain logic and various proof techniques. CO4: Illustrate decomposition of an integer into prime factors
2	MM1221	Foundations of Mathematics	CO1: Describe the integration of a function and learn its physical interpretation through various examples. CO2: Demonstrate various applications of integration. CO3: Compute tangent lines to polar curves, arc length and area. CO4: Sketch conic sections such as parabola, ellipse and Hyperbola. CO5: Distinguish the cylindrical and spherical coordinate systems.
3	MM1341	Number theory and Multivariable Calculus	CO1: Explain the concept of congruence CO2: Analyse linear system of congruence equations CO3: Define the concept of limit, continuity, derivative of vector valued functions CO4: Illustrate various applications of multivariable calculus
4	MM1441	Theory of Matrices and multi variable calculus	CO1: Define the concepts of Matrix operations their algebraic properties, System of linear operations and their Matrix representation, GaussJordan Elimination CO2: Describe the concepts of Multiple integrals. CO3 : Apply double and triple integrals to solve real life problems. CO4 :Describe the concepts potential functions, line integrals and surface integrals.
5	MM1541	Real Analysis I	CO1: understand the fundamental properties of Real Numbers that corroborate the formal development of Real Analysis. CO2: demonstrate and understand the theory of real sequences and series. CO3: ability to check the convergence or divergence of different sequences and series. CO4: understand and perform simple proofs. CO5: understand the concepts related to limit of functions.
6	MM1542	Complex Analysis I	CO1: Understand the algebraic operations of complex numbers, complex functions. CO2: Understand the limits, continuity and differentiability of complex functions. CO3 :Analyze analytic functions and other elementary functions. CO4: Apply contour integration, Cauchy's theorem and Cauchy's integral formula.
7	MM1543	Abstract Algebra- Group Theory	CO1: apply algebraic ways of thinking. CO2 :examine abstractly about algebraic structures. CO3: analyse a given structure in detail. CO4: compare structures.
8	MM1544	Differential Equations	CO1: Solve linear-first order ordinary differential equations. CO2: Solve homogeneous and non-homogeneous linear differential equations with constant coefficients.
9	MM1545	Linear Algebra	CO1: Understand elementary concepts in vector space, subspace, linear transformation, eigenvalues and eigenvectors. CO2 :Find the bases and dimension of a vector space. CO3: Diagonalize various types of matrices
10	MM1551	Open Course:	CO1 :Getting acquainted with various number systems and

		Basic Mathematics	learning the basic operations on these numbers. CO2: Learning to perform basic tasks related to ratio and proportions. CO3: Getting exposed to basic statistical tools. CO4: To be able to mathematically formulate real life problems and thus solve them
11	MM1641	Real Analysis II	CO1 understand the concepts of continuity, differentiability and integrability, more rigorously than what we done in the previous calculus course. CO2: understand the fundamental properties of continuous functions on intervals. CO3: understand the basic theory of derivatives. CO4: get an exposure to the theory behind the integration
12	MM1642	Complex Analysis II	CO1: Understand Sequence, Series and Power Series Representation of Complex Functions CO2: Understand Singular Points, Zeros and Residue of Complex Functions CO3: Apply Taylor's Series, Laurent Series and Residue Theorem CO4: Understand Conformal Mapping, Linear Fractional Transformation and Cross-ratio.
13	MM1643	Abstract Algebra-Ring Theory	CO1 construct substructures. CO2 understand and prove fundamental results and solve algebraic problems using appropriate techniques. CO3 demonstrate insight into abstract algebra with focus on algebraic theories. CO4 develop new structures based on given structures.
14	MM1644	Integral Equations	CO1 Categorise and solve different integral equations using various techniques. CO2 Enable to apply Laplace Transforms to various industry related and applied problems. CO3 Analyse the properties of certain functions using Fourier series.
15	MM1661	Elective Course: Graph Theory	CO1 To define and understand the fundamental concepts of graph theory CO2 To apply the concepts and theorems that are treated in the course for problem-solving and proofs CO3 To write combinatorial proofs, including those using basic graph theory proof techniques such as minimal counterexamples, double counting, and Mathematical induction.
16	MM1645	Programming with Python	CO1 acquainted with writing and executing programmes in Python. CO2 able to use Python for basic math computing and visualising data.
17	MM1646	Project	CO1 Understand how mathematical research is being carried out by getting exposed to various proof techniques CO2 Develop the skill to use modern techniques that are helpful in gathering information from the web CO3 Develop the skills for interpreting the theories in different areas of the subject CO4 Develop the ability to defend the scientific assertions and findings CO5 Develop scientific temperament and perseverance
18	MM211	Linear Algebra	CO-1 Understand the concepts of vector spaces, subspaces, bases, dimension and their properties. CO-2 Acquire the skill in matrix manipulation and linear



			<p>modeling problems</p> <p>CO-3 Relate matrices and linear transformations</p> <p>CO-4 Compute eigenvalues and eigenvectors of linear transformations and use them in applications.</p> <p>CO-5 Enhance the ability to reason mathematically and prepare them for research.</p> <p>CO-6 Apply the knowledge to many fields in engineering, statistics and computer science</p>
19	MM212	Real Analysis	<p>CO-1: Understand the concepts and results in analysis and apply these results to other branches of mathematics and real world applications.</p> <p>CO-2: Demonstrate the importance of Riemann Stieltjes Integrals, Riemann condition, sufficient condition for the existence of Riemann Stieltjes integrals . CO-3: Analyse the concepts of sequence of functions, its properties and to what extent this property is transferred to its limit functions.</p> <p>CO-4: Understand and Demonstrate the concepts of multivariable differential calculus.</p> <p>CO-5: Enhance the ability to apply the concepts in geometrical situation.</p>
20	MM213	Ordinary Differential Equations and Calculus of Variations	<p>CO-1 To understand the concepts of Ordinary Differential Equations.</p> <p>CO-2 Classify the problems and recognize appropriate methods to solve differential equations.</p> <p>CO-3 Apply the methods of solving differential equations to real-world problems.</p> <p>CO-4 Find the extremum of an integral <math>\int f(x, y, y') dx</math>, using Euler's formula. CO-5 Solve an isoperimetric problem.</p>
21	MM214	Basic Topology	<p>CO-1 Understanding metrics as a generalization of distance in real and complex plane and discuss the basic concepts of metric spaces.</p> <p>CO-2 Compare the concepts of open and closed sets of real line and complex plane to abstract spaces</p> <p>CO-3 To develop the students ability to handle abstract ideas of mathematics and mathematical proofs</p> <p>CO-4 Construction of topological spaces with desired properties.</p> <p>CO-5 Improve skills in mathematical reading, writing and communication.</p> <p>CO-6 Appreciate the importance of topology as a fundamental subject in mathematics, with connections to many other branches of the knowledge</p>
22	MM 221	Abstract Algebra	<p>CO-1 Get familiarised with different algebraic structures.</p> <p>CO-2 Understand the Fundamental Theorem of finitely generated abelian groups and list abelian groups of finite orders.</p> <p>CO-3 Apply Sylow's Theorems to classify simple groups.</p> <p>CO-4 Discuss different field extensions and examine the existence of zeros of irreducible polynomials over extension fields.</p> <p>CO-5 Solve polynomial equations by radicals along with the understanding of ruler and compass constructions.</p> <p>CO-6 Establish the connection between the concept of field extensions and Galois Theory.</p>

23	MM 222	Measure Theory	CO-1 Create a frame work to generalise integration theory. CO-2 Understand why and for what the theory of measures was introduced. CO-3 Formulate complex problems using appropriate measure theory techniques. CO-4 Apply the theory of measures to solve a variety of problems at an appropriate level of difficulty. CO-5 Understand the notion of different types of convergence. CO-6 Apply the theory of measures in probability theory
24	MM 223	Partial Differential Equations and Integral Equations	CO-1 To understand the concepts of PDE's. CO-2 To solve the real world problems using PDE's. CO-3 To solve the wave equation and the heat equation. CO-4 Understand the concepts, methods and structures of integral equation theory. CO-5 To solve mathematical problems using techniques from integral equation theory.
25	MM 224	Advanced Topology	CO-1 Understand more about point-set topology and the concepts of algebraic topology CO-2 Apply abstract algebra to understand the topological properties. CO-3 Construct new topological spaces from existing ones and comparing their properties. CO-4 Learn to use algebraic techniques to prove algebraic properties such as funda - mental group and Brouwer fixed point theorem. CO-5 Gain experience in applying algebraic topology to solve problems in other branches of mathematics and to carry out advanced research work in pure mathematics. CO-6 To develop the students ability to handle abstract ideas of mathematics and mathematical proofs in topology. CO-7 Develop capacity for mathematical reasoning through analyzing, proving and explaining concepts from algebraic topology.
26	MM 231	Complex Analysis	CO-1 Establish relationship between analytic functions and power series and to evaluate the radius of convergence of the power series CO-2 Understand the concepts of Mobius transformations and apply the concepts to solve problems CO-3 Solve problems related to integrals CO-4 Classify Singularities and to find residues. CO-5 Characterise the Conformal maps using Mobius transformations
27	MM 232	Functional Analysis - I	CO-1 Understand the basics of normed linear spaces, bounded linear maps CO-2 Enable the students to realise different types of spectra and their relevance CO3 Create an idea about different types of convergence of sequences in normed spaces and their relations. CO-4 Develop the concepts of dual spaces and reflexive space. C O-5 Enable the student to apply the knowledge of functional analysis to solve mathematical problems
28	MM 233	ELECTIVE – I: Operations Research	CO-1 Understand the characteristics of different types of decision making approaches and tools to be used in each type. CO-2 Build and solve Transportation problems. CO-3 Build and solve Assignment problems.

			CO-4 Apply techniques of PERT and CPM for planning, scheduling and controlling of projects. CO-5 Making and develop critical thinking and objective analysis of different game problems.
29	MM 234	ELECTIVE-II: Graph theory	CO-1 Explain the concepts of graph isomorphism, cut-vertices, blocks, connectivity and demonstrate the relation between groups and graphs CO-2 Determine whether a graph is Eulerian or Hamiltonian and to establish the relation between Hamiltonian walks and numbers CO-3 Describe the properties of strong digraphs, tournaments, matching and factorizations CO-4 Apply the concepts of vertex coloring, edge coloring and Ramsey number of graphs for solving real life problems CO-5 Understand the concepts of center of graphs, different distant vertices, locating numbers, Detour and directed distance CO-6 Solve real life problems using the concepts of graph theory and use these concepts in research area in related topics
30	MM 241	Analytic Number Theory	CO-1 Find whether a number is a quadratic residue or non-residue CO-2 Acquire knowledge about different arithmetical functions and work with problems related to arithmetical functions CO-3 Understand the concept of Diophantine equations and existence of solutions of the Diophantine equation CO-4 Get an idea about algebraic numbers, algebraic integers and their properties
31	MM 242	Functional Analysis - II	CO-1 Understand the basic concepts and fundamental principles of inner product space. CO-2 Develop the concepts of compact linear operator and its spectrum. CO-3 Realise the geometry of Hilbert space. CO-4 Create an idea of compact linear operators on Hilbert space and the behaviour of spectrum of such operators. CO-5 Apply the spectral analysis of compact self-adjoint operators for finding the solution of integral equations. CO-6 Application to many areas of mathematics such as classical analysis, probability theory, approximation and optimization theory.
32	MM 243	ELECTIVE –III: Advanced Algebra	CO1: Understand the fundamental concepts of field extensions, including algebraic and transcendental extensions, and analyze their properties. CO2: Apply the principles of straight-edge and compass constructions and comprehend the concepts of splitting fields and algebraic closures. CO3: Explore the theory of cyclotomic fields and their role in classical problems, including the roots of unity and field extensions. CO4: Differentiate between separable and inseparable extensions, and establish the existence and uniqueness of finite fields. CO5: Develop proficiency in working with cyclotomic polynomials and their extensions, linking them to the fundamental theorem of Galois theory. CO6: Apply the fundamental theorem of Galois theory to solve

			problems related to finite fields, automorphism groups, and their applications.
33	MM 244	ELECTIVE – IV : Advanced Complex Analysis	CO-1 Draw connections among ideas between space of continuous functions and space of analytic functions CO-2 Formulate an analytic function with given zeros of infinite number and given multiplicity CO-3 Apply Weierstrass Factorization Theorem to factorise certain complex valued functions CO-4 Identify the equivalent conditions of simply connected regions CO-5 Describe the method of extending the domain of analytic functions CO-6 Describe Harmonic functions on a disk
34	MM 1131.7	Differential calculus of one variable and complex numbers	CO1 Compute the limits and derivatives. CO2 Explain the concept rate of change. CO3 Analyse function behaviour. CO4 Understand basic concepts of complex numbers.
35	MM 1231.7	Integral calculus of one variable	CO1 Explain the relationship between area and integral. CO2 Compute integrals. CO3 Compute area and volume using integration. CO4 Understand basic concepts of co ordinate geometry and some special functions.
36	MM 1331.7	Differential equations, Linear equations, Fourier series and Theory of equations	CO1 Describe a first order differential equation and solve it. CO2 Analyse the consistency of system of linear equations and solve it. CO3 Understand linear transformation and eigen values. CO4 Write the Fourier series of a periodic function. CO5 Understand the nature of roots fo polynomials and apply find approximate solutions.
37	MM 1431.7	Abstract algebra, Vector algebra, Vector calculus and Laplace Transforms	CO1 Understand basics of group theory with examples and describe elementary properties of groups. CO2 Understand and apply basic operations among vectors. CO3 Apply vector operators on scalar and vector point functions. CO4 Apply Laplace transform on different functions.
<b>SL.NO</b>	<b>Programme CODE</b>	<b>Program</b>	<b>OUTCOME</b>
1.	220	B.Sc Mathematics	<p>PSO1 Acquire knowledge in functional areas of Mathematics and apply in all the fields of learning.</p> <p>PSO2 Equip the student with skills to analyze problems, formulate a hypothesis, evaluate and validate results, and draw reasonable conclusions thereof.</p> <p>PSO3 Employ mathematical ideas encompassing logical reasoning, analytical, numerical ability, theoretical skills to model real-world problems and solve them. PSO4 Develop critical thinking, creative</p>

			<p>thinking, self confidence for eventual success in career.</p> <p>PSO5 Analyze, interpret solutions and to enhance their Entrepreneurial skills, Managerial skill and leadership</p> <p>PSO6 Recognize the need for life long learning and demonstrate the ability to explore some mathematical content independently.</p> <p>PSO7 To prepare the students to communicate mathematical ideas effectively and develop their ability to collaborate both intellectually and creatively in diverse contexts. PSO8 Imbibe effective scientific and/or technical communication in both oral and writing.</p> <p>PSO9 Continue to acquire relevant knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in mathematical sciences.</p>
2	620	M.Sc Mathematics	<p>PSO 1 Interconnect concepts in various fields of Mathematics. PSO 2 Enrich mathematical concepts and encourage research.</p> <p>PSO 3 Able to convey mathematical concepts to the society.</p> <p>PSO 4 Acquire Knowledge about scientific method and skills in mathematical computations.</p> <p>PSO 5 Utilize the domain knowledge to face real life problems.</p> <p>PSO 6 Enhancement of critical thinking skills and attitudes to become a thinker and professional.</p> <p>PSO 7 Creating academic excellence in mathematics and allied subjects.</p> <p>PSO 8 Explore and discover new fields in different dimensions.</p>
3	241	B.Sc Chemistry and Industrial Chemistry	<p>PSO1 To provide strong foundation in Mathematics PSO2 To acquaint students with the essential</p>

			<p>mathematical methods to analyse functions</p> <p>PSO3 To make students capable of solving polynomial equations and differential equations</p> <p>PSO4 To enable students to apply the concepts such as differentiation and integration</p>
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## PROGRAMME OUTCOME AND COURSE OUTCOME

### **PROGRAMME SPECIFIC OUTCOMES**

Sl. No	Programme CODE	Program	OUTCOME
1	PSO 1	B.A. History	Make logical oral presentation of factual and theoretical knowledge of historical events and changes
2	PSO 2	B.A. History	Realize the background of our religion, customs institutions, administration and so on.
3	PSO3	B.A. History	Recognize the present existing social, political, religious and economic conditions of the people.
4	PSO4	B.A. History	Evaluate relationship between the past and the present is lively presented in the history.
5	PSO5	B.A. History	Develop practical skills helpful in the study and understanding of historical events such as draw historical maps, charts, diagrams etc. and prepare historical models, tools etc.
6	PSO 6	B.A. History	To produce good Historians and Researchers who can unravel past histories and analyse various social problems.
7	PSO 7	B.A. History	Realize the background of our religion, customs institutions, administration and so on.
8	PSO8	B.A. History	Recognize the present existing social, political, religious and economic conditions of the people.
9	PSO 9	B.A. History	Evaluate relationship between the past and the present is lively presented in the history.
10	PSO 10	B.A. History	Develop practical skills helpful in the study and understanding of historical events such as draw historical maps, charts, diagrams etc. and prepare historical models, tools etc.

## COURSE OUTCOME

### B.A. HISTORY

Sl. No	COURSE CODE	COURSE	OUTCOME
1	HY 1141	Methodology and Perspectives of Social Sciences	CO 1 – The course intends to familiarize the students with the broad contours of social sciences and its methodology. CO 2 – To familiarize the main concerns of social science disciplines to articulate the basic terminologies and theories prevalent in concerned disciplines, and to critically read popular and periodical literature from a social science perspective.
2	HY 1131.1	History of Modern India (1857-1900)	CO 1 – Provides a background on different theories of the Revolt of 1857, and its positive and negative impacts CO 2 – Introduces different social and religious movements prevalent at that time CO 3 – Introduces the concepts and theories of Indian Nationalism
3	HY 1241	Cultural formation of the Pre-Modern World	CO 1 – To enable the students to engage with conceptual and general issues regarding culture and civilization of the ancient period CO 2 – To inculcate an awareness among the students about the cultural heritage of mankind. CO 3 – To have a sound knowledge about changes that took place among the major cultures of world civilizations. CO 4 – To give an idea about the harmonious existence of the different sections of the people
4	HY 1231.3	History of Modern India (1901-1920)	CO 1 – Explains the crisis within the Indian National Congress during the early 1900s CO 2 – Describes the impact of First World War on Indian Nationalism CO 3 – Introduction to the advent of Gandhi and the Gandhian ideologies
5	HY 1341	Informatics	CO 1 – To update and impart basic skills in informatics relevant to the emerging knowledge society and also to equip the students effectively to utilize the digital knowledge of their course CO 2 – To review the basic concepts and functional knowledge in the field of informatics CO 3 – To impart functional knowledge in a standard Office package and popular utilities and to create awareness about social issues and concerns in the use of digital technology CO 4 – To develop the skills to enable students to use digital knowledge resources in learning
6	HY 1341	Evolution of Early Indian Society and Culture	CO 1 – To analyze the salient features of prehistoric and proto-historic culture in India and to trace the evolution of Indian culture with special reference to the society and polity of ancient period CO 2 – To familiarize the students with the heritage of India
7	HY 1331.5	History of Modern India (1921-1947)	CO 1 – Introduction to the advent of Gandhi in the political scene of India CO 2 – Provides basic knowledge on the emergence of Socialist ideas and revolutionary movements CO 3 – Explains the effects of Second World War on Indian Freedom Struggle, Indian Independence Act, and framing of Indian Constitution

8	HY 1441	Medieval India : Socio-cultural Processes	CO 1 – Equip the students to have an idea on the social, cultural and administrative features during the medieval period CO 2 – To familiarize the students, the processes that made the socio-cultural specificities possible and to make the students, aware of the linkage effect of this period in subsequent centuries. CO 3 – Feature: Political (Dynastic) history as such is avoided, however administrative system prevailed in the period concerned is included
9	HY 1442	History of Modern World - Part I	CO 1 – To familiarize the students with the changes in the history of the modern world and to analyze the agenda of the imperialistic powers in Latin America and Africa. CO 2 – To create an understanding among students about the liberal ideas and freedom struggles
10	HY 1431.7	History of Contemporary India (after 1948)	CO 1 – Introduction to the integration of Indian States CO 2 – Provides brief account on India's foreign policy and India's role in the world CO 3 – Throws light into the Post-Nehruvian period - educational and cultural changes and new social movements
11	HY 1541	Major Trends in Historical Thought and Writings	CO 1 – To enable the students to understand the history of historical writings and to intellectually equip the students to evaluate the works in the light of new theories and concepts
12	HY 1542	Colonialism and Resistance Movements in India	CO 1 – To review the circumstances that led to the establishment of colonialism in India CO 2 – To bring out the impact of colonial rule in India with particular reference to socio- religious, political and economic fields CO 3 – To analyze the genesis and progress of the resistance movements against the British rule
13	HY 1543	History of Modern World – Part II	CO 1 – To trace the significance of the unification movements in Italy and Germany that paved the way for the beginning of a new epoch CO 2 – To give an idea about the first and second world wars and to evaluate the achievements of the international organizations
14	HY 1544	History of PreModern Kerala	CO 1 – Understanding the early historic Kerala and the formations of “nadas” and “swaropams” CO 2 – Provides insight into the rise of new kingdoms in Kerala
15	HY 1545	Making of Indian Nation	CO 1 – Provides thorough knowledge on the entire aspects of the struggle for Indian independence CO 2 – Analyzes the role of Gandhiji in freedom 52 struggles
16	HY 1551.1	Empowerment of Women with special reference to India	CO 1 – To understand the concept, relevance and scope of women empowerment CO 2 – Introduces to gender studies, important legislations for women in India CO 3 – To understand and realize the changing roles and status of women in historical perspective
17	HY 1641	Making of Modern Kerala	CO 1 – Equips students with knowledge on colonial powers and their interventions on Kerala society CO 2 – Explains early political movements, agitations for responsible government, and the formation of the state of Kerala
18	HY 1642	Major Trends in Indian Historical Thought and Writings	CO 1 – To enable the students to understand the origin and development of historical writings in India CO 2 – To locate major historical works in Indian history CO 3 – To create an awareness among the students about the



			influence of ideas and theories, trends and concepts in Indian historical writings
19	HY 1643	Contemporary India	CO 1 – To provide the students with a graphic account of the circumstances that led to the formation of Indian Union CO 2 – To understand the challenges faced by independent India and the bold measures initiated after independence CO 3 – To evaluate the achievements of contemporary India with special reference to science and information technology
20	HY 1644	The Twentieth Century Revolutions	CO 1 – To introduce the students four major revolutions of the 20th century –Russian, Chinese, Vietnamese and Cuban CO 2 – To acquaint the students about the legacy of these revolutions and familiarize them with the nature, scope and significance of these revolutions in the present context
21	HY 1651.4	Empowerment of Women with special reference to India	CO 1 – To understand the concept, relevance and scope of women empowerment CO 2 – Introduces to gender studies, important legislations for women in India CO 3 – To understand and realize the changing roles and status of women in historical perspective
22	HY 1651.4	Project	CO 1 – Equips students to identify an issue or topic of their interest within the subject, conducting a study in a systematic and scientific way, and to prepare and present the report in a structured manner

## **DEPARTMENT OF CHEMISTRY**

### **PROGRAMME OUTCOME**

The First-Degree Programme in Chemistry & Industrial Chemistry covers three academic years consisting of six semesters and aims to train the students on basic elements of chemistry and industrial chemistry with particular relation to chemical industries, current situation of raw materials and energy, products of the chemical industry, the vocabulary of industrial chemical processes, reaction kinetics, mass and heat transfer, thermodynamics, material data, basic organic and inorganic chemicals, polymeric materials and chemical processes used in production and environmental chemistry. The syllabus has been designed to stimulate the interest of students in chemical processes in various industries and has been prepared so as to equip the students with a potential to contribute to the academic and industrial requirements of the society.

### **PROGRAMME SPECIFIC OUTCOME**

The main objective is to provide to the students an in-depth understanding of the basic concepts of chemistry and how it is applied in industry for the production of bulk materials. this programme attempts to provide a detailed knowledge of the terms, concepts, methods, principles and experimental techniques of chemistry and industrial chemistry.

### **COURSE OUTCOME**

The First-Degree Programme in Chemistry & Industrial Chemistry comprises of 14 core courses, 10 vocational courses, 1 open course, 1 elective course and 1 project along with 1 complementary course in mathematics and language courses.

SEMESTER	Course Code	Course Title	Course Outcome
<b>I</b>	IC 1141	<b>Core Course I</b> Inorganic Chemistry I	The course provides a preliminary concept of chemistry that familiarizes students with theoretical aspects of atomic structure, electronic configuration and periodicity, analytical principles and chemical bonding.
	IC 1121	<b>Foundation course I</b> Methodology and Informatics	The course aims at acquaint the students with the methodology, perspectives and importance of science in the development of culture. The student will learn the application of scientific methods in chemistry independently.
<b>II</b>	IC 1241	<b>Core Course III</b> Environmental Studies	The course familiarizes the students with the environment and its interaction with the living system. It also includes concepts such as ecosystem bio-diversity, environmental pollution, social issues etc.
	IC 1142 IC 1242	<b>Core Course II</b> Chemistry Lab I & <b>Core Course IV</b> Chemistry Lab II	Gives training to the students in qualitative inorganic analysis using of a mixture containing two acidic and two basic radicals by microscale techniques and preparation of some inorganic complexes.
	IC 1221	<b>Foundation Course II</b> Foundation Course in Inorganic Chemistry	The course provides the students an idea regarding bonding, nano chemistry and nuclear chemistry.
<b>III</b>	IC 1371	<b>Vocational Course I</b> Industrial Chemistry I	The students understand the industrial aspects of inorganic and organic chemistry, industrially important inorganic materials, chemical industries in Kerala and basics of polymer chemistry.
	IC 1341	<b>Core Course V</b> Organic Chemistry I	The students learn the behaviour of aliphatic and aromatic compounds and gets an overall idea of mechanism of reactions and hybridisations.
	IC 1342	<b>Core Course VI</b> Physical Chemistry I	The course gives an awareness regarding the different states of matter, thermodynamics and group theory.
<b>IV</b>	IC 1471	<b>Vocational Course III</b> Industrial Chemistry II	The course aims to provide knowledge about unit process, unit operation, fuels, fluid flow, soaps and detergents, food processing and dyes
	IC 1441	<b>Core Course VIII</b> Inorganic Chemistry III	The students understand the coordination of transition metals, theories of coordination, organometallic compounds and role of metal ions in biological systems.
	IC 1442	<b>Core Course IX</b> Physical Chemistry II	The course introduces the students to the quantum mechanics, thermodynamics and statistical thermodynamics, spectroscopic and non-

			spectroscopic methods of studying molecules, colloids and adsorption.
	IC 1372  IC 1472	<b>Vocational Course II</b> Industrial Chemistry Lab I & <b>Vocational Course IV</b> Industrial Chemistry Lab II	Students understand the preparation of organic compounds, general methods of separation and purification of organic compounds, thin layer chromatography, determination of saponification value and estimation of nitrogen.
	IC 1343  IC 1443	<b>Core Course VII</b> Chemistry Lab III & <b>Core Course X</b> Chemistry Lab IV	Students learn different volumetric techniques for qualitative analysis like acidimetry and alkalimetry, permanganometry, iodometry and complexometric titrations. Students are also introduced to potentiometric and conductometric titrations, critical solution temperature, surface tension of binary mixture, viscosity of binary mixtures, partition coefficient and transition temperature of a salt hydrate.
<b>V</b>	IC 1541	<b>Core Course XI</b> Organic Chemistry II	The students get an interesting detail regarding the stereochemistry of organic compounds and the preparation and properties of organic compounds.
	IC 1571	<b>Vocational Course V</b> Industrial Chemistry III	The course aims at providing the students a knowledge about the organic synthesis, rearrangements, synthetic polymers, dyes, organic sulfur and nitrogen compounds.
	IC 1572	<b>Vocational Course VI</b> Industrial Chemistry IV	The course involves heterocyclic compounds and organic spectroscopy.
	IC 1572  IC 1672	<b>Vocational Course VII</b> Industrial Chemistry Lab III & <b>Vocational Course X</b> Industrial Chemistry Lab VI	Students learn to determine acetic acid in vinegar, alkali content in antacid, COD of water sample and hardness of water. They also understand the colorimetric estimation of iron and chromium.
	IC 1551.1	<b>Open Course</b> Essentials of Chemistry	The course provides an insight into the certain fundamental aspects in chemistry and application of chemistry in daily life. It gives basic idea about structure of atom, nuclear chemistry, polymers, role of chemistry in biological processes and applications in drugs, dyes and soap.
<b>VI</b>	IC 1641	<b>Core Course XIII</b>	The course deals with kinetics of reactions, chemical and ionic equilibria, phase equilibria,

		Physical Chemistry III	binary liquid systems, catalysis and photochemistry, electrical conductance and electromotive force. The student gets a clear idea of conductance, EMF, rate of reactions and binary liquid mixtures.
	IC 1671	<b>Vocational Course VIII</b> Industrial Chemistry V	The major objective of the course is to study the processes in organic chemical manufacture, environment and air pollution.
	IC 1672	<b>Vocational Course IX</b> Industrial Chemistry VI	The course deals with control and monitoring of air pollutants and water pollution, industrial waste water treatment and other forms of pollution.
	IC 1542 IC 1642	<b>Core Course XII</b> Chemistry Lab V & <b>Core Course XIV</b> Chemistry Lab VI	Students learn to carry out quantitative analysis using gravimetric techniques, qualitative analysis of organic compounds, determination of physical constants, chromatography and organic estimation.
	IC 1651.3	<b>Elective Course</b> Polymer Chemistry	The course provides the students a basic knowledge of polymers, methods of polymerisation and experimental methods.
	IC 1661	<b>Project</b>	Students undergo a training in a chemical factory and submit a report of it. The students get a hands-on experience from a reputed industry.