

M.Sc. Mathematics

The Program Outcomes (POs) of the M.Sc., Mathematics Programme are as follows:

PO1. Understanding Ability Enhancement:

To enable students to read and demonstrate an understanding of mathematical and/or statistical research literature.

PO2. Problem Solving Ability Enhancement:

Students will be able to identify mathematical and computational methods in order to solve comprehensive problems.

PO3. Deductive Thinking:

Students will be able to read and write logical arguments in order to prove advanced mathematical results.

PO4. Effective Communication:

Students will be able to effectively communicate mathematical concepts, problems and their solutions in written and oral form. Also exhibit the superior presentation skill in Project writing and presentations.

PO5. Social Service:

To learn to apply Mathematics in real life situations aiming at service to the society.

Mathematics majors should:

PSO 1: Develop research level thinking in the field of pure and applied Mathematics.

PSO 2: Develop inter-disciplinary approach of learning between mathematics and other discipline.

PSO 3: Demonstrate skills approach towards CSIR-Net, SET examinations.

PSO 4: Learn about applications of Mathematics in the field of Graph Theory, Fluid Dynamics, Partial Differential equations, Integral Equations and Stochastic Processes and gain experience

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	DISCRETE MATHEMATICS	M744	To extend student's Logical and Mathematical maturity and ability to deal with abstraction and to introduce most of the basic terminologies used in computer science courses and application of ideas to solve practical problems.	<ul style="list-style-type: none">• Solve discrete mathematics problems that involve: computing permutations and combinations of a set, fundamental enumeration principles and graph theory.• Demonstrate a working knowledge of set notation and elementary set theory, recognize the connection between set operations and logic, and prove elementary results involving sets.• Formulate and interpret statements presented in Boolean logic. Reformulate statements from common language to formal logic.• Apply truth tables and the rules of propositional and predicate	Global

				calculus.	
2	REAL ANALYSIS	M741	To study the real number system, Functions of Bounded Variation and Rectifiable, Riemann–Stieltjes integral, Lebesgue Integral and Square Space.	<ul style="list-style-type: none"> • To know about Rectifiable Curves and Rectifiable Curves. • To understand the concept of Lebesgue integrals on unbounded intervals as limits of integrals on bounded intervals. • To know and understand about Measurable functions. 	Global
3	ORDINARY DIFFERENTIAL EQUATIONS	M742	To study the Differential equation of higher order, to find the power series solution of special type of Differential equations, to solve the system of linear Differential equations, to study existence and uniqueness of the solutions, boundary value problems.	<ul style="list-style-type: none"> • Investigate the qualitative behavior of solutions of systems of differential equations. • To learn how the physical phenomena are modeled by differential equations and dynamical systems. • Implement solution methods using appropriate technology. 	Global
4	MATHEMATICAL STATISTICS	M743	To study and apply sampling theory, significance tests, estimation, testing of hypothesis and linear models.	<ul style="list-style-type: none"> • To know about sampling and the role of sampling distributions. • To know about different methods of finding estimators, • To find confidence intervals and use it for testing of Hypothesis. • To define and illustrate linear 	Global

				models.	
5	CALCULUS OF VARIATIONS AND INTEGRAL EQUATIONS	M744	The aim of the course is to introduce to the students the concept of calculus of variation and its applications and to introduce various types of integral equations and how to solve these equations.	<ul style="list-style-type: none"> • Students can able to understand the concept of calculus of variation and various types of integral equations. • Students have a knowledge on how to solve these integral equations. 	Global
6	DISCRETE MATHEMATICS	M744	To extend student's Logical and Mathematical maturity and ability to deal with abstraction and to introduce most of the basic terminologies used in computer science courses and application of ideas to solve practical problems.	<ul style="list-style-type: none"> • Solve discrete mathematics problems that involve: computing permutations and combinations of a set, fundamental enumeration principles and graph theory. • Demonstrate a working knowledge of set notation and elementary set theory, recognize the connection between set operations and logic, and prove elementary results involving sets. • Formulate and interpret statements presented in Boolean logic. Reformulate statements from common language to formal logic. • Apply truth tables and the rules of propositional and predicate calculus. 	Global

7	SKILL ENHANCEMENT I - ALGEBRA	M744	To empower students to crack competitive examinations such as NET, SET and TRB and to complement the theoretical content of the subject with exercise problems.	To understand the concept of Groups, normal subgroups, permutation groups, rings and polynomial rings to solve related problems.	Global
8	ADVANCED LINEAR ALGEBRA	M840	To give the students a thorough knowledge of the various aspects of Linear Algebra. To train the students in problem-solving as a preparatory for competitive exam.	<ul style="list-style-type: none"> • To understand linear transformations and to represent in matrix form. • To find minimal polynomial and characteristic polynomial of linear transformation. • To know about bi-linear and Jordan canonical forms. 	Global
9	PARTIAL DIFFERENTIAL EQUATIONS	M841	To develop skills in solving partial differential equations.	<ul style="list-style-type: none"> • Recognize the major classification of PDEs and the qualitative differences between the classes of equations. • Be familiar with the modeling assumptions and derivations that lead to PDEs. • Be competent in solving linear PDEs using classical solution methods 	Global

10	ADVANCED GRAPH THEORY	M842	To understand the concept of graphs, sub graphs, trees, connectivity, Euler tour, Hamilton cycle, matching, colouring of graphs, independent set, cliques, vertex colouring and planar graphs.	<ul style="list-style-type: none"> • The graph theoretical concepts that helps to model real life situations. • To disseminate the varied types of graphs. • To explicate the applications of planarity and colourability. • To motivate to do research in the various field of Graph Theory. 	Global
11	CLASSICAL MECHANICS	M843	To study mechanical systems under generalized coordinate, virtual work, energy and momentum, also to study the mechanics developed by Newton, Lagrange, Hamilton and Jacobi.	<ul style="list-style-type: none"> • To understand the basic concepts of Lagrangian and Hamiltonian approaches in classical mechanics. • To observed different applications of these concepts in the mechanical and electromagnetic fields. • To learn the concept of Angular momentum, Kinetic energy and Moment of inertia of a particle. 	Global
12	MATHEMATICAL MODELS IN BIOLOGY	M844A	This Course aims to explore the potential of Mathematical Modeling among the Students and in emphasizing the role of Mathematical Models in Biology and Medicine.	<ul style="list-style-type: none"> • Describe standard modeling procedures, which involve observations of a natural system, the development of a numeric and or/analytical model, and the analysis of the model through analytical and graphical solutions and/or statistical analysis. • Distinguish between two species and multi species models. • Distinguish between stochastic 	Global

				and deterministic models.	
13	FUZZY MATHEMATICS	M844B	This course aims to introduce fuzzy graphs, fuzzy relations, fuzzy logic and fuzzy composition and initiate the learners into the application of these ideas.	<ul style="list-style-type: none"> • To understand the basic concepts of Crisp sets and Fuzzy sets • To observe the Constructions from sample data • 3. To learn the concept of Operations on Fuzzy sets 	Global
14	SKILL ENHANCEMENT II – LINEAR ALGEBRA	M844C	To empower students to crack competitive examinations such as NET, SET and TRB and to complement the theoretical content of the subject with exercise problems.	<ul style="list-style-type: none"> • Analyze finite and infinite dimensional vector spaces and subspaces over a field and their properties, including the basis structure of vector spaces. • Use the definition and properties of linear transformations and matrices of linear transformations and change of basis, including kernel, range and isomorphism. • Compute with the characteristic polynomial, eigenvectors, eigenvalues, eigen spaces, as well as the geometric and the algebraic multiplicities of an eigenvalue and apply the basic diagonalization result. Compute inner products and determine orthogonality on vector spaces, including Gram-Schmidt orthogonalization. 	Global

15	<u>Comprehensive Algebra</u>		To empower students to crack competitive examinations such as NET, SET and TRB and to complement the theoretical content of the subjects with exercise problems.	<ul style="list-style-type: none"> • To know about extension fields and splitting fields. • To connect groups with graphs and understanding about Hamiltonian graphs. • To know and understand Algebraic coding Theory and Galois Theory. 	Global
16	<u>R Language for Statistics</u>		To introduce to the students the novel applications of R language and to give them a hands on experience of working with data.	<ul style="list-style-type: none"> • To know about probability distribution function and different types of distributive functions. • To know and understand about Tests of Hypothesis 	Global
17	<u>Formal Languages and Automata</u>		To obtain knowledge about finite automata, regular expressions and regular grammars, properties of context free languages	<ul style="list-style-type: none"> • To know about finite automata, regular expressions and regular grammars, • To know and understand about properties of context free languages. 	Global
18	TOPOLOGY	M947	To develop student's topological and proof writing skills which are essential in the study of advanced mathematics, understand the concepts of topological spaces, analyze and synthesize proofs,	<ul style="list-style-type: none"> • To define and illustrate the concept of topological spaces and continuous functions. • To define and illustrate the concept of product topology. 	Global

			<p>understanding the concepts of connectedness and compactness.</p>	<ul style="list-style-type: none"> • To prove a selection of theorems concerning topological spaces, continuous functions and product topologies. • To define connectedness and compactness and prove a selection of related theorems. • To define and illustrate the concepts of Countability and separation axioms. 	
19	OPERATIONS RESEARCH	M948	<p>To obtain knowledge on linear programming problems, queuing models, inventory models, dynamic programming and nonlinear programming problems.</p>	<ul style="list-style-type: none"> • Place the primal linear programming problem into standard form and use the simplex method or revised simplex method to solve it. • Be able to modify a primal problem and use the fundamental insight of linear programming to identify the new solution or use dual simplex method. • To understand the concept of complementary slackness and its role in solving primal/dual problem pairs. • To Formulate and solve a number of classical linear programming problems such as dynamic programming problem and non-linear programming problem. 	Global

20	FLUID DYNAMICS	M949	This course aims to provide basic knowledge in Kinematics of fluids in motion, equations of motion of a fluid, three dimensional flows and viscous flows.	<ul style="list-style-type: none"> • To have an in-depth study of basic knowledge in Kinematics of fluids in motion. • To understand the meaning of two dimensional and three dimensional flow and related problems. 	Global
21	DIFFERENTIAL GEOMETRY	M950A	This course introduces space curves and their intrinsic properties of a surface and geodesics. Further the non – intrinsic properties of surfaces are explored.	<ul style="list-style-type: none"> • To understand space curves, Curves between surfaces, metrics on a surface, fundamental form of a surface and Geodesics. • To study these concepts with related examples. 	Global
22	NONLINEAR DIFFERENTIAL EQUATIONS	M950B	To learn and apply phase plane analysis and stability techniques to problems in Science and technology.	<ul style="list-style-type: none"> • To understand phase plane analysis and stability techniques to problems in Science and technology. • To study these concepts with related examples. 	Global
23	SKILL ENHANCEMENT III – REAL ANALYSIS	M950C	Empowering students to crack competitive examinations such as NET, SET and TRB. To complement the theoretical content of the subject with exercise problems.	<ul style="list-style-type: none"> • To crack competitive examinations such as NET, SET and TRB. • To apply the theoretical content of the subject with exercise problems. 	Global

24	<u>LaTeX for Mathematics</u>	M9552X1	To train students in the preparation of projects and dissertations using LaTeX.	<ul style="list-style-type: none"> Trained in the preparation of projects and dissertations using LaTeX. 	Global
25	<u>Mathematics for Competitive Examinations – I (IDC)</u>	M9552CE	To prepare the students for competitive examinations	After completing the course, the students Prepared for all competitive examinations.	Global
26	Complex Function Theory	M1043	To study the Maximum Principle, Schwarz Lemma, Evaluation of Certain Integrals, Analytic Continuation, Representation of Meromorphic and Entire Functions and Mapping Theorems.	<ul style="list-style-type: none"> To understand the principle of Maximum Modulus and to prove Hadamard's theorem, Schwarz's lemma, Liouville's theorem and to know about doubly periodic and entire functions. To evaluate certain integrals, to recognize and understand Meromorphic functions and Infinite product of analytic functions. To learn about mapping theorems. 	Global
27	Functional Analysis	M1044	To provide students with a strong foundation in functional analysis, focusing on spaces, operators and fundamental theorems. To develop student's skills and confidence in mathematical analysis and proof techniques.	<ul style="list-style-type: none"> To understand spaces, operators and fundamental theorems. To develop student's skills and confidence in mathematical analysis and proof techniques. To learn about Banach Spaces and Hilbert Spaces. 	Global

28	Difference Equations	M1045	To introduce the process of discretization, discrete version of Differential Equations, oscillation and the asymptotic behavior of solutions of certain class of difference equations. Solving difference equations using z-transforms is stressed.	<ul style="list-style-type: none"> • To understand General Theory of Linear Difference Equations. • To solve difference equations using z-transforms. 	Global
29	Stochastic Processes	M1046	To introduce to the students the basic ideas of Stochastic processes, Markov chains, Markov process and Renewal process and to motivate research in these areas.	<ul style="list-style-type: none"> • To understand the concept of stochastic processes, Markov chains, Markov process and Renewal process. • To know about Simple Markovian Queueing models 	Global
30	Reliability Theory and Queuing Process	M1046 B	To introduce the subject of Reliability Engineering which provides the working knowledge to determine the Reliability of a System and suggests approaches to enhance System Reliability? Also includes Queuing theory, a Mathematical Approach to Analysis of Waiting Lines.	<ul style="list-style-type: none"> • To understand the concept of System Reliability and to know about methods of solving complex systems involving mixed configurations. • To improve the System Reliability. • To know about Simple Markovian Queueing models. 	Global

31	Skill Enhancement IV– Complex Analysis	M1046C	Empowering students to crack competitive examinations such as NET, SET and TRB. To complement the theoretical content of the subject with exercise problems	<ul style="list-style-type: none"> • To solve problems on Analytic functions, power series and complex integration. • To know about conformal mappings, mobius transformation and to solve related problems. • To solve problems on Singularities, Laurent's series, Residue and poles. 	Global
32	<u>Mathematics for Competitive Examinations – II (IDC)</u>	M1048CE	Quantitative Aptitude Tests evaluate numerical ability and problem solving skills of candidates. This test forms the major part of a number of important entrance exams for different fields. CAT, MAT, XAT, and GMAT and many other significant exams have Quantitative Aptitude as a major section.	<ul style="list-style-type: none"> • To solve problems on Quantitative Aptitude Tests. • To develop problem solving skills. 	Global
33	Advanced Business Statistics (For M.Com) (Allied)	C720	To apply statistical techniques for interpreting and drawing conclusion for business problems.	<ul style="list-style-type: none"> • To understand the concept of a random variable and its probability distributions. • To compute and interpret partial and multiple correlation. • To apply probability distribution (discrete and continuous) to a variety of problems in various diversified fields. • To discuss the different methods of testing of 	Global

				hypothesis	
34	Advanced Business Statistics for Management (For MBA) (Allied)	MBA134T	To impart the knowledge to analyze the data using statistical techniques, such as hypothesis testing and regression estimation.	<ul style="list-style-type: none"> • To understand the concept of a random variable and its probability distributions. • To compute and interpret the correlation and regression analysis. • To apply probability distribution (discrete and continuous) to a variety of problems in various diversified fields. • To discuss the various methods for testing of hypothesis. 	Global
35	Mathematical Foundations (For M.Sc. Computer Science) (Allied)	MCS150T	To impart the knowledge of the concepts needed to test the logic of program, understanding in Identifying structures, properties of languages and Optimization method.	<ul style="list-style-type: none"> • To understand the concept of testing the mathematical logic. • To construct FA, DFA and NFA. • To have an in-depth study of Transportation and Assignment problems. • To understand PERT-CPM technique for project management and to construct network diagram. Time schedule Resource levelling with probability and cost consideration. • To discuss the various methods for testing of hypothesis. 	Global

				<ul style="list-style-type: none"> • To explore the knowledge of graph theoretical concepts. 	
36	<p>Quantitative Techniques for Business Decisions (For M.Com)</p> <p>(Allied)</p>	C820	To apply OR techniques for interpreting and drawing conclusion for business problems.	<ul style="list-style-type: none"> • To develop the LPP model and solutions using graphical and simplex method. • To have an in-depth study of Transportation and Assignment problems. • To understand the meaning of inventory control as well as various forms and functional role of inventory. • To understand PERT-CPM technique for project management and to construct network diagram. Time schedule Resource levelling with probability and cost consideration. 	Global
37	<p>OPTIMIZATION TECHNIQUES (For MCA)</p> <p>(Allied)</p>	MCA240T	To obtain knowledge on linear programming problems, transportation problems, assignment problems, inventory models, queuing models, project management and Game theory problems.	<ul style="list-style-type: none"> • To develop the LPP model and solutions using graphical and simplex method. • To have an in-depth study of Transportation and Assignment problems. • To understand the meaning of inventory control as well as various forms and functional role of inventory. 	Global

				<ul style="list-style-type: none"> • To identify and examine situations that generate queueing problems and to analyze a variety of performance measure of a queueing systems. • To understand PERT-CPM technique for project management and to construct network diagram. Time schedule Resource levelling with probability and cost consideration. • To understand the principles of two person zero sum games and to apply graphical method and use linear programming approach to compute the value of the game. 	
	<p align="center">Applied Operations Research for Management (For MBA)</p>	<p align="center">MBA235T</p>	<p>To impart the knowledge of quantitative methods used in linear programming problems, transportation problems, assignment problems, project management, game theory problems, replacement and maintenance.</p>	<ul style="list-style-type: none"> • To develop the LPP model and solutions using graphical and simplex method. • To have an in-depth study of Transportation and Assignment problems. • To understand PERT-CPM technique for project management and to construct network diagram. Time schedule Resource levelling with probability and cost consideration. • To understand the meaning of 	<p>Global</p>

				<p>decision theory and the principles of two person zero sum games and to apply graphical method and use linear programming approach to compute the value of the game.</p> <ul style="list-style-type: none"> • To analyze about replacement, recruitment and promotion problems. 	
	<p>Mathematical Foundations (To M.Sc. Software Technology) (Allied)</p>	<p>MST150T</p>	<p>To impart the knowledge of the concepts needed to test the logic of program, understanding in Identifying structures, properties of languages and Optimization method.</p>	<ul style="list-style-type: none"> • To understand the concept of logic and propositional calculus and study basic logical operations. • To construct FA, DFA and NFA. • To have an in-depth study of Transportation and Assignment problems. • To understand PERT-CPM technique for project management and to construct network diagram. Time schedule Resource levelling with probability and cost consideration. • To discuss the various methods for testing of hypothesis. • To explore the knowledge of graph theoretical concepts. 	<p>Global</p>
	<p>Statistical and Numerical Methods (For MCA)</p>	<p>MCA444A</p>	<p>This course aims at providing the necessary basic concepts of a few statistical and numerical methods and give procedures for solving</p>	<ul style="list-style-type: none"> • To discuss the various methods for testing of hypothesis. • To understand numerical methods for finding the solution of some problems 	<p>Global</p>

	(Allied)		numerically different kinds of problems occurring in engineering and technology.	upto a desired degree of accuracy. <ul style="list-style-type: none"> • To implement the numerical problems to be more competitive in computation. 	
	Quantitative Aptitude Techniques (For MCA) (Allied)	MCA547S	To obtain aptitude skills and to solve quantitative problems.	<ul style="list-style-type: none"> • To appear for various competitive examinations. • To enhance the mental ability and skills in aptitude. 	Global

Name of the Programme: BA Economics

Programme Outcomes at undergraduate Level

PO1	Impart knowledge and understanding: apply new ideas in order to obtain employment / self employment.
PO2	Demonstrate communication skills both oral and written in personal and academic pursuits.
PO3	Recognise moral and ethical values and being socially responsible citizens in the society.
PO4	Direct their own self-learning through MOOC courses, co-curricular activities industrial exposures and field trainings.
PO5	Develop their own brand conceptual background in Social Sciences, Computing Skills, Languages, Culture, Managerial Skills, and Physical Sciences.
PO6	Apply analytical, technical, problem solving, critical thinking and decision making skills.

Programme Specific Outcomes at undergraduate Level

PSO1	Demonstrate different principles and theories subject to obtain employment.
PSO2	Equip various skills with basic quantitative techniques.
PSO3	Appraise as a responsible citizen incorporating social, ethical and moral values.
PSO4	Holistic development in self study, virtual learning and development.
PSO5	Develop the analytical skills in the field of social and physical sciences.
PSO6	Pursue higher learning programmes and become entrepreneurs.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Core: Economic Thought	E118	<ul style="list-style-type: none"> To introduce various economic ideas to learners in a combined and chronological order. 	<ul style="list-style-type: none"> Analyse, appreciate and develop economic thinking. 	Regional ,national and global developmental needs
2	Core: Statistics for Economics	E119	<ul style="list-style-type: none"> To make the students understand the basic concepts of Statistics and its applications. 	<ul style="list-style-type: none"> Use statistical techniques in economic analysis. 	national developmental needs
3	Core: Micro Economics-1	E216	<ul style="list-style-type: none"> This course intends to expose the student to the basic principles in Microeconomic Theory. 	<ul style="list-style-type: none"> Understand economic concepts and tools and analyse their relationships. 	national developmental needs
4	Core: Mathematics for Economics	E217	<ul style="list-style-type: none"> To make the students understand the fundamentals of mathematics and its application in Economics. 	<ul style="list-style-type: none"> Use mathematical tools and techniques in economic analysis. 	national developmental needs
5	Core: Micro Economics - II	E315	<ul style="list-style-type: none"> This course intends to expose the student to the basic principles in Microeconomic Theory. 	<ul style="list-style-type: none"> Understand economic concepts and tools and analyse their relationships. 	national developmental needs

6	Core: Macro Economics - I	E316	<ul style="list-style-type: none"> To make the students understand the functional relationship between Macro Variables like National Income, Employment, Consumption and Investment. 	<ul style="list-style-type: none"> Analyse national macroeconomic policies. 	national developmental needs
7	Core: Macro Economics -II	E417	<ul style="list-style-type: none"> To make the students to understand Macro Economic Equilibrium and its operations in the Economy. 	<ul style="list-style-type: none"> Analyse national macro economic policies. 	national developmental needs
8	Core: Industrial Economics	E418	<ul style="list-style-type: none"> To provide a thorough knowledge about the economics of Industry particularly in the Indian context. 	<ul style="list-style-type: none"> Alanalyse cost and benefits structure of industries. 	regional and national developmental needs
9	Core: International Economics	E537	<ul style="list-style-type: none"> To help the students to familiarize theories, policies and international financial institutions. 	<ul style="list-style-type: none"> Anlyse and predict global trade direction and composition. 	national and global developmental needs
10	Core: Fiscal Economics - I	E538	<ul style="list-style-type: none"> Public economics is the study of government policy from the point of view of economic efficiency and equity. The paper deals with the nature of government 	<ul style="list-style-type: none"> Analyse and design tax and expenditure structure. 	local, regional and national developmental needs

			intervention and its implications for allocation, distribution and stabilization.		
11	Core: Indian Economy	E539	<ul style="list-style-type: none"> To understand the nature and characteristics of Indian Economy and its Policies and issues. 	<ul style="list-style-type: none"> Determine economic variable like inflation, unemployment, poverty, GDP. 	regional and national developmental needs
12	Core: Monetary Economics - I	E540	<ul style="list-style-type: none"> To know the functions of money and the working of a monetary system in an economy. 	<ul style="list-style-type: none"> Analyse behavior financial and money market. 	regional and national developmental needs
13	Elective:1.Managerial Economics	E541 A	<ul style="list-style-type: none"> To familiarize with the students the importance of economic approaches in managerial decision making. 	<ul style="list-style-type: none"> Apply economic tools in managerial decisions. 	regional and national developmental needs
14	Elective:2.Basic Econometrics	E541 B	<ul style="list-style-type: none"> To get acquainted with the tools of Econometrics for applied research in Economics. 	<ul style="list-style-type: none"> Gaining knowledge about the basic econometrics. 	national developmental needs
15	Elective:3.Human Resource Management	E541 C	<ul style="list-style-type: none"> To develop an understanding of the management of human resource. 	<ul style="list-style-type: none"> Familiarizing the functions of Human Resource Management. 	regional ,national and global developmental

					needs
16	Non-Major Elective: Basic Economics	NEC503	<ul style="list-style-type: none"> To make the students to understand basic economic concepts. 	<ul style="list-style-type: none"> Recognizing the business operations with basic economic variables. 	national developmental needs
17	Core: Environmental Economics	E638	<ul style="list-style-type: none"> To explores the fundamental theories of environmental economics, the environmental problems and policy measures. 	<ul style="list-style-type: none"> Familiarizing the environmental concepts in day-to-day life. 	local, regional ,national and global developmental needs
18	Core: Monetary Economics-II	E639	<ul style="list-style-type: none"> To know the working of the both national and international banking systems. 	<ul style="list-style-type: none"> Knowing the evolution of the Indian currency system. 	national developmental needs
19	Core: Fiscal Economics-II	E640	<ul style="list-style-type: none"> Public economics is the study of government policy from the point of view of economic efficiency and equity. The paper deals with the nature of government intervention and its implications for allocation, distribution and stabilization. 	<ul style="list-style-type: none"> Knowing the functions of federal and local finance. 	national developmental needs
20	Core: Financial Economics – SS*(subjective skill)	E641 A	<ul style="list-style-type: none"> This paper helps the students to understand different concepts in financial management and 	<ul style="list-style-type: none"> Familiarizing the structure of financial economics 	regional ,national and global developmental

			its application.		needs
21	Core: Basic Computer and its Application -SS*	E641 B	<ul style="list-style-type: none"> To make the students familiarize in processing and usage of MS Office tools and understanding internet. 	<ul style="list-style-type: none"> Describe, compare, and contrast descriptive and inferential statistics and provide application knowledge 	national and global developmental needs
22	Non-Major Elective: Indian Economy :Basic Issues	NEC603	<ul style="list-style-type: none"> To know the basic Issues and Policies of Indian Economy. 	<ul style="list-style-type: none"> Assessing the emerging issues in Indian economy. 	local, regional and national developmental needs
23	Principles of Economics - I	AE105	<ul style="list-style-type: none"> To know the fundamental Principles in Economics. 	<ul style="list-style-type: none"> Gaining knowledge of the basic economic principles 	regional and national developmental needs
24	Principles of Economics - II	AE205	<ul style="list-style-type: none"> To develop the knowledge in Economics and to find solution for the Business problems. 	<ul style="list-style-type: none"> Acquiring knowledge in demand forecasting for Business solutions. 	local, regional ,national and global developmental needs
25	Managerial Economics - III	AE304	<ul style="list-style-type: none"> To familiarize with the students the importance of economic approaches in managerial decision making. 	<ul style="list-style-type: none"> Identifying the basic tools of managerial economics. 	regional ,national and global developmental needs

26	International Economics - IV	AE404	<ul style="list-style-type: none">• To help the students to familiarize theories, policies and international financial institutions.	<ul style="list-style-type: none">• Disseminating the concepts and theories of international trade.	national and global developmental needs
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Name of the Programme: PGDLM

Programme outcomes (PO)

- PO1 Demonstrate intense knowledge in their discipline
- PO2 Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice
- PO3 Develop expertise in their field of study through projects and research activities
- PO4 Prepare themselves to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization
- PO5 Develop social and ethical responsibility in the transfer and management of knowledge

Programme Specific Outcomes (PSO) for PGDLM

- PSO1 Demonstrate knowledge and skills of core concepts relating to business, commerce, supply chain management and logistics
- PSO2 Apply computer-based supply chain optimization tools including the use of selected state of the art supply chain software suites currently used in business
- PSO3 Building skills in students for delivering customized logistic solutions. The course explores subject areas such as product distribution, supply chain, inventory control, transportation management and customer services.
- PSO4 Emanate leadership, creativity, attitude, skills, passions and learning from its every corner to cast its rays towards empowering business excellence in logistics and supply chain
- PSO5 Ability to increase operational effectiveness of supply chains, leverage emerging digital supply chain business models, and transform organizations into a digital supply chain

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	SUPPLY CHAIN MANAGEMENT	MSDL121	<ul style="list-style-type: none"> To impart knowledge and understanding to students on Supply Chain Management and its relevance to today's business decision making. 	<ul style="list-style-type: none"> Students will be able to have a decent understanding on Supply Chain Management Students will be able to have an in depth knowledge about the relevance of Supply Chain Management in today's business decision making process. 	Regional
2	STORE KEEPING AND WAREHOUSING	MSDL122	<ul style="list-style-type: none"> To familiarize the students with Warehousing, its importance, valuation, inventory stores management to provide adequate knowledge to 	<ul style="list-style-type: none"> Students will be more familiarized with the various areas of warehousing Students will know how to improve the efficiency of the operation 	National

			<p>minimize the cost and improve the overall efficiency of the operation.</p>	<ul style="list-style-type: none"> Students will know how to control the cost of production 	
3	LOGISTICS MANAGEMENT	MSDL123	<p>To gain the knowledge of possibilities of efficient optimization and management of operation in Logistics Management and also the ability to apply them in the enterprise reality.</p>	<p>Students will gather sufficient and more information about the possibilities of efficient optimization and management of operation in logistic management</p> <p>Students will know how to apply the tactics that they learn in the class as far as Logistic Management is concerned.</p>	local
4	TOTAL QUALITY MANAGEMENT	MSDL124	<ul style="list-style-type: none"> To gain the knowledge of possibilities of efficient optimization and management of operation using TQM to improve the overall efficiency of the 	<ul style="list-style-type: none"> Students will know the various nuances of improving the efficiency of the firm. 	National

			firm.		
5	PURCHASE AND INVENTORY MANAGEMENT	MSDL221	<ul style="list-style-type: none"> To gain the knowledge of possibilities of efficient optimization and management of operation in Purchasing and Inventory Management and also the ability to apply them in the enterprise reality to improve the overall efficiency of the firm. 	<ul style="list-style-type: none"> Students will know the various possibilities of optimizing and managing of operation in purchasing and inventory. Students will learn to put it into practice the various tactics that they have learned to make the efficiency of the firm go up. 	Regional
6	TECHNOLOGY MANAGEMENT	MSDL222	<ul style="list-style-type: none"> To help students understand Evolution of Technology, Concepts, basic functions and recent trends Technology Management concepts and practices for 	<ul style="list-style-type: none"> Students will get a better picture of the evolution technology, concepts, function and the present day trends in technology management 	National

			better business decisions.		
7	ENTERPRISE RESOURCE PLANNING	MSDL223	<ul style="list-style-type: none"> To familiarize the students with ERP, ERP Module, SCM and CRM and its application in business related decisions. 	<ul style="list-style-type: none"> Students will know what is ERP, ERP Module, SCM and CRM and their applications in business related decision making 	National

Name of the Programme: PGDIEM

Programme outcomes (PO)

- PO1 Demonstrate intense knowledge in their discipline
- PO2 Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice
- PO3 Develop expertise in their field of study through projects and research activities
- PO4 Prepare themselves to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization
- PO5 Develop social and ethical responsibility in the transfer and management of knowledge

Programme Specific Outcomes (PSO) for PGDIEM

PSO1- To improve the knowledge about the fundamentals of business, its functioning and current strategies adopted across industries and countries.

PSO2- Develop skills on analysing the business data, application of relevant analysis, and problem solving in functional areas such as marketing, finance, operations and human resources relating to international trade.

PSO3- To collaborate and lead teams across organizational boundaries and demonstrate leadership qualities, maximize the usage of diverse skills of team members in the related context.

PSO4- To demonstrate a global outlook with the ability to identify aspects of the global business and Cross Cultural Understanding.

PSO5- To bring in awareness of ethical issues, identify the contemporary social needs and explore the opportunities for social entrepreneurship in international trade.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	EXIM POLICY & EXPORT PROCEDURE & DOCUMENTATION	MSDI121	<ul style="list-style-type: none"> To make the students understand about various EXIM policies, export procedure and documentation 	<ul style="list-style-type: none"> Students will be able to understand various policies and procedures involved in export and will be able to document them too 	National
2	MARKETING MANAGEMENT	MSDI122	<ul style="list-style-type: none"> To facilitate understanding of the conceptual framework of marketing and its applications in decision making under various environmental constraints. 	<ul style="list-style-type: none"> Students will learn to analyze markets and design customer driven strategies. 	Global developmental needs
3	INTERNATIONAL LOGISTICS AND SUPPLY CHAIN MANAGEMENT	MSDI123	<ul style="list-style-type: none"> To make the students know about the various logistics process involved in international business and various supply chain management globally. 	<ul style="list-style-type: none"> Students will come to know about the various prevalent International logistics available and their usefulness in International level 	Global developmental needs

4	INTERNATIONAL ECONOMICS	MSDI124	<ul style="list-style-type: none"> To make the students know about the various economic policies involved in international business and various trade policies and the role of WTO 	<ul style="list-style-type: none"> Students will come to know about the various prevalent economic policies available and their usefulness in International level 	<p align="center">Global developmental needs</p>
5	INTERNATIONAL FINANCE & FOREIGN EXCHANGE MANAGEMENT	MSDI221	<ul style="list-style-type: none"> To make the students understand about International Finance Management and Foreign Exchange 	<ul style="list-style-type: none"> Students will come to know about the various International Finance Management and Foreign Exchange and the various agencies involved in this process and their roles 	<p align="center">Global developmental needs</p>
6	INTERNATIONAL MARKET RESEARCH	MSDI222	<ul style="list-style-type: none"> To know the various International Market Research, analysis of data and the identification of opportunities 	<ul style="list-style-type: none"> Students will be able to identify the various possibilities of marketing internationally and explore the best options for doing particular business in that 	<p align="center">Global developmental needs</p>

				level	
7	EXPORT & IMPORT MANAGEMENT	MSDI223	<ul style="list-style-type: none"> • To know the modality of managing export and import and the procedures the involved 	<ul style="list-style-type: none"> • Students will be able to have a know how to manage export and import 	National

Name of the Programme: PGDHRM

Programme outcomes (PO)

- PO1 Demonstrate intense knowledge in their discipline
- PO2 Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice
- PO3 Develop expertise in their field of study through projects and research activities
- PO4 Prepare themselves to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization
- PO5 Develop social and ethical responsibility in the transfer and management of knowledge

Programme Specific Outcomes (PSO) for PGDHRM

- PSO1 - Apply professional skills in the functional area of human resource management for organizational effectiveness; appraise managerial issues and problems related to the global business and human resource management
- PSO2 – Gain an understanding of fundamentals of HRD, developing an HRD strategy, understanding the operational role of HRD and the key issues involved in HRD and HRIS
- PSO3 - Acquire the fundamentals of evolution of industrial relations and trade unionism in India, legislations related to industrial relations, various methods of settlement of industrial dispute, labour welfare and labour education, and worker education and training
- PSO4 - Learn about organizational Process & Change, Managing organizational change, Organizational development and contemporary issues in organizational development especially compensation and benefits
- PSO5 – Develop knowledge on training, and development of human resources, employee socialization, adopting strategic human resource development techniques

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	ORGANIZATION THEORY, STRUCTURE AND DESIGN		<ul style="list-style-type: none"> To impart knowledge and understanding to students on Structure, design and culture of organization and its relevance to today's business decision making 	<ul style="list-style-type: none"> Students will know and understand the structure, design and culture of organization and its relevance in today's business world 	Regional
2	HUMAN RESOURCE MANAGEMENT AND INFORMATION SYSTEM		<ul style="list-style-type: none"> To make the students to understand the interface of the Human Resources function with Operations, Marketing, and Finance functions and to impart knowledge on information systems and its relevance to business decisions. 	<ul style="list-style-type: none"> Students will be able to know the relevance of knowing information on Operations, Marketing and Finance in making business decision. 	National

3	HUMAN RESOURCE PLANNING AND AUDIT		<ul style="list-style-type: none"> To help students understand the Human Resource Planning, its important and techniques to identify the optimum number of human resource for efficient human resource function related decisions. 	<ul style="list-style-type: none"> Students will be able to know the relevance of Human Resource Planning with its various nuances 	Regional
4	INDUSTRIAL RELATIONS AND EMPLOYEE WELFARE		<ul style="list-style-type: none"> Students will come to know the relevance of knowing the Evolution of Trade Union and their current trends and practices 	<ul style="list-style-type: none"> Students will come to know the relevance of knowing the Evolution of Trade Union and their current trends and practices 	National
5	LABOUR LAW		<ul style="list-style-type: none"> To acquire knowledge and understanding of Industrial, Labour and General Law issues and topics to help become more informed, sensitive and effective business leaders. 	<ul style="list-style-type: none"> Students will come to know about the various general business law issues and will be able to make use of it in their turn. 	National

6	COMPENSATION AND BENEFITS		<ul style="list-style-type: none"> To provide key concepts related to compensation management, which is an integral part of human resources management, and, from the point of view of employees, probably its most important part. 	<ul style="list-style-type: none"> Students will come to know about the various concepts related to compensation management and their usage in the organization 	National
7	TRAINING AND DEVELOPMENT	MSDH223	<p>The basic objective of this course is to provide to the country a steady stream of competent young men & women with the necessary knowledge, skills and foundations for acquiring a wide range of rewarding careers into the rapidly expanding world of Human Resource Management.</p>	<ul style="list-style-type: none"> Explain the role and importance of training and development in the organization Assess the training need analysis that helps to identify the skill gap among the employees and address them Design a module to address the skill gap of the employees or the need of the organization and understand the role of OD intervenes Analyze the training methods and incorporate them to yield the right outcome from the trainees with apt innovative methods Evaluate the training and 	Global developmental needs

				development process in the organization	
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Name of the Programme: PGDMLT

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	General Laboratory and Instruments Maintenance	BCD105	<ul style="list-style-type: none"> • To Understanding the importance of standard operating procedures and safety precautions in maintaining a safe and efficient working environment. • To enhancing knowledge of safety precautions while handling and storing samples. • To provide knowledge on proper handling and storage of lab equipment to ensure its longevity. • To learn about comprehensive understanding of microscopy techniques and applications. 	<ul style="list-style-type: none"> • Understanding the importance of SOPS and safety precautions in the work place. • Awareness of safety precautions and practices while handling and storing samples. • Competence in identifying and operating common laboratory equipment. • Explain the working mechanisms and functionalities of various microscopy techniques. • Integrate knowledge of colorimeter and spectrophotometer. K6 • Recall demonstrates knowledge and understanding of the basic principles and components of ELISA, Turbidometer and Autoanalyser. 	<p>Global developmental needs</p>

2	Haematology & Blood Banking	BCD106	<ul style="list-style-type: none"> • To know about the composition of blood. • To differentiate the various blood collection methods. • To understand the needs of mandatory diagnostic procedures for the Identification of blood parasites. • To demonstrate an understanding of the blood coagulation system. • To learn the principles of immunohaematology. 	<ul style="list-style-type: none"> • Develop competency in techniques of pathology branches like haematology, clinical pathology, blood bank, histopathology and cytology • Analyse the different haematological diseases and role of laboratory for identification of abnormalities. • Enumerate the detailed aspects of blood coagulations, disorders of haemostasis, principles and methods of assessment of coagulation. • Collect blood by various methods to efficiently perform routine and special investigations in clinical haematology laboratory. • Demonstrate cytological investigations including • Collection, handling, processing and staining procedures for different clinical specimens. • Find the collection, preservation and examination of body fluids to report the abnormalities. 	National developmental needs
3	MICROBIOLOGY	BCD107	<ul style="list-style-type: none"> • To learn about the basics of Microbiology. • To understand the concepts of bacterial physiology and growth factors, bacterial growth curve 	<ul style="list-style-type: none"> • Acquire information about various microorganisms. • Identify the bacterial physiology and growth factors, bacterial growth curve and morphology 	Regional developmental needs.

			<p>and morphology.</p> <ul style="list-style-type: none"> • To determine and interpret the staining methods and its applications. • To know the methods of sterilization of media and instruments. • To learn about hands on training of cultivation of bacteria. 	<ul style="list-style-type: none"> • Defend opinions on collection of samples, labeling and transportation of material and disposal of microbiology products • Compile information about various nutrient medium. K6 • Define the name of the microbes of biological significance K1 • Interpret the staining methods and its applications. 	
4	CLINICAL BIOCHEMISTRY	BCD108	<ul style="list-style-type: none"> • To understand the renal threshold value and normal blood glucose value. • To learn about the defects associated with carbohydrate metabolism. • To gain knowledge about various diseases related to amino acid metabolism. • To study about functions of various organs of the body and their functional tests. • To understand the disorders of metabolic organ. 	<ul style="list-style-type: none"> • Describe the normal blood glucose level and explain the carbohydrate metabolic defects and its diagnostic methods. • Differentiate the metabolic diseases associated with amino acids like phenyl alanine, tyrosine and cysteine, and lipoprotein abnormalities. • Apply the suitable diagnostic method to identify the Jaundice type and explain the different liver metabolic disorders. • Analyze the renal function by various clearance tests, urine concentration and dilution test and express about renal disorders • Decide the methods of gastric sample collection technique and analyze gastric residue by 	Global developmental needs

				<p>stimulation tests.</p> <ul style="list-style-type: none"> • Manage to collect various diagnostic samples and explain about gastric and pancreatic disorders. 	
5	Clinical Endocrinology	BCD205	<ul style="list-style-type: none"> • To understand the role of hormones in biochemical reactions and its applications. 	<ul style="list-style-type: none"> • Students will develop the ability to independently evaluate, treat and monitor common endocrine disorders. They will be able to describe major actions of each hormone on target cells, synthesis pathways and inactivation of certain hormones like steroid and thyroid. Student will also gain complete knowledge on hormones and the control of its synthesis and secretion site for each hormone, including feedback relationships. 	Global developmental needs
6	ADVANCED MOLECULAR LABORATORY TECHNIQUES2	BCD206	<ul style="list-style-type: none"> • To learn the fundamentals of nucleic acid blotting techniques. • To explore the Polymerase Chain Reaction. • To understand the basic concepts of DNA sequencing. • To give basic ideas about how Hybridization are useful in research investigation. • To get familiar with the Radio isotopic techniques. 	<ul style="list-style-type: none"> • Define and understand the nucleic acid blotting techniques, its principle, instrumentation and its types. • Determine the knowledge of polymerase chain reaction and its applications • Discuss the importance of DNA sequencing in diagnostics and its significance. • Assess the DNA finger printing and genome analysis. • Correlate the characteristics of 	Global developmental needs

				<p>Hybridization, immunohistochemistry HLA DNA polymorphism, and parentage testing.</p> <ul style="list-style-type: none"> • Originate the principle, instrumentation and applications of the radio isotopic techniques. 	
7	HUMAN PATHOGENS	BCD207	<ul style="list-style-type: none"> • To acquire broad knowledge on human pathogens, its symptoms, causes and treatment. • To understand the fundamentals concepts in bacteriology, virology and mycology. • To know the basics of source and mode of action of Viruses and fungi infecting the humans. 	<ul style="list-style-type: none"> • Identify the fundamentals concepts in human pathogens, its symptoms, causes and treatment. • Demonstrate broad knowledge on the fundamentals concepts in bacteriology and virology. • Distinguish the fundamentals concepts in mycology and its pathogenesis in humans. • Determine to know the fundamentals of source and mode of action of Human Viruses and fungi. 	Regional developmental needs
8	BODY FLUID ANALYSIS	BCD208	<ul style="list-style-type: none"> • To comprehend the formation, collection and functions of Amniotic and Cerebrospinal fluids. • To exhibit skills on the formation, collection and functions of Serous fluid and other body fluids. 	<ul style="list-style-type: none"> • Correlate and measure the formation, collection and functions of Amniotic and Cerebrospinal fluids. • Originate on the formation, collection and functions of Serous fluid and other body fluids. 	Regional developmental needs

Name of the Programme: B.Sc. Microbiology (Year 2017 - 2018)

Programme Outcomes: Undergraduates will be able to:

- PO1: Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment.
- PO2: Pursue higher learning programmes and become entrepreneurs.
- PO3: Recognize moral and ethical values and be socially responsible citizens in the society.
- PO4: Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.
- PO5: Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings.
- PO6: Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.
- PO7: Demonstrate communication skills both oral and written in personal and academic pursuits.

Programme Specific Outcomes [PSO]

- PSO1: Apply the knowledge of microbiological fundamentals to find the solution for complex molecular functions and physiology.
- PSO2: Developing skilled persons in the sector of Disease diagnosis, Treatment and Prevention.
- PSO3: Demonstrate an understanding of the principles, and have practical experience of a wide range of Microbiology techniques through Microbial instrumentation.
- PSO4: Explaining the role of Microbial inoculants for improving the soil quality, plant disease control, Insect control and Plant growth promotion through Sustainable microbiological applications.
- PSO5: Training the students in both theory and practical aspects to accommodate them in both Higher education and Industries.
- PSO6: Augmenting problem-solving skills of students through Industry oriented training programmes at various levels.

- PSO7: Enrich the students with Fundamentals of Microbiology and Advanced Technologies.
- PSO8: Enable the students to employ the acquired Microbiology theoretical knowledge wherever necessary.
- PSO9: Developing Microbiology professional skills in Industry and Institutes, to better placement.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	FUNDAMENTALS OF MICROBIOLOGY	MB 101	<ul style="list-style-type: none"> • To make students to understand the fundamentals in Microbiology. • To know the basic principles and types of Microscopes. • To learn and familiarize with detailed structure of Prokaryotes, Sterilization technique and Cultivation & Isolation of microorganisms. 	<ul style="list-style-type: none"> • Microbiology has played a central role in all aspects of Biological sciences. An understanding of Microbiology is thus basics to Biological research. This course will familiarize the students with fundamental knowledge on Microbiology. 	Local and global developmental needs
2	MICROBIAL DIVERSITY AND CLASSIFICATION	MB 102	<ul style="list-style-type: none"> • To learn the Taxonomy, Ultrastructure, Classification of microorganisms. • To recognize the fundamentals on Economic importance of microorganisms. • To impart knowledge on 	<ul style="list-style-type: none"> • The basic task of Microbial Diversity and Classification is to differentiate the various characteristics of microorganisms based on Ultrastructure and Classification. It enables the students to identify any 	National and global developmental needs

			Molecular identification of microorganisms.	microorganisms through Molecular identification. The students will be able to understand and predict the Economic importance of microorganisms.	
3	MICROBIAL PHYSIOLOGY AND METABOLISM	MB 201	<ul style="list-style-type: none"> • To study the Microbial growth, nutrition and its uptake. • To learn the Microbial metabolism and respiration. • To understand the Photosynthesis reaction in microorganisms. 	<ul style="list-style-type: none"> • The paper Microbial Physiology and Metabolism enables the students about to know about Microbial nutrition and growth. The students will also be able to understand and predict the Intermediate metabolism and Photosynthesis of microbes. 	Global developmental needs
4	BIOINSTRUMENTATION	MB 202	<ul style="list-style-type: none"> • To understand the principles and applications of various instruments used in Life science. • To learn the techniques for operating the instruments. 	<ul style="list-style-type: none"> • The Bioinstrumentation course offers the students with an opportunity to gain knowledge on the principles and applications of various instruments which are used in Biological laboratories. 	Local, national and global developmental needs

5	IMMUNOLOGY	MB 301	<ul style="list-style-type: none"> • To make the students to understand the Immune system. • To strengthen the knowledge of students through a detailed study on Antigens, Antibodies and Immunoassays. 	<ul style="list-style-type: none"> • Introducing the Immunology to study various types of Cells and Organs in Immune systems and Mechanism of immune activation. 	National and global developmental needs
6	MUSHROOM TECHNOLOGY	MB 302	<ul style="list-style-type: none"> • To encode the importance of the Mushrooms. • To obtain a good understanding of Mushroom cultivation and its disease control. • To obtain knowledge in nutritional and medicinal values of Mushrooms. 	<ul style="list-style-type: none"> • The paper Mushroom Technology provides the information about the Cultivation, Disease control, Nutritional value and Medicinal value of Mushrooms. 	Local and Regional developmental needs
7	BIOINOCULANT TECHNOLOGY	MB 401	<ul style="list-style-type: none"> • To study about the Production, Formulation, Method of application and Quality control of Bioinoculants. • To understand the role of Nitrogen fixers, Phosphate solubilizers, AM fungi and Algal biofertilizers. • To learn the ability of 	<ul style="list-style-type: none"> • The course Bioinoculant Technology has been designed to provide the knowledge to the students about Natural organic farming. This paper also provides the details of Production, Formulation, Method of application and Quality control of Bioinoculants. 	Local, National and Global developmental needs

			Biofertilizers and Biocontrol agents.		
8	MICROBIAL GENETICS	MB 402	<ul style="list-style-type: none"> To make the students to understand the Genetics of microorganisms. To focus on the basic principles of Cloning vectors and Gene transfer mechanism. To study the recent advances in microbial genetic principles for strong foundation in Microbiology. 	<ul style="list-style-type: none"> The application of Microbial Genetics has completely transformed the Microbiology field with new possibilities ranging from the treatment of human diseases to the development of new forms of crops. It also looks set to be the most promising and exciting science of the next few decades. 	Global developmental needs
9	MOLECULAR BIOLOGY AND GENETIC ENGINEERING	MB 501	<ul style="list-style-type: none"> To make the students to understand the Molecular Biology and Genetic Engineering. To focus on the basic principles of DNA Replication, Transcription, Translation, Mutation and DNA Repair mechanisms. <p>To under the basic concepts and</p>	<ul style="list-style-type: none"> Molecular Biology and Genetic Engineering dispense recent study and innovation of significant methods and techniques. This paper embraces information on DNA Replication, Transcription, Translation, Mutation, DNA Repair mechanisms and various applications of 	Local and Global developmental needs

			applications of Genetic Engineering.	Genetic Engineering.	
10	MEDICAL BACTERIOLOGY	MB 502	<ul style="list-style-type: none"> To make the students to understand the Medical Bacteriology. To study the pathogenicity, clinical symptoms and treatment for disease causing bacteria. To provide the ability to characterize, isolate and identify different Medically important bacteria. 	<ul style="list-style-type: none"> To introduce the knowledge of the medically important bacteria, bacterial morphology with the main focuses being the pathogenicity, clinical symptoms, identification and treatment for different bacteria. 	Regional, and global developmental needs
11	VIROLOGY	MB 503	<ul style="list-style-type: none"> To make the students to understand the role of viruses in major diseases. To study general aspects of Structure, Classification, Replication, Pathogenicity, Clinical Syndrome, Laboratory diagnosis, Treatment and Preventive measures for Viruses. 	<ul style="list-style-type: none"> Virologist are highly demanded in the Medical research companies, Pharmaceutical companies, Governmental agencies, Laboratory testing companies or Cancer treatment or Research companies depending upon the specialization. This paper will provide the wide 	Regional, and global developmental needs

			<ul style="list-style-type: none"> To understand the structure and replication of Bacteriophages. 	<p>knowledge on Structure, Classification, Replication, Pathogenicity, Clinical Syndrome, Laboratory diagnosis, Treatment and Preventive measures for Viruses.</p>	
12	MEDICAL MYCOLOGY AND PARASITOLOGY	MB 504	<ul style="list-style-type: none"> To make the students to understand the role of Fungi, Protozoa and Helminths in Human diseases. To study general aspects of Pathogenicity, Clinical Syndrome, Laboratory diagnosis, Treatment and Preventive measures for Fungal and Parasitic diseases. To establish basic theoretical knowledge in the fields of Mycology and Parasitology. 	<ul style="list-style-type: none"> Students will be familiar with current developments and advances in the field of Mycology and Parasitology. They also will gain more knowledge on Pathogenicity, Clinical Syndrome, Laboratory diagnosis, Treatment and Preventive measures for Fungal and Parasitic diseases. 	Regional, and global developmental needs
13	HEALTH CARE AND HYGIENIC PRACTICES (ELECTIVE)	MB 505 A	<ul style="list-style-type: none"> To strengthen the knowledge of personal health care and hygienic to students. To provide a detailed study on vaccine and its 	<ul style="list-style-type: none"> Introducing the basics about the Health care and Hygienic practices to study various types of Vaccines to control the life time infectious disease. 	Regional, and global developmental needs

			<p>schedule throughout the life time for all age group.</p> <ul style="list-style-type: none"> To understand the various type of pollution and its preventive measures. 		
14	<p>COMPUTATIONAL BIOLOGY (ELECTIVE)</p>	<p>MB 505B</p>	<ul style="list-style-type: none"> To detail the importance of Computer in the field of Life sciences. To obtain good understanding about the interpretation of Biological database. <p>To uptake knowledge in latest tools and technology</p>	<ul style="list-style-type: none"> The paper Computational Biology adds information about the search engines and various software tools involved in Bioinformatics and Chemoinformatics. 	<p>Global developmental needs</p>
15	<p>PHARMACEUTICAL MICROBIOLOGY (ELECTIVE)</p>	<p>MB 505C</p>	<ul style="list-style-type: none"> To explains the concept, principles on control and management of manufacturing and quality control testing of Biopharmaceutical products. To understand a view on regulatory issues involving the trends in biopharmaceutical industry and changing regulatory needs related to products. 	<ul style="list-style-type: none"> The paper Pharmaceutical Microbiology provides an overview of the concepts of manufacture Biopharmaceutical products in today's regulatory environment. 	<p>Global developmental needs</p>

16	NUTRITION AND DIETICS	SSP – 1	<ul style="list-style-type: none"> • To know about importance of food, nutrition and nutrients. • To understand the nutrients associated health risks. • To learn about the various diets used for various disease conditions. 	<ul style="list-style-type: none"> • Nutrition is the study of nutrients in food, how the body uses nutrients, and the relationship between diet, health and disease. In this Self study paper Nutrition and Dietics, students will gain knowledge about the Importance of nutrients and various diets used for various disease conditions. 	Local, National, and global developmental needs
17	APPLIED MICROBIOLOGY (Elective)	NMB 501	<ul style="list-style-type: none"> • To make students to understand the fundamentals of microbiology and its applications. • To encode the importance of the role of microorganisms in food industries and agricultural sciences both in beneficial and harmful ways. • To study about the water borne disease and microbial standards of water quality. 	<ul style="list-style-type: none"> • Microbiology has played a central role in all aspects of Biological sciences. This course Applied Microbiology will familiarize the students from various Arts and Science Departments with fundamental knowledge on microbiology and its applications. 	Global developmental needs

18	MICROBIAL BIOTECHNOLOGY	MB 601	<ul style="list-style-type: none"> • To learn the basic tools in Microbial Biotechnology. • To understand the various concepts of Recombinant DNA Technology and Microbial products. • To emphasize on IPR issues and need for knowledge in patents in Biotechnology. 	<ul style="list-style-type: none"> • The paper Microbial Biotechnology helps the student to study theoretical concepts of Biotechnology and their applications in Genetic engineering and Microbiology. It also creates an awareness on the Intellectual property rights and patenting of Biotechnological processes. 	National and global developmental needs
19	ENVIRONMENTAL MICROBIOLOGY	MB 602	<ul style="list-style-type: none"> • To creating the awareness about environmental problems among people. • To provides a comprehensive overview of Biogeochemical processes relevant to environmental scientists and engineers mediated by microorganisms. • To study about the water borne pathogens, water borne disease, microbial standards of water quality, biogenic pollution, air borne microbes and waste 	<ul style="list-style-type: none"> • The paper Environmental Microbiology will create awareness about Microbes and environment, distribution, diversity and ecological importance, characteristics of microorganisms in different environment and its Biogeochemical cycle. This paper will also provides a detailed knowledge on Waste water treatment technologies. 	local and global developmental needs

			water management.		
20	VERMITECHNOLOGY	MB 603	<ul style="list-style-type: none"> • To study about the properties of soil and microbial composting. • To understand the biology of Earthworms and its role in Vermicomposting. • To learn the ability of Earthworms in Organic farming and Solid waste reclamation. 	<ul style="list-style-type: none"> • The course Vermitechnology has been designed to provide the knowledge to the students about Organic farming through Composting and Vermicomposting. This paper also provides the details of Earthworms and its role in Solid waste reclamation. 	National and global developmental needs
21	FOOD MICROBIOLOGY	MB 604	<ul style="list-style-type: none"> • To encode the importance of the role of microorganisms in food industries both in beneficial and harmful ways. • To obtain a good understanding of food microbiology and become qualified as microbiologist in food industries. • To know the role of microbes in the spoilage 	<ul style="list-style-type: none"> • The Food Microbiology paper adds information about the role of microorganisms in many food, beverage and various industries both in production and spoilage processes. 	Global developmental needs

			of food products.		
22	INDUSTRIAL MICROBIOLOGY	MB 605	<ul style="list-style-type: none"> To encompass the use of Industrially important microorganisms in the manufacture of food or industrial products. To understand the Fermentation process and design of various Fermentors. <p>To study the use of microorganisms for the production of Antibiotics, Vaccines, Organic acids, Organic solvents, Amino acids, Vitamins and Industrial enzymes.</p>	<ul style="list-style-type: none"> From the Industrial Microbiology paper, students acquire the knowledge in the large scale production of Industrial product and providing the trends to cater the needs of industry. 	Regional, and global developmental needs
23	DAIRY TECHNOLOGY	SSP – 2	<ul style="list-style-type: none"> To encode the importance of the role of microorganisms in Dairy industries To obtain a good understanding of Dairy 	<ul style="list-style-type: none"> The Self-study paper Dairy Technology is about the study of milk and milk-derived food products. It focuses on the biological, chemical, 	Regional and national developmental needs

			<p>microbiology and become an Entrepreneur.</p> <ul style="list-style-type: none"> To obtain knowledge in food quality and spoilage of Dairy products. 	<p>physical, and microbiological aspects of milk itself, and on the technological aspects of the transformation of milk into its various consumer products including fermented products, concentrated and dried products, butter and ice cream. This course also provides information about the role of microorganisms in Dairy products development.</p>	
24	<p>MICROBIAL DISEASES AND HEALTH CARE (Elective)</p>	NMB 601	<ul style="list-style-type: none"> To make the students to understand the various diseases caused by microorganisms. To study the clinical conditions and preventive measures for microbial diseases. To provide the knowledge about Antibiotics, Drugs, Vaccines and Vaccination. 	<ul style="list-style-type: none"> To introduce the knowledge of the medically important microorganisms which are responsible for causing diseases. The course Microbial disease and health care will provide the knowledge to the students about microbial diseases and its preventive measures, vaccines and 	Global developmental needs

				vaccination.	
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Name of the Programme : M.Sc. Counselling Psychology

Programme Outcomes at Postgraduate Level

Postgraduates will be able to

PO1: Demonstrate intense knowledge in their discipline

PO2: Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice

PO3: Develop expertise in their field of study through projects and research activities

PO4: Prepare them to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization

PO5: Develop social and ethical responsibility in the transfer and management of knowledge.

Program Specific Outcomes (PSOs)

PSO1: Understand the nature and basic principles of counselling psychology and have an in depth understanding of related psychological theories and concepts.

PSO2: Applying the educational, therapeutic, psycho social and vocational interventions for individuals, families, groups, organizations and communities.

PSO3: Analyse, evaluate and practice the dynamics behind emotional, intellectual, social and spiritual wellbeing.

PSO4: Develop scientific inquiry and critical thinking in the process of understanding human behaviour and mental process.

PSO5: Assimilate the nature and reasons of human behaviour with reference to one's environment upholding professional ethics, values and social responsibility to attain a better and more sustainable future.

PSO6: Demonstrate skills of leadership, creativity, and social sensitivity to recognise the needs of the community and become active agents of change.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	<p>RESEARCH METHODOLOGY & STATISTICS (MC-7)</p>	MSY311T	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • To gain knowledge about research methodology & statistical applications. • To understand the usages of computer packages in research. • To acquire the skill of adopting the methodology and the application of statistics. • To gain knowledge on various statistical application. • To be introduced to qualitative research. 	<p>national developmental needs</p>

2	<p>PSYCHOPATHOLOGY-II (MC-8)</p>	MsY312T		<ul style="list-style-type: none"> • To orient students on different psychological disorders • To orient students on causes and treatment of different psychological disorders • To learn about personality disorders, dissociative disorders and somatoform disorders. • To assess and identify sleep disorders, sexual disorders and eating disorders. • To understand about perspectives of models of psychology on personality disorder. 	global developmental needs
3	<p>SCHOOL COUNSELLING (MC-9)</p>	MSY313T		<ul style="list-style-type: none"> • To gain knowledge about school counselling. • To acquire skills in education of exceptional children. • To understand social interaction between teacher – child and moral development. • To know about establishing and maintaining a productive learning environment. • To know about dealing with students misbehaviours. 	global developmental needs

4	PSYCHOTHERAPIES – II (MC-10)	MSY314T		<ul style="list-style-type: none"> • To provide theoretical foundation for the practice of psychotherapy. • To help the trainee counsellors to choose specific techniques for a particular case. • To acquire knowledge about the different schools and techniques in psychotherapy. • To link theory and practice of psychotherapy. • To introduce them to barefoot counselling 	global developmental needs
5	Cognitive Behaviour Therapy and Rational Emotive Therapy (ME-1)	MSY315A		<ul style="list-style-type: none"> • To become familiar to the concept of CBT. • To understand and apply CBT techniques and skills. • To gain knowledge on REBT and its techniques. • To integrate REBT theory into practice. • To assimilate CBT and REBT in daily living. • 	global developmental needs
6	PSYCHOLOGY OF INTERPERSONAL RELATIONSHIP (ME-1)	MSY315B		<ul style="list-style-type: none"> • To understand the various kinds of interpersonal relationships and related theories. • To understand about interpersonal 	national developmental needs

				<p>relationships in various social settings.</p> <ul style="list-style-type: none"> • To understand about the various interpersonal communication styles and techniques to improve relationship. • To comprehend the dynamics behind work related relationship. • To gain knowledge in improving individual's IPR skills. 	
7	HUMAN RESOURCE DEVELOPMENT (ME-1)	MSY315C		<ul style="list-style-type: none"> • To gain knowledge about human resource development. • To understand the approaches and activities of human resource development. • To acquire the skills of developing human resources in different sectors. • To introduce the students to training and development. • To gain knowledge and skills regarding relationship at work. 	national developmental needs
8	FIELD PRACTICUM - III	MSY316F		<ul style="list-style-type: none"> • To gain experience by applying the theoretical knowledge in the field. • To understand the functions and activities of field place 	local developmental needs

				<p>organization.</p> <ul style="list-style-type: none"> • To apply the class learning into practice. • To know how to apply psychological tests in counselling. • To learn how to write case studies. 	
9	<p>POSITIVE PSYCHOLOGY (MC-11)</p>	MSY411T		<ul style="list-style-type: none"> • To understand nature and assessment of positive psychology. • To understand the positive emotional states and process. • To acquire knowledge of positive cognitive states and processes. • To understand ways to enhance prosocial behavior. • To learn to create a positive environment. 	national developmental needs
10	<p>FAMILY AND COUPLE COUNSELLING (MC-12)</p>	MSY412T		<ul style="list-style-type: none"> • To understand the historical evolution of field of marriage and couple counselling. • To understand the psychological theories and various therapies in family counselling. • To acquire the knowledge about single parent and blended families problems. 	national developmental needs

				<ul style="list-style-type: none"> • To understand the family therapy research and implications. • To integrate family and couple counseling theories with practice. 	
11	HEALTH PSYCHOLOGY (MC-13)	MSY413T		<ul style="list-style-type: none"> • To understand the definition of health psychology and bio-psychosocial model. • To get knowledge about health behavior and primary prevention of health issues. • To understand stress and coping methods and management of pain and discomfort. • To get clear knowledge about chronic and terminal illness. • To help to manage pain, discomfort, chronic and terminal illness. 	national developmental needs
12	COMMUNITY PSYCHOLOGY (ME-2)	MSY414A		<ul style="list-style-type: none"> • To learn the linkage between individuals, communities and societies and handle social issues more effectively with people's participation. • To understand the role and the core values of community psychology. • To understand various mental health issues among students. 	regional developmental needs

				<ul style="list-style-type: none"> • To understand various childhood disorders. • To teach counselor's role in community development 	
13	<p>ADOLESCENT COUNSELLING (ME-2)</p>	MSY414B		<ul style="list-style-type: none"> • To get knowledge with various topics and critical perspective related to adolescence and psychology. • To enable the students to understand the biological and cognitive development of adolescence. • To enable the students to understand the adolescence relationship with all areas and culture influence. • To become specialized in handling adolescence. 	national developmental needs
14	<p>ORGANIZATIONAL PSYCHOLOGY (ME-2)</p>	MSY414C		<ul style="list-style-type: none"> • To gain knowledge about organizational psychology. • To understand the functions and activities of organization. • To acquire the skills of working with organized sectors and human resources. • To explain managing self-competency and communication competency. • To explain how job satisfaction and organizational commitment affect performance. 	national developmental needs

15	EMPLOYABILITY SKILLS (SK-2)	MSY415S		<ul style="list-style-type: none"> • To understand the career planning skills in their interest field. • To get knowledge about the recruitment channels and analyzing the job advertisements. • To get the skill of resume writing. • To improve their team work, planning and organizational skills. • To give a wider outlook on career decision making process. • 	regional developmental needs
17	RESEARCH PROJECT (RP)	MSY416J		<ul style="list-style-type: none"> • To gain research methodology knowledge by undertaking a research project. • To understand the steps of research by its application. • To acquire the skills of undertaking a research project. • To understand the scope of statistics. • To understand diagrammatic and graphic representation of data 	local developmental needs
18	SUMMER INTERNSHIP (SI-2) OPTIONAL			<ul style="list-style-type: none"> • To gain experience in a counselling field by being in an open or closed setting. • To understand the Skills, techniques 	local developmental needs

				<p>and approaches adopted by the organization.</p> <ul style="list-style-type: none"> • To apply the knowledge gained, in the field of counselling. • To understand the structure and functions of the organization. • To get placed in an institution. 	
19	<p>RESEARCH METHODOLOGY & STATISTICS (MC-7)</p>	MSY311T		<ul style="list-style-type: none"> • To gain knowledge about research methodology & statistical applications. • To understand the usages of computer packages in research. • To acquire the skill of adopting the methodology and the application of statistics. • To gain knowledge on various statistical application. <p>• To be introduced to qualitative research</p>	Local developmental needs
20	<p>PSYCHOPATHOLOGY-II (MC-8)</p>	MSY312T		<ul style="list-style-type: none"> • To orient students on different psychological disorders • To orient students on causes and treatment of different psychological disorders • To learn about personality disorders, 	global developmental needs

				<p>dissociative disorders and somatoform disorders.</p> <ul style="list-style-type: none"> • To assess and identify sleep disorders, sexual disorders and eating disorders. • To understand about perspectives of models of psychology on personality disorder. • 	
21	<p>SCHOOL COUNSELLING (MC-9)</p>	MSY313T		<ul style="list-style-type: none"> • To gain knowledge about school counselling. • To acquire skills in education of exceptional children. • To understand social interaction between teacher – child and moral development. • To know about establishing and maintaining a productive learning environment. • To know about dealing with students misbehaviours 	<p>global developmental needs</p>

22	PSYCHOTHERAPIES – II (MC-10)	MSY314T		<ul style="list-style-type: none"> • To provide theoretical foundation for the practice of psychotherapy. • To help the trainee counsellors to choose specific techniques for a particular case. • To acquire knowledge about the different schools and techniques in psychotherapy. • To link theory and practice of psychotherapy. • To introduce them to barefoot counselling. 	global developmental needs
23	Cognitive Behaviour Therapy and Rational Emotive Therapy (ME-1)	MSY315A		<ul style="list-style-type: none"> • To become familiar to the concept of CBT. • To understand and apply CBT techniques and skills. • To gain knowledge on REBT and its techniques. • To integrate REBT theory into practice. • To assimilate CBT and REBT in daily living. 	global developmental needs

24	PSYCHOLOGY OF INTERPERSONAL RELATIONSHIP (ME-1)	MSY315B		<ul style="list-style-type: none"> • To understand the various kinds of interpersonal relationships and related theories. • To understand about interpersonal relationships in various social settings. • To understand about the various interpersonal communication styles and techniques to improve relationship. • To comprehend the dynamics behind work related relationship. • To gain knowledge in improving individual's IPR skills 	national developmental needs
25	HUMAN RESOURCE DEVELOPMENT (ME-1)	MSY315C		<ul style="list-style-type: none"> • To gain knowledge about human resource development. • To understand the approaches and activities of human resource development. • To acquire the skills of developing human resources in different sectors. • To introduce the students to training and development. • To gain knowledge and skills regarding relationship at work. 	regional developmental needs

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26	FIELD PRACTICUM - III	MSY316F		<ul style="list-style-type: none"> • To gain experience by applying the theoretical knowledge in the field. • To understand the functions and activities of field place organization. • To apply the class learning into practice. • To know how to apply psychological tests in counselling. <ul style="list-style-type: none"> • To learn how to write case studies. 	local developmental needs
27	POSITIVE PSYCHOLOGY (MC-11)	MSY411T		<ul style="list-style-type: none"> • To understand nature and assessment of positive psychology. • To understand the positive emotional states and process. • To acquire knowledge of positive cognitive states and processes. • To understand ways to enhance prosocial behavior. 	national developmental needs

				<ul style="list-style-type: none"> • To learn to create a positive environment. 	
28	FAMILY AND COUPLE COUNSELLING (MC-12)	MSY412T		<ul style="list-style-type: none"> • To understand the historical evolution of field of marriage and couple counselling. • To understand the psychological theories and various therapies in family counselling. • To acquire the knowledge about single parent and blended families problems. • To understand the family therapy research and implications. • To integrate family and couple counseling theories with practice. 	national developmental needs
29	HEALTH PSYCHOLOGY (MC-13)	MSY413T		<ul style="list-style-type: none"> • To understand the definition of health psychology and bio-psychosocial model. • To get knowledge about health behavior and primary prevention of health issues. • To understand stress and coping methods and management of pain 	global developmental needs

				<p>and discomfort.</p> <ul style="list-style-type: none"> • To get clear knowledge about chronic and terminal illness. • To help to manage pain, discomfort, chronic and terminal illness. • 	
30	<p>COMMUNITY PSYCHOLOGY (ME-2)</p>	MSY414A		<ul style="list-style-type: none"> • To learn the linkage between individuals, communities and societies and handle social issues more effectively with people's participation. • To understand the role and the core values of community psychology. • To understand various mental health issues among students. • To understand various childhood disorders. • To teach counselor's role in community development 	regional developmental needs
31	<p>ADOLESCENT COUNSELLING (ME-2)</p>	MSY414B		<ul style="list-style-type: none"> • To get knowledge with various topics and critical perspective related to adolescence and psychology. • To enable the students to understand the biological and cognitive 	national developmental needs

				<p>development of adolescence.</p> <ul style="list-style-type: none"> • To enable the students to understand the adolescence relationship with all areas and culture influence. • To become specialized in handling adolescence. 	
32	ORGANIZATIONAL PSYCHOLOGY (ME-2)	MSY414C		<ul style="list-style-type: none"> • To gain knowledge about organizational psychology. • To understand the functions and activities of organization. • To acquire the skills of working with organized sectors and human resources. • To explain managing self-competency and communication competency. • To explain how job satisfaction and organizational commitment affect performance. 	regional developmental needs
33	EMPLOYABILITY SKILLS (SK-2)	MSY415S		<ul style="list-style-type: none"> • To understand the career planning skills in their interest field. • To get knowledge about the recruitment channels and analyzing the job advertisements. • To get the skill of resume 	Local developmental needs

				<p>writing.</p> <ul style="list-style-type: none"> • To improve their team work, planning and organizational skills. • To give a wider outlook on career decision making process. 	
34	RESEARCH PROJECT (RP)	MSY416J		<ul style="list-style-type: none"> • To gain research methodology knowledge by undertaking a research project. • To understand the steps of research by its application. • To acquire the skills of undertaking a research project. • To understand the scope of statistics. • To understand diagrammatic and graphic representation of data. 	Local developmental needs
35	SUMMER INTERNSHIP (SI-2) OPTIONAL			<ul style="list-style-type: none"> • To gain experience in a counselling field by being in an open or closed setting. • To understand the Skills, techniques and approaches adopted by the organization. 	Local developmental needs

				<ul style="list-style-type: none">• To apply the knowledge gained, in the field of counselling.• To understand the structure and functions of the organization.• To get placed in an institution.	
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Name of the Programme: B. COM (CA)

Programme Outcomes Undergraduate Level

Undergraduates will be able to	
PO1	Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment
PO2	Pursue higher learning programmes and become entrepreneurs
PO3	Recognize moral and ethical values and be socially responsible citizens in the society
PO4	Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.
PO5	Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings
PO6	Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.
PO7	Demonstrate communication skills both oral and written in personal and academic pursuits

Programme Specific Outcomes at Undergraduate Level

PSO1	Graduates will be able to understand the concepts related to various aspects of commerce and computer applications in the real world situations and also to enrich the practical knowledge with practical exposures (Internship) in the field of commerce and computer applications to fulfill the industry requirements.
PSO2	Graduates will be able to get entrepreneurial skills and leadership skills in the functional areas of various businesses by gaining knowledge in various disciplines of Commerce, accounting, marketing, banking and taxation.

PSO3	Acquire the communicative skills, employment skills and knowledge on computerized accounting, management information system and programming languages in business.
PSO4	Graduates will obtain the ability to develop critical thinking, creativity and innovative ideas, demonstration skill in object oriented programming like; RDBMS, Programming with C and PHP and be able to develop software in Linux environments. They also have knowledge in web designing.
PSO5	Analyze and apply various ethical practice of commerce, accounting and computer applications tools to solve the real life business problems and be socially responsible citizens in the society

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Financial Accounting – I (Core)	CC103	<ul style="list-style-type: none"> • The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting. • To develop the skills for recording various kinds of business transactions. 	<ul style="list-style-type: none"> ▪ Students can understand the basics and nuance of accounts. ▪ Understand the reasons for variation in pass book and cash book ▪ Financial transactions can be recorded by the students in books of accounts. ▪ The profit position of the business can be measured by the students as per the Accounting Standards (AS) ▪ Have knowledge on single entry system and depreciation calculation 	National needs
2	Business Environment (Core)	CC104	<ul style="list-style-type: none"> • To enable the students to have an overview of Business Environment – Political, Social and Global. • To enable the students to appreciate the importance of environment and its impact on Business and Society. 	<ul style="list-style-type: none"> ▪ The meaning, scope and features of business can be learned by the students. ▪ Students will understand the factors influencing the environment of every business. ▪ Students may aware on the role of globalisation, WTO and GATT on Indian business. ▪ Understand on business ethics ▪ Have knowledge on social responsibility of business towards stakeholders 	Regional needs

3	OFFICE AUTOMATION (Core)	CC105	<ul style="list-style-type: none"> • To know the history of computers. • To understand the basic formatting features in word processor. • To have knowledge on functions of spreadsheet. • To understand the fundamental concepts of presentation. • To explore knowledge on sending receiving mails. 	<ul style="list-style-type: none"> ▪ Know the history of computers. ▪ Understand the basic formatting features in word processor. ▪ Have knowledge on functions of spreadsheet. ▪ Understand the fundamental concepts of presentation. ▪ Explore knowledge on sending receiving mails. 	international needs
4	Financial Accounting – II (Core)	CC203	<ul style="list-style-type: none"> • The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting. • To develop the skills for recording various kinds of business transactions. 	<ul style="list-style-type: none"> ▪ On learning of Financial Accounting-II, student can prepare the accounts of branch and departments ▪ Understand the differences in hire purchase and Installment purchase systems. ▪ The profit sharing ratios of partnership can be found by the students while admitting a partner. ▪ Have knowledge on settlement at the time of retirement and death of a partner ▪ Students will be learned on the procedure for revaluation of assets and liabilities; and dissolution of firm 	National needs

5	Business Management	CC204	<ul style="list-style-type: none"> • To familiarize students with the principles, functions and techniques of management • To enable the students to be socially conscious manager 	<ul style="list-style-type: none"> • Student acquire the knowledge and skills to manage a business • Students will inculcate the leadership qualities • Explore knowledge on making decisions. • Understand the structure of the organization • Have knowledge to delegation of authority and responsibility 	Local needs
6	WEB DESIGN TECHNOLOGY	CC205	<ul style="list-style-type: none"> • To understand the basic of HTML structure, tags, and presentation elements. • To understand the basic of HTML Images and Links. • To understand the basic of HTML List and Tables. • To understand the basic of Frames elements and Forms elements. • To understand the basic of CSS syntax, Inclusion, Measurement units and various CSS Properties. 	<ul style="list-style-type: none"> • Develop Website Accessibility. • Make detailed understanding of the structure of a page with the help of HTML. • Develop the innovative designing ability in designing web page. • Understand the basic of HTML List and Tables, Frames elements and Forms elements. • Understand the basic of CSS syntax, Inclusion, Measurement units and various CSS Properties. 	International needs
7	Principles of Marketing (Core)	CC305	<ul style="list-style-type: none"> • To make the students to be aware of the basics of marketing. • To explore the knowledge of students towards latest marketing 	<ul style="list-style-type: none"> • Students should know the connectivity of marketing in their life • To impart the knowledge related on basic marketing and its techniques 	Regional needs

			techniques.	<ul style="list-style-type: none"> • Understand the life cycle of a product • Have knowledge on product mix and marketing mix • Understand the factors influencing pricing decisions 	
8	Corporate Accounting – I (Core)	CC306	<ul style="list-style-type: none"> • The objective of this paper is to gain comprehensive understanding of all aspects relating to corporate accounting. • To develop the skills for preparation of financial statements. • 	<ul style="list-style-type: none"> • Understand the concept of shares and procedures, accounting transaction related on issues of shares • Make detailed understanding on acquisition of business • Have knowledge on amalgamation and liquidation of companies • Gain knowledge on purchase consideration • Understand the calculation of liquidators remuneration 	National needs
9	Modern Banking (Core)	CC307	<ul style="list-style-type: none"> • To enable the students to be aware on the basic functions and services of modern banks. • To help the students to be familiarize with the latest banking technologies 	<ul style="list-style-type: none"> • Acquire the knowledge on basic functions and services of modern banks • understand the instruments which are used in modern banks • Students should know the technology which are used in banks • Understand the functions of RBI • Have knowledge on Mobile banking and E-Wallets 	National needs
10	Stock Market Operation (Core)	CC309X	<ul style="list-style-type: none"> • The objective of this paper is to gain comprehensive understanding of all aspects relating to stock market. • To develop the skill to trading in 	<ul style="list-style-type: none"> • Students acquire the knowledge on stock market and its functions • Have knowledge on DEMAT account • Understand the performance of Indian stock exchanges 	National needs

			stock market.	<ul style="list-style-type: none"> • Student will understand commodity exchange • Explore knowledge on Online share trading 	
11	PROGRAMMING WITH C (Core)	CC308	<ul style="list-style-type: none"> • To understand the basic concepts of C program and ability to write simple programs. • To understand and develop well-structured programs using C program • To understand the various functions used in a C Program. 	<ul style="list-style-type: none"> • Use the characteristics of procedural programming concepts in a program. • Use the basic design principles in computer problem solving. • Program with advanced features of the C++ programming language. • Develop programs in the UNIX programming environment. 	International needs
12	Mercantile Law (Core)	CC405	<ul style="list-style-type: none"> • To enable the learner to have basic knowledge of Mercantile Law • To impart knowledge on legal rules regarding sale of goods act 	<ul style="list-style-type: none"> • Familiarizes the law related on business • Understand the Indian contract Act and sale of goods Act • Have knowledge on performance of contract • Understand the reasons for breach of contract • Gain knowledge on bailment and pledge 	National needs
13	Corporate Accounting – II (Core)	CC406	<ul style="list-style-type: none"> • The objective of this paper is to gain comprehensive understanding of all aspects relating to corporate accounting. • To gain accounting knowledge in banking and insurance companies 	<ul style="list-style-type: none"> • Students should understand the present scenario of corporate • Understand various methods to measure the goodwill • To familiarize on holding, banking and insurance companies accounts maintains • Have knowledge on non performing assets 	National needs

				<ul style="list-style-type: none"> Understand the general insurance company accounts 	
14	Cost Accounting (Core)	CC407	<ul style="list-style-type: none"> To familiarize the students with cost concepts and techniques of Cost Accounting To make the students learn cost accounting as a separate system of accounting 	<ul style="list-style-type: none"> Students will know the way in which selling price fixed for a product with the help of cost sheet Have knowledge on Tender and quotation preparations Make them aware of material pricing and calculations connected with labours Understand the apportionment of overhead costs Get knowledge on computation of machine hour rate 	National needs
15	Tourism Marketing (Core)	CC409X	<ul style="list-style-type: none"> To provide a global and local perspective on tourism marketing <ul style="list-style-type: none"> To build theoretical knowledge of the tourism marketing and related sectors 	<ul style="list-style-type: none"> Students gain the knowledge on tourism marketing at various level Aware on how tourism marketing functioning Understand the employability scopes in tourism industry Have knowledge on tourism market segmentations <ul style="list-style-type: none"> Know the behaviour of tourism people 	Local needs

16	RELATIONAL DATABASE MANAGEMENT SYSTEM (Core)	CC408	<ul style="list-style-type: none"> • To understand the basic concepts of Database and Data Models. • To understand the basic concepts of Relational Model. • To understand the consequences of database design and how it can be overcome. • To learn how to implement the query language in database. • To know what is the role of PL/SQL in RDBMS. 	<ul style="list-style-type: none"> • Understand the basic concepts of Database and Data Models. • Understand the consequences of bad database design and how it can be overcome. • Learn how to implement the query language in database. • Know the role of PL/SQL in RDBMS. 	International needs
17	Management Accounting (Core)	CC508	<ul style="list-style-type: none"> • To equip the students to interpret financial statements with specific tools of management accounting. • To enable the students to have a thorough knowledge on the management accounting techniques in business decision making. 	<ul style="list-style-type: none"> • Student Should understand the how and wherever the management tools followed more effectively • Students get aware on management techniques and making decision for the betterment of the business • Able to prepare various budgets which connect with business • Have knowledge on financial statements • Understand the techniques which are used in capital budgeting 	National needs
18	Income Tax Law and Practice I (Main Elective – 1)	CC509A	<ul style="list-style-type: none"> • To enable the students to understand the basic provisions of Income Tax Law. • To study the procedure on computation of Income under different heads. 	<ul style="list-style-type: none"> • Students inculcate the knowledge on basic provisions of income tax law • Students acquire the knowledge and skills on computing the taxable income to the individuals. • Have knowledge on Permanent Account Number • Gain knowledge about assessment 	National Needs

				<p>procedure and powers</p> <ul style="list-style-type: none"> • Understand the computation of taxable salary 	
19	E- Commerce (Main Elective: 1)	CC509B	<ul style="list-style-type: none"> • To enable the student to become familiar with the mechanism for conducting business transactions through electronic means • To impart knowledge regarding technological commerce 	<ul style="list-style-type: none"> • Student aware on the computerized mechanism which are connected with business • Student acquired knowledge on latest computer usage • Gain knowledge about e-security • Make them to use E-payment system • Gain awareness on IT Act and Cyber crimes 	International Needs
20	1. 3. Auditing (Main Elective)	CC509C	<ul style="list-style-type: none"> • To gain the knowledge of auditing principles, procedures and techniques in accordance with the current legal requirements • To give an overview of the eligibility, qualities, rights and duties of Auditors 	<ul style="list-style-type: none"> • Students will get more knowledge about the principles and techniques which are used in auditing • Students may get more interest to do charter accountant course • Understand the classification of audit • Have knowledge about vouching and verification • Explore the knowledge on company audit 	National needs
21	I Entrepreneurial Development (Subject Skill)	CC510	<ul style="list-style-type: none"> • To familiarize the students with the latest programs of the government authorities in promoting small and medium industries • To impart knowledge regarding how to start new ventures 	<ul style="list-style-type: none"> • The students acquire more knowledge and skill to promote new ventures • Student gets motivation to self employment and through which can reduce unemployment • Gain knowledge on starting small scale units 	Local needs

				<ul style="list-style-type: none"> • Students Able to prepare a project proposals • Understanding the financial support for a business from the government side and institutions with subsidies 	
22	1 Business Organizations (SSP: 1.)	CC511AX	<ul style="list-style-type: none"> • To gain knowledge of Business Organization and its importance • To impart knowledge on establishment of industry 	<ul style="list-style-type: none"> • Students may aware how to organize a business and to establish an industry • Understand the from of business organisations • Gain knowledge on trade association and chamber of commerce • Have knowledge about public utilities and public enterprises • Understand about the industrial estates 	Regional needs
23	2 Office Administration (SSP)	CC11BX	<ul style="list-style-type: none"> • To introduce the students the functioning of modern office and latest information technologies in offices. • To expose the students in office supervision and accommodation 	<ul style="list-style-type: none"> • Acquire the skills for effective way of administration • Students enhanced their knowledge in the field of information technologies related on their administration • Gain knowledge on work simplification • Get clear understanding on duties and responsibilities of office manager • Make them understand the concept of systematic record management 	Local needs
24	Basics of Accounting using Computers (Tally) (Non-Major Elective)	NCC502	<ul style="list-style-type: none"> • To gain the knowledge about accounting software in the current industry. • To impart knowledge to the student the added features on the latest version 	<ul style="list-style-type: none"> • Students who are from other major may acquire software which are used for accounting purpose • Students will get more knowledge on computerized accounting packages with updated versions 	Local needs

				<ul style="list-style-type: none"> • Students able to gain knowledge on starting tally and company creation • Have knowledge about creation of group • Gain knowledge to prepare company balance sheet from tally 	
25	WEB PROGRAMMING USING PHP (core)	CC507	<ul style="list-style-type: none"> • To understand the basic fundamental syntax and functions. • To understand form processing and validation methods. • To know file handling concepts. • To understand basic MySQL functions. • To implement PHP using XML functions. 	<ul style="list-style-type: none"> • Understand the basic fundamental syntax and functions. • Process forms and validation methods. • Know file handling concepts. • Understand basic MySQL functions. • Execute PHP using XML functions. 	International needs
26	COMPUTER ORGANIZATION (core)	CC506	<ul style="list-style-type: none"> • To know the fundamentals of a computer system. • To understand the different types of number system. • To understand the various types of memory and processor. • To understand the classification of computer languages. • To study the different kinds of output device 	<ul style="list-style-type: none"> • Understand the organization of a computer system in terms of its main components. • Understand different understand input/output mechanisms. • Understand the various parts of a system memory hierarchy. • Use the different ways of communicating with I/O devices and standard I/O interfaces. 	National needs

27	MANAGEMENT INFORMATION SYSTEM (core)	CC607	<ul style="list-style-type: none"> • To demonstrate effective communication with individuals, teams and large groups. • To demonstrate effective analytical and critical thinking skills. • To distinguish and analyze ethical problems that occur in business and society. • To apply leadership skills and competencies in business situations. • To demonstrate an understanding of major functional areas of Business. 	<ul style="list-style-type: none"> • Demonstrate effective communication with individuals, teams and large groups. • Demonstrate effective analytical and critical thinking skills. • Distinguish and analyze ethical problems that occur in business and society. • Apply leadership skills and competencies in business situations. • Demonstrate an understanding of the major functional areas of Business. 	International needs
28	Computerized Accounting (core)	CC606	<ul style="list-style-type: none"> • To enable the students to acquire basic knowledge on computer application in the field of Accounting. • To equip the students to meet the demands of the industry and to develop practical skills in the application of Tally Package. • 	<ul style="list-style-type: none"> • Students aware on knowledge on computer application in the field of Accounting • Students acquire the skills to prepare a company's Balance sheet with the help of tally package • Gain knowledge on books of accounts and its advance usages • Have knowledge to prepare the payroll and payroll reports • Understating on report generation 	Regional needs
29	Financial Management (core)	CC609A	<ul style="list-style-type: none"> • To prepare the students to compute taxable income of various heads of Income. • To enable the students to compute Income and Tax Liability of Individual. 	<ul style="list-style-type: none"> • Students themselves to compute taxable income of various heads of Income like; Income from Business or Profession, Capital Gains, Income from other Source, • Get awareness on Set off and Carry forward of Losses • Have knowledge on Assessment of Individual 	National needs

				<ul style="list-style-type: none"> • Understanding on clubbing of income and deemed income • Gain knowledge on deductions eligible for individuals 	
30	Investment Management (Main Elective)	CC609B	<ul style="list-style-type: none"> • To make the student to understand the concepts and objectives of Investment • To introduce various avenues of the investments to the student 	<ul style="list-style-type: none"> • Students aware on the various avenues of the investments and to do effective portfolio management • Understand the investments which one is speculation and gambling • Have knowledge on various investment avenues • Gain knowledge about SEBI • Get detailed knowledge about risk taking techniques 	Regional needs
31	Company Law (Main Elective)	CC609C	<ul style="list-style-type: none"> • To enable the students to understand the principles and procedures of company law • To impart basic knowledge of the provision of the companies act 	<ul style="list-style-type: none"> • The students will get knowledge on basic principles and procedures to start a company • Students acquire depth knowledge about various provisions in company law • Understand the qualifications and disqualifications of board of directors • Have knowledge on proceedings of company meetings • Understand the ground reality of winding up of companies 	National needs

32	Human Resource Management (Subject Skill)	CC610	<ul style="list-style-type: none"> • To understand the basic perspective of Human resource management. • To enable the students to be aware procedure of performance appraisal training methods. 	<ul style="list-style-type: none"> • Student gets motivation to become a HR manager • Understand the scopes in the field of Human resource management • Students may understand the technique used by the HR manager • Understand the way in which appraising the performance of an employee • Gain knowledge on training and development for the employees 	National needs
33	1 Customer Relationship Management (SSP – II)	CC611AX	<ul style="list-style-type: none"> • To highlight the importance of customer expectations and customer satisfaction. • To high light the methods to customers in business and to dev long term relationship with cu through appropriate strategies 	<ul style="list-style-type: none"> • Students will understand how customers are importance to the business • Understand why business people are maintain the good relationship with the customers • Gain knowledge on customer retaining strategies • Have knowledge on customers perceptions • Understand the importance of custome centres 	National needs
34	Sales Promotions (Non-Major Elective-)	CC611BX	<ul style="list-style-type: none"> • To enable the students to acquire knowledge on selling aspect of marketing • To impart the various techniques of sales promotion with ethics 	<ul style="list-style-type: none"> • Students understand the sales promotion techniques • Acquire the skills to marketing a product at different territories • Have knowledge about tools of sales promotion • Understanding the necessity of creating public relations • Gain knowledge on ethical and unethical sales promotion 	Local needs

35	General Commercial Knowledge	NCC602	<ul style="list-style-type: none"> • To enable the students to gain basic knowledge of Trade, Commerce and Industry • To impart knowledge on joint stock companies and its management 	<ul style="list-style-type: none"> • Students from other major will gain basic knowledge on Trade, Commerce and Industry • Students will gain knowledge on Joint stock companies and its management • Have knowledge about various business forms • Understand the needed skills for management of joint stock companies • Get knowledge on preparing company agenda minutes 	Local needs
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Name of the Programme: M.A. English

Programme Outcomes at Postgraduate Level

Programme will be able to:

PO1	Demonstrate intense knowledge in their discipline.
PO2	Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice.
PO3	Develop expertise in their field of study through projects and research activities.
PO4	Prepare them to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization.
PO5	Develop social and ethic responsibility in the transfer and management of knowledge.

Programme Specific Outcomes at Postgraduate Level

Programme will be able to:

PSO1	Compare and discuss the general characteristics and uniqueness of English literature emerging from different parts of the world, with an emphasis on rereading of Shakespeare.
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PSO2	Exhibit a deeper knowledge and understanding of English language with the emerging trends of grammatical nuances and equip oneself with the latest teaching and learning methods in English, leading to appropriate careers.
PSO3	Comprehend the recent trends in literature and criticism; choose an appropriate field of research, adhering to standard research practices.
PSO4	Discover the profound thoughts enshrined in the Indian indigenous literature and discuss the social, political and cultural issues reflected.
PSO5	Demonstrate one's command of English language through creative content writing, technical and academic writing and identify career opportunities in print and electronic media.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	World Classics in Translation		<ul style="list-style-type: none"> • To help the students to imbibe classical literature through translations for its rich source of cultural heritage • To acquire the knowledge of great literary traditions due to their strong influence on British and American literature. 		National, and global developmental needs

2	Chaucer and Elizabethan Age		<ul style="list-style-type: none"> • To introduce the students to the versatility and range of Knowledge of this period. • To gain insight into the transition from the 16th to the 17th Centuries and the influence of new philosophy and new science. 		National, and global developmental needs
3	Shakespeare		<ul style="list-style-type: none"> • To make students read Shakespeare texts in the light of recent approaches • To make students to review the traditional concepts of genres and also to focus on new interpretation in the contemporary context. 		Regional developmental needs
4	Elective – I: Communicative Skills in English		<ul style="list-style-type: none"> • To train the students to listen and in simple English in real life situations • To empower the students to read English and comprehend • To make the students communicate in simple written English 		Local developmental needs

5	Elective – I: Professional Communication Skills		<ul style="list-style-type: none"> • This course attempts to impart the basics of communication in English through written exercises and spoken activities not only to improve the general communication abilities of students but also to enhance their employability. 		Local developmental needs
6	Elective – I: Creative Writing		<ul style="list-style-type: none"> • To enable the students with the literature background to write and express their ideas creatively and innovatively in his or her unique style. • To help the students to learn the techniques of other eminent writers and help them to draft their own. 		Regional developmental needs
7	Restoration and Eighteenth Century		<ul style="list-style-type: none"> • To survey the emergence of new models of poetry and drama in this period of high ideals combined with wit and language • To study the broadening of the Literary Civilization that included more of the middle class 		National, and global developmental needs
8	Contemporary Critical Theory and Terms		<ul style="list-style-type: none"> • To introduce the students to the current theoretical perspectives in contemporary literary studies 		Regional developmental needs

			<ul style="list-style-type: none"> • To help the students in close reading of the literary texts in the light of current critical perspectives 		
9	New Literatures in English		<ul style="list-style-type: none"> • To make the students to become familiar with the current scenario of literature in different parts of the world • To encourage the students to pursue their own interest in literature 		National, and global developmental needs
10	Research Methodology		<ul style="list-style-type: none"> • To provide students with paradigms and vocabularies for engaging in knowledge production • To help students to be more self-aware and purposive researchers • To enable them to conduct their research and present their findings in an effective manner in the field of literature. 		Local developmental needs
11	Elective – II: Children’s Literature		<ul style="list-style-type: none"> • To acquaint students with the major writers of children’s literature to help them to evaluate the literal qualities and the popular appeal of the books 		Regional global developmental needs

			<p>for children</p> <ul style="list-style-type: none"> • To explore the category of children's literature and its interaction and impact on children • To motivate the students to instill the habit of reading in children and make them understand the importance of reading. 		
12	Elective – II: Subaltern Studies		<ol style="list-style-type: none"> 1. To introduce the current trends in Literature. 2. To concentrate on the social issues of recent years. 3. To bring about change in the attitudes towards the subaltern. 4. To help all to live in the society respecting every individual. 		National, and global developmental needs
13	Elective – II: Feminist Studies- Women's Writing		<ul style="list-style-type: none"> • To initiate an interest in the students for the women writers in English. • To enable them to appreciate the thought and expression of women writers who displayed their perception on the world, 		National, and global developmental needs

			<p>culture, and gender- bias with novelty in attitude and innovation in techniques.</p>		
14	<p>Romantic and Victorian Age</p>		<ul style="list-style-type: none"> • To provide an overview of the literary climate where the romantic sensibility finds an authentic voice touch and intensity. • To explore the development of the specialist forms of literature in the Victorian age led by thinkers, poets and novelist towards enlightenment. 		<p>National, and global developmental needs</p>
15	<p>Language and Linguistics</p>		<ul style="list-style-type: none"> • This course helps the students to get introduced to scientific and systematic study of a language. It consists of the topics related to language and its history with the linguistic elements that makes a person to be systematic, specific and objective. • To help the students to internalize the system of rules and applications of the English Language. 		<p>local, regional, national, and global developmental needs</p>

16	American Literature		<ul style="list-style-type: none"> • To introduce the students to the tone and expression of the American literary artists, who were innovative in their outlook and literary temper • To familiarize the students with the classics of American literature and to enable them to understand the dynamic theories conceived by the modern writers of America. 		Regional developmental needs
17	Project		<ul style="list-style-type: none"> • To provide an opportunity for the students to pursue a topic of individual interest in English 		Regional developmental needs
18	Elective – III: Green Voices Literature and Environment		<ul style="list-style-type: none"> • To introduce the students with an overall view of literature and ecological thinking. The Green Movement was one of the most significant developments in the social, historical, economic and political spheres of the twentieth century. The interrelationship of nature and the human has now come to be widely recognized. • To introduce the students to some basic texts and concepts in this direction, recognizing the 		Regional developmental needs

			<p>fundamental nature of the issues. It is intended to be multidisciplinary.</p>		
19	<p>Gender and Mass Media</p>		<ul style="list-style-type: none"> • To familiarize the students with the notion of gender and its operation in society. • To assist the students to look at stereotypical representation of women in the media and equip them to critique them. 		<p>Regional developmental needs</p>
20	<p>Elective – IV: Post-Colonial Literature</p>		<ul style="list-style-type: none"> • To enable student to know the current social-Political climate in the developing countries. • To appreciate postcolonial literatures through a study of representative authors and poets of native culture 		<p>National, and global developmental needs</p>
21	<p>Twentieth Century Literature</p>		<ul style="list-style-type: none"> • To help the students to retrace the diversity of the school of this period which were more liberal in outlook and scientific in technique <p>To introduce students to the thoroughly competent and</p>		<p>National, and global developmental needs</p>

			<p>literate authors in the traditional mode, who were creatively original</p>		
22	<p>English Language Teaching & Modern English Grammar</p>		<ul style="list-style-type: none"> • To equip the students with knowledge of various methods both evolving and being used in ELT, thus enabling them to adapt the appropriate approach and method in ELT both at the secondary and tertiary level. 		<p>Regional developmental needs</p>
23	<p>Literary Criticism – II</p>		<ul style="list-style-type: none"> • To facilitate students acquiring basic knowledge in English critical tradition from the beginnings to the Modernists • To help students to prepare himself/herself to lay the foundation for learning how to address the discursive and ideational aspects of literary texts 		<p>National, and global developmental needs</p>

24	Indian English Literature		<ul style="list-style-type: none"> • To acquaint students with knowledge of Indian writers and their works. • To help the students to have a broad look on Indian literature and to make them and estimate the diverse path and significance of Indian culture. 		Regional developmental needs
25	Elective – IV: Literature Analysis, Approaches and Applications		<ol style="list-style-type: none"> 1. To develop the reading and writing skills for personal and professional purposes. 2. To enhance the interpretive ability to critically analyze and appreciate literary texts. 		National, and global developmental needs
26	Elective – IV: Advanced Academic Writing		<ul style="list-style-type: none"> • To develop the proficiency of the learners in writing English for academic purposes • To integrate the various skills and sub skills into meaningful writing activities. 		Regional developmental needs
27	CONTENT WRITING				Regional developmental needs

Name of the Programme: B.A. English

Programme Outcomes at Undergraduate Level

Programme will be able to:

PO1	Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment
PO2	Pursue higher learning programmes and become entrepreneurs
PO3	Recognize moral and ethical values and be socially responsible citizens in the society
PO4	Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.
PO5	Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings
PO6	Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.
PO7	Demonstrate communication skills both oral and written in personal and academic pursuits

Programme Specific Outcomes at Undergraduate Level

Programme will be able to:

PSO1	Demonstrate all the four basic English language skills both in formal and informal settings, know all the nuances of language and language teaching and be an effective English language trainer
PSO2	Comprehend the interplay between history of English literature and the social history of England; recognize the predominant school of thoughts pertaining to the ages; express in creative ways through the different forms of literature
PSO3	Discuss the richness and uniqueness of Indian writings in English and its position among the world literature
PSO4	Reread a work of art applying both existing and emerging critical theories
PSO5	Compile the literatures from around the world especially, the American, Common Wealth, etc., including women's writings and evaluate their uniqueness
PSO6	Find suitable career prospects in the areas of Journalism, Translation and Media.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
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1	English – I : Basic Communication		<ul style="list-style-type: none"> • To introduce students to the basics of communication in English • To learn a list of vocabularies like nouns that are commonly used in daily life • To introduce students to basic grammar • To be able to frame correct sentences both in spoken and written forms • To prepare the students to interact with others in English with apt body language • To enable students to appreciate literary pieces 	<p>CO1:Converse in simple English using appropriate vocabulary at home, in the playground, at college, and while cooking and eating</p> <p>CO2:Greet others, introduce oneself and others, invite and request someone, offer help- accept it and decline it, seek permission, ask for advice, and express gratitude</p> <p>CO3:Exhibit adequate writing skill in English using nouns and verbs prescribed for study</p> <p>CO4: Demonstrate practical knowledge of various parts of speech; past tense, present tense, and future tense; articles and prepositions</p> <p>CO5: Discuss and analyse, themes and characters of short stories written by Jean Ure, Stephen Leacock, A. G. Gardiner, and Somerset Maugham and poems by Robert Frost and G. M. Hopkins; express appreciation of aesthetic aspects of literary works</p>	Regional developmental needs
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2	<p>English – II: Basic Communication</p>		<ul style="list-style-type: none"> • To help learners to build over the basic communication skills obtained in the previous semester in English • To be able to frame correct complex sentences both in spoken and written forms • To introduce students to idioms • To prepare the students to interact with others in English with apt body language • To enable students to appreciate literary pieces 	<p>CO1:Converse in English using appropriate vocabulary in Hospital, while gardening, travel and professional environments; discuss about weather, seasons, universe, roads and traffic signals</p> <p>CO2:Compliment and congratulate; persuade and remember someone; complain and apologize; make suggestions and warn someone; and ask about possibility</p> <p>CO3:Exhibit adequate writing skill in English using nouns and verbs prescribed for study</p> <p>CO4: Demonstrate practical knowledge of grammar related to subject verb agreement and punctuations; direct and indirect speech; conditional statements, questions, negation, command and request; active and passive voice and run-on sentences</p> <p>CO5: Discuss and analyse, themes of essays/short stories written by Dr. APJ Abdul Kalam, O. Henry and Cedric Mount; poems by P. B. Shelley and Khalil Gibran; express appreciation of aesthetic aspects of</p>	<p>Regional developmental needs</p>
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				literary works	
3	English - III: Public Communication		<ul style="list-style-type: none"> • To Introduce students to the art of communication and public speaking in English • To train the minds to think in English • To enhance proficiency in Writing skills of the students focusing on vocabulary already learnt and acquiring new vocabulary • To understand and appreciate English prose passages and Poems • 	<p>CO1: Introduce oneself, describe, narrate in informal situations; welcome, introduce a guest and thank in a formal gathering; face an interview in person or online; seek and give information over telephone in simple English</p> <p>CO2: Prepare and present professional presentations; negotiate and involve in Group Discussions with a professional approach in English</p> <p>CO3: Exhibit writing skill in English in writing short speeches, apply for jobs, prepare resumes, pen business letters and write professional reports</p> <p>CO4: Demonstrate knowledge and use of</p>	Regional developmental needs

				<p>phrasal verbs and idioms that are commonly used as well as job-related in real life situations</p> <p>CO5: Discuss and analyse, themes and characters of short stories written by Edward De Bono Kamala Das, O. Henry, T.S Eliot. Stockton, , John Milton, express appreciation of aesthetic aspects of literary works</p>	
4	English - IV: Business Communication		<ul style="list-style-type: none"> • To Enhance the proficiency of Business Communication skills of the students focusing on the words, and expressions commonly used in the business environment • To develop the ability to communicate clearly, correctly and effectively in written English on matters having relevance to day-to-day business operations • To use appropriate words, proper construction of sentences, and coherent presentation conforming to widely accepted 	<ul style="list-style-type: none"> • At the end of the Course, the learners will be able: • To prepare their resumes and write business-related letters • To face both face-to-face interview and tele-interviews • To write minutes of meeting and short reports • To follow telephone etiquette in asking for and giving information, and make, cancel and reschedule appointments • To write letters to express congratulations, sympathy, and condolences • To handle visitors and customers in 	National developmental needs

			corporate practices <ul style="list-style-type: none"> • To create quality work force for the industry 	a business environment with proper diction <ul style="list-style-type: none"> • To negotiate in business situations and participate in Group Discussions 	
5	Chaucer and Elizabethan Age		<ul style="list-style-type: none"> • To train the learners to get an overall perspective of the literature of Chaucerian Age • To make the learners to understand the poetic forms in Chaucer and Elizabethan Age • To expose the learners to the features of prose writings in Chaucer and Elizabethan Age • To enable the learners to appreciate the features of Chaucer and Elizabethan drama • To help the learners to understand the English Social life during Chaucer and Elizabethan Age 	<ul style="list-style-type: none"> • Appreciate the features of Chaucer and Elizabethan poems, prose • Get an over view of the Chaucer and Elizabethan Age • They can understand the English Social life during Chaucer and Elizabethan Age • Categorise various genres in Chaucer & Elizabethan Age • Create the similar traditional forms of poetry as in the particular age 	Regional developmental needs

6	<p>18th Century English Literature</p>		<ul style="list-style-type: none"> • To give a broad introduction to the Literature and Culture of the Eighteenth Century England • To explore the classical notion of Science and Literature, Nature and Imagination during the Eighteenth Century • To give a taste of the Eighteenth Century poetry and novel • To enhance the students' knowledge of the literary accomplishments and an exposure to the Eighteenth Century writers • To familiarize the students with the concepts that evolved during that era. 	<ul style="list-style-type: none"> • Students will be able to Know and remember the various developmental stages of 18th century in the English literary field. • Students will be able to explain the classical notions of Science and literature, Nature and Imagination during the eighteenth - century • Students will be able to enrich student's mind with the taste of the eighteenth-century Poetry with the concepts of Eighteenth-century writers • Students will be able to describe, analyze, interpret and evaluate 18th century dramatic literature and theatrical productions. • Students will be able to understand the theoretical concepts and its development that could develop student's critical thinking. 	<p>regional developmental needs</p>
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7	Literary Forms		<ul style="list-style-type: none"> • To introduce students to the English literary background • To inculcate in the beginners a proper understanding of all the literary forms • To enable the students to understand each literary form in isolation and in relation to other forms • To identify literary forms of given literary pieces and their characteristics • To recognize and define a few important forms of poetry such as sonnet, ode, ballad, elegy, etc. • 	<ul style="list-style-type: none"> • CO1: Know and relate the English literary background with the literary pieces • CO2: Analyse the literary forms with the literary piece. • CO3: Compare each literary forms in relation to other forms. • CO4: Identify literary forms of given literary pieces and their characteristics. • CO5: Recognize and define a few important forms of poetry such as sonnet, ode, ballad, elegy, etc. 	Regional developmental needs
8	History of English Literature		<ul style="list-style-type: none"> • To give an over view of English Literature • To inculcate in the beginners a proper understanding of social and literary background of all the literary ages 	<p>CO1: Gain knowledge of the History of Literature and great authors of English.</p> <p>CO2: Interconnect the history, biography of the author and the works.</p> <p>CO3: Analyse the growth of literary genres of specific periods.</p> <p>CO4: Evaluate the role of literary movements and their impact on the</p>	Regional developmental needs

				literary works. CO5: Help the learners to identify great authors and their ages.	
9	English Literature –Romantic Age		<ul style="list-style-type: none"> • To make students read and understand the age of romanticism in the light of recent approaches • To review the traditional concepts of genres and also to focus on new interpretation in the contemporary context • To provide an overview of the literary climate where the romantic sensibility finds an authentic voice touch and intensity • To enable students to demonstrate knowledge and understanding of a range of fictional, Poetic and other texts often described as ‘Romantic’ • To find the interrelationship between the literary production 	<ul style="list-style-type: none"> • CO1: Know and remember the various developmental stages of Romantic age in English literary field • CO2: Demonstrate an understanding of Poetical production during Romantic Era in English literary world • CO3: Able to apply and test knowledge on variety of Poetical and literary productions • CO4: Able to describe, analyze, interpret and evaluate the concepts of Romantic age • CO5: Able to evaluate poems, Novels, and the dramas of Romantic era and use critical analysis in writing analytical articles 	Regional developmental needs

			and its wider historical context.		
10	Epics in English		<ul style="list-style-type: none"> • To acquaint the students with the great epics of English Literature • To enrich learners with the types of Epic • To familiarize the conventions of Epic 	<p>CO1: Students can identify a variety of forms and genres of poetry from diverse cultures and historic periods.</p> <p>CO2: They can understand the nature and development of the genre of ancient epic.</p> <p>CO3: They can understand the internal structure and unity of the individual epics studied in the syllabus.</p> <p>CO4: They can analyse the text with critical approaches and scholarly theories concerning these works.</p> <p>CO5: They can understand the different historical contexts which produced the works.</p>	Regional developmental needs

11	Social History of England		<ul style="list-style-type: none"> • To enable the students to acquire some basic knowledge of the social history of England • To help students to recognize English thought, culture and history reflected in the study of literature • To facilitate students to understand the changing environment in the history of England and English Literature • To train the students to see the social life of the people of an era mirrored in the literature of the corresponding era. 	<ul style="list-style-type: none"> • Develop an ability to read texts in relation to their historical and cultural context • Gain a richer understanding of both text and context • Become aware of themselves as situated historically and culturally <p>Think critically and creatively and develop detailed methods of analysis and response</p>	Regional developmental needs
12	History of English Language		<ul style="list-style-type: none"> • To comprehend the mechanisms of Language change and an acceptance of the inevitable nature of Language change • To acquire knowledge of the Origins of English and its place in respect to other languages of the world • To recognize the major stages in the Language and important changes in the development of English from a Synthetic to an Analytic language 	<ul style="list-style-type: none"> • An understanding of the history of English language from the old English Period to Modern day Influence • Distinguish between language varieties. • Students will understand origin and development of the language • Apprehend the growth of vocabulary for ages 	Regional developmental needs

			<ul style="list-style-type: none"> • To understand, how the current state of the language has resulted from historical change • To develop a knowledge of the English Language from its Indo-European past to the present day • 		
13	Major English Tragedies		<ul style="list-style-type: none"> • To enable the students to appreciate tragedy as an enduring literary term and relate with the tragic themes • To enable the students to understand the works of various writers that embody truths and transcend time and all cultures • To help the students to study Major English Tragedies which are abound with ideas that are still relevant today • To make the students gain knowledge of the style of the tragedies, the heroic deeds, understand the tragic flaws and the tragic end of the protagonist. 	<ul style="list-style-type: none"> • The students will be able to appreciate tragedy as an enduring literary term and can relate with the tragic themes • The students will be able to understand the works of various writers that embody truths and transcend time and all cultures • The students can gain knowledge of the style of the tragedies, the heroic deeds, understand the tragic flaws and the tragic end of the plays • The students will be able to understand the Major English Tragedies which are abound with ideas that are still relevant to today's protagonist. 	regional developmental needs

14	English Literature- Victorian Age -I		<ul style="list-style-type: none"> • To enable the learners to form an overview of the Victorian age • To help the learners to understand and appreciate the writers of Victorian age • To train the learners to read and appreciate the novel of Victorian age • To expose the learners to few poems, short stories of Victorian age • To develop a clearer understanding of the period its tensions, enthusiasm, hopes, fears, and sometimes contradictory moral and intellectual principles through reading, discussion, and writing. 	<p>CO1: acquire knowledge about the writers and their works in the Victorian age</p> <p>CO2: Assimilate the subjects in their critical way will be high regarding the works of writers of Victorian age</p> <p>CO3: Analyse the work of a range of Victorian writers, both canonical and less well-known, and with a range of genres including the novel, short story and poetry.</p> <p>CO4: Identify and discuss theoretical discourse concerning class, sexuality, gender and colonialism as these illuminate a range of Victorian texts</p> <p>CO5: understand and deploy a range of terms and concepts integral to Victorian Literature</p>	Regional developmental needs

15	<p style="text-align: center;">20th Century Indian Literature in English - I</p>		<ul style="list-style-type: none"> • To inspire the learners to approach and appreciate Indian literature in English • To provide an overview of the various phases of the evolution of Indian writing in English • To explore its uniqueness and its place among the literature in English • To motivate the learners for a critical and comparative study of Indian literature 	<p>CO1: student might have learnt the essential characteristics, major and techniques of 20th century English literature.</p> <p>CO2: they can identify and describe distinct literary characteristics of modern writers</p> <p>CO3: students can analyse poetic works for their structure and meaning, using the correct terminology</p> <p>CO4: students will be able to enact the dramas through that they can categories the various dramas</p> <p>CO5: know and remember the various developmental stages of 20th century English literature.</p>	<p style="text-align: center;">Regional developmental needs</p>
16	<p style="text-align: center;">Phonetics</p>		<ul style="list-style-type: none"> • To help the students to understand all the sounds of English and the organs of Speech • To provide students an overview of vowels, Consonants, and word Accent, intonation. • To acquire an understanding of speech as the international 	<p>CO1: Decipher phonetics symbol with sounds</p> <p>CO2: Use right accent, intonation and rhythm in speaking</p> <p>CO3: Analyse the syllable and accent</p> <p>CO4: Classify the speech sound</p>	<p style="text-align: center;">Regional developmental needs</p>

			<p>phonetic transcription</p> <ul style="list-style-type: none"> To give a systematic, conscious consideration of how speech sounds are made, what they sound like, and how they compare with each other. 	CO5: Transcribe into phonetic language	
17	<p>English Literature- Victorian Age-II</p>		<ul style="list-style-type: none"> To inculcate a sense of appreciation of English poetry in Students To train the students to read and appreciate the novels of Victorian age To raise the awareness of relevant cultural and/or social contexts, and a sense of what that awareness contributes to the understanding of the text(s) To develop a clearer understanding of the period - its tensions, enthusiasms, hopes, fears, and sometimes contradictory moral and intellectual principles through reading, discussion, and writing. 		<p>Regional developmental needs</p>

18	20th Century English Literature		<ul style="list-style-type: none"> • To introduce the essential characteristics, major trends and techniques of 20th Century English Literature • To familiarize them to the works of modern writers. • 		Regional developmental needs
19	Literary Criticism - I		<ul style="list-style-type: none"> • To introduce to the students the world of Literary Criticism. • To make the students to learn and understand critical analysis and interpretation. • To make the students to learn and understand to evaluate literature. • To make the students to learn and understand the examination of literary contexts, types, theme, trends, history, or principles • To enable the students to understand and appreciate and to enhance proficiency in all kinds of literary work 	<ul style="list-style-type: none"> • understand Literary Criticism • understand critical analysis and interpretation • evaluate literature • examine the literary contexts, types, theme, trends, history, or principles • appreciate and enhance and be proficient in all kinds of literary work 	Regional developmental needs

20	20th Indian Literature in English-II		<ul style="list-style-type: none"> • To introduce learners to the various phases of evolution in Indian Writing in English • To sensitize them to the value system of Indian literature • To enable the students understand the history and the growth of Indian writing in English • To introduce the learners to rich literary tradition in Indian writing in English • To help the learners understand and appreciate Indian ethos, aesthetics and values • To introduce the students to Indian writing in English in its various genres. 		regional developmental needs
21	Anglo- American Writing-I		<ul style="list-style-type: none"> • To introduce students to a variety of Anglo-American writing in different genres • To familiarize student with the major Anglo-American writers to understand their contribution to the shaping of contemporary thought. • To provide the global perspective. 		regional developmental needs

22	Common Wealth Literature		<ul style="list-style-type: none"> • To sensitize the history of Commonwealth Nations • To familiarize the students with the recent works of writers from different pockets of the world with an open mind, to understand and appreciate them • To weigh the claims of universalism made on behalf of canonical texts in juxtaposition to the elements of heredity, marginality, plurality and ‘otherness’, by examining these texts • To demonstrate knowledge and awareness of some components of Commonwealth Nations’ cultural heritage such as artistic, historical, linguistics, literary, and philosophical foundations. 	<ul style="list-style-type: none"> • Appreciate all the literary works under Commonwealth Literature as a part of English Literature. • Understand the global relevance, significance and resonance of Commonwealth Literature today. • Analyse and evaluate the postcolonial aspects of the literary works from Commonwealth nations • Appreciate the contribution of translation studies to Commonwealth Literature. • Critically analyse the relevance of the works in the light of globalization. 	regional developmental needs
23	Women’s Writings in the 19th and 20th Centuries-II		<ul style="list-style-type: none"> • To initiate an interest in the learners for the women writers in English • To enable students to approach the thought and expression of women writers who displayed their perception on the world, 	<p>CO1: Critically respond to literature from a feminist perspective</p> <p>CO2: Differentiate how patriarchal notions pervade in the social and cultural scenario and how feminism exposes</p>	Regional developmental needs

			<p>culture and gender – bias with novelty in attitude and innovation in techniques</p> <ul style="list-style-type: none"> • To know the underlying themes expressed by women writers • To understand and appreciate the inner and deeper aspirations of the women writers. 	<p>these notions</p> <p>CO3: Identify how stereotypical representations of women were constructed and how these are subverted by women’s writing</p> <p>CO4: Analyse and engage in theoretical and scholarly debates about feminist fiction.</p> <p>CO5: Know the developments, themes and narrative techniques of women’s writings.</p>	
24	English for Competitive Examinations		<ul style="list-style-type: none"> • To equip the learners with knowledge and skills to clear competitive exams • To provide the basic knowledge of English language • To enable the learners to use error free English 	<ul style="list-style-type: none"> • students will be confident and possess the skills necessary to face the challenges of a competitive exam • They will acquire English language skills to achieve success in the competitive examinations • They will be exposed to write competitive examinations • They will be able to participate in Group discussions and interviews 	regional developmental needs

25	Literary Criticism - II		<ul style="list-style-type: none"> • To introduce to the students the world of Literary Criticism. • To make the students to learn and understand critical analysis and interpretation. • To make the students to learn and understand to evaluate literature. • To make the students to learn and understand the examination of literary contexts, types, theme, trends, history, or principles • To enable the students to understand and appreciate and to enhance proficiency in all kinds of literary work. 	<ul style="list-style-type: none"> • understand Literary Criticism • understand critical analysis and interpretation • evaluate literature • examine the literary contexts, types, theme, trends, history, or principles. • appreciate and enhance and be proficient in all kinds of literary work. 	regional developmental needs
26	English Language Teaching		<ul style="list-style-type: none"> • To provide the history English Language Teaching • To understand the historical need that called for an innovation in teaching methods • To equip the learners with a knowledge of various methods both evolving and being used in 	<ul style="list-style-type: none"> • CO1: Trace the history of English Language Teaching and understand the importance of teaching and learning other languages • CO2: Discuss the historical need that called for innovation in 	national developmental needs

			<p>ELT</p> <ul style="list-style-type: none"> • To help the students to understand the current trends and curriculum styles in ELT • To enable students to train themselves to be good English Teachers 	<p>teaching methods in language teaching</p> <ul style="list-style-type: none"> • CO3: Know and demonstrate various approaches and methods, both evolving and being used currently in ELT • CO4: Apply ELT methods in real time to smaller groups • CO5: Use the latest technology to acquire LSRW skills and be autonomous learners. 	
27	20th Century British Novels		<ul style="list-style-type: none"> • To introduce students the novel as a literary form, its origins, history and continued popularity • To introduce students to the different trends in the history of English Novels. • To focus novel as a medium for social change. 		regional developmental needs

28	Translation: Theory and Practice		<ul style="list-style-type: none"> • To help the students understand how translation has shaped the knowledge of the world in the past and equip for the future. • To develop practical skills in translation • To develop an understanding of difference in the text type. 	<ul style="list-style-type: none"> • Use language properly including language patterning, textual organisation and the semiotics of verbal and non-verbal communication to translate texts. • Effectively employ their knowledge of the nuances of translation to translate texts from any regional language into English. • Translate literary texts 	regional developmental needs
29	Project- Journalism		<ul style="list-style-type: none"> • To enable students to understand that writing for media is an art • To offer hands-on experience to the learners by empowering them to do real time projects • To familiarize students with the nuances of Journalism. 	<ul style="list-style-type: none"> • Students will be able to understand that writing for media is an art • They will be able to offer hands-on experience to the learners by empowering them to do real time projects • They will be able to familiarize students with the nuances of Journalism. • Facilitate the students on technical writing • Draft their original work 	regional developmental needs

30	Written Communication		<ul style="list-style-type: none"> • To equip the learners with good written communication skills • To train students in writing • To familiarize the learners with the mechanics of writing • To enable the learners to use the appropriate functions and means of writing • To equip the learners with info-gathering steps for better writing. 	<ul style="list-style-type: none"> • students will be confident and possess the skills necessary to face the challenges of a competitive exam • They will acquire English language skills to achieve success in the competitive examinations • They will be exposed to write competitive examinations 	regional developmental needs
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M.Phil (CA)

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
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Programme Objectives

Research students of M.Phil programme are expected to acquire a broad knowledge in all areas of computer applications, and an overall perspective of the field, its structure, and its problems. They are expected to study at least one area (field of interest) in considerable depth and to make substantial contributions to that field through creative research ideas.

Students should be able to advance the basic understanding of information processes and to contribute to the creation and consolidation of knowledge in computer applications. In addition, they should be able to see and understand new problems within computer applications and other fields, to find imaginative solutions for them and to carry them through.

Program Specific Outcomes (PSOs) of M.Phil (C.A)

PSO1: Understand and apply the knowledge of computing skills inherited from the course to abstract and model real time problems.

PSO2: Integrate the problem solving and technical abilities to design and deploy software

PSO3: Identify, scrutinize, adopt and apply modern tools and technologies as per the requirements

PSO4: Realize the importance of working in a team and team building.

PSO5: Able to inculcate ad-hoc learning abilities with communication efficacy.

1	RESEARCH METHODOLOGIES	CAR110T	<ul style="list-style-type: none"> • To equip students with a basic understanding of the underlying principles of quantitative and qualitative research methods. • Provide students with in-depth training on the conduct and management of research from inception to completion using a wide range of techniques. 	<ul style="list-style-type: none"> • To understand research and research methods in Computer Applications, • To be able to plan, and conduct your own research, taking professional limitations, • To be able to communicate its results in the required report format. 	local developmental needs
2	FRONTIER AREAS IN RESEARCH	CAR111T	<ul style="list-style-type: none"> • Motivate them to focus on a particular domain to continue their research. • Identify major areas where technologies can be applied and their implications for organizational change. • Recognize current and emerging disruptive technologies and their potential to impact social conditions, the economy, and daily life. 	<ul style="list-style-type: none"> • Course gives the preparatory focus towards the research areas. This will enable the students to do their research. 	Local developmental needs
3	DATA QUALITY ASSURANCE	CAR112T	<ul style="list-style-type: none"> • Learn how to integrate data quality assessments as a critical component in all your projects. • Understand on the initial steps of data science, emphasizing data collection, data source evaluation, and techniques for ensuring high-quality data. 	<ul style="list-style-type: none"> • To Enable the Research Scholars to learn in depth about the concepts of Data Quality Assurance and to open Avenues of Research in this field. 	Local developmental needs

4	BUSINESS ANALYTICS	CAR112T	<ul style="list-style-type: none"> • Understand and critically apply the concepts and methods of business analytics • Identify, model and solve decision problems in different settings • Interpret results/solutions and identify appropriate courses of action for a given managerial situation whether a problem or an opportunity • Create viable solutions to decision making problems 	<ul style="list-style-type: none"> • To understand some of the problems that companies face due to the growing volume of data • To understand how big data and analytics is impacting IT and operations • To learn about the new IT infrastructure designed to support big data and analytics 	Regional developmental needs
5	NETWORKS AND INFORMATION SECURITY	CAR112T	<ul style="list-style-type: none"> • Provide an in-depth, theoretical understanding of network security. • Provide students with the knowledge and skills necessary to design and support network security. 	<ul style="list-style-type: none"> • Course focuses on basic concepts in networks and information security. • Aims to introduce techniques used in implementing security in network communications. • Gives them an understanding and practical experience of common threats and attacks in networked systems. 	Local developmental needs

Name of the Programme: MCA

Programme Objectives

The Programme aims to prepare the student to be skilled professionals, innovators or entrepreneurs engaged in technology development and deployment in the industry. The programme targets to prepare the students for the industry by imparting sound background in theoretical and applications-oriented courses relevant to the latest trends in the industry. It facilitates the students to find solutions and develop system based applications for real time problems in various domains involving technical, managerial, economic and social constraints. It also prepares the students to pursue higher studies in computing or related disciplines and to work in the fields of teaching and research and to recognize the need for and develop the ability to engage in continuous learning as a Computing professional.

The programme caters to the foundation of computing principles and business practices, train the students to analyze the problems in a wide range of applications and to solve mathematical, computing, communications / networking and commercial problems. Special thrust is given to industrial experience by exposing the students to enterprise software management methodologies. It also intends to make the students aware of the major security risks and Provides a hands on environment on tools and practices for building secure systems. It targets the students to design, develop and support **a global security system using the state of mind and reasoning on software systems security.**

The programme offers Life and Employability skills to communicate effectively with the computing community as well as society by being able to comprehend effective documentations and presentations. The students can apply the understanding of management principles with computing knowledge to manage the projects in multidisciplinary environments.

The students can avail additional certification courses to understand the societal, environmental, health, legal, ethical issues within local and global contexts and the consequential responsibilities relevant to professional practice.

Program Specific Outcomes (PSOs) of M.C.A

PSO1: Understand and apply the knowledge of computing skills inherited from the course to abstract and model real time problems.

PSO2: Integrate the problem solving and technical abilities to design and deploy software

PSO3: Identify, scrutinize, adopt and apply modern tools and technologies as per the requirements

PSO4: Realize the importance of working in a team and team building.

PSO5: Able to inculcate ad-hoc learning abilities with communication efficacy.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	PROGRAMMING IN C	MCA140T	<ul style="list-style-type: none"> • To impart adequate knowledge on the need of programming languages and problem solving techniques. • To learn and acquire the art of computer programming. • To develop programming skills using the fundamentals and basics of the C Language. • To enable effective usage of arrays, structures, functions, pointers and to implement the memory management concepts. • To instil the issues in file organization and the usage of file systems. 	<ul style="list-style-type: none"> • In-depth understanding of various concepts of C language. • Ability to read, understand and trace the execution of programs. • Skill to debug a program. • Skill to write program code in C to solve real world problem 	local developmental needs
2	INTERNET CONCEPTS AND WEB DESIGN	MCA141T	<ul style="list-style-type: none"> • To understand the basics HTML Tags. • To learn the concepts of web forms and validation. • To understand the importance of HTML and CSS3. • To learn the fundamentals of JavaScript. 	<ul style="list-style-type: none"> • Learn and apply the basic HTML Tags. • Build and design a web page with the help of basic web components. • Ability to use services offered by internet. • Draft and Design a webpage using CSS. 	Local developmental needs

3	COMPUTER ORGANIZATION AND ARCHITECTURE	MCA142T	<ul style="list-style-type: none"> • To understand the fundamentals of Boolean logic and functions. • To design and realize digital systems with basic gates and other components using combinational and sequential circuits • To have a thorough understanding of the basic structure and operation of a digital computer. • To study the instruction sets and operation of a processor. • To discuss in detail about the operation of the arithmetic and logic unit. 	<ul style="list-style-type: none"> • Ability to understand the functionality, organization and implementation of computer system. • Skill to recognize the instruction codes and formats. • Knowledge of the internal working of main memory, cache memory, associative memory and various modes of data transfer. • Familiarization with the working of parallel processing and vector processing. 	local developmental needs
4	BUSINESS PROCESS	MCA143T	<ul style="list-style-type: none"> • To know and understand the basics of business processes. • To learn how Information Technology is integrated with business process to improve its efficiency. 	<ul style="list-style-type: none"> • Analyze business processes and find solutions to existing business problems • Define your business processes, their objectives and how they flow within the organizational context. 	Regional developmental needs
5	OPTIMIZATION TECHNIQUES	MCA240T	<ul style="list-style-type: none"> • To obtain knowledge on linear programming problems, transportation problems, assignment problems, inventory models, queuing models, project management and Game theory problems. 	<ul style="list-style-type: none"> • Understand different types of Optimization Techniques in engineering problems. • Learn Optimization methods and analyze which technique can be applied for real time problems. 	Local developmental needs

6	OBJECT ORIENTED PROGRAMMING WITH C++	MCA241T	<ul style="list-style-type: none"> • To learn how C++ supports Object oriented principles such as inheritance, abstraction, polymorphism etc. • To understand and apply the principles hiding, localization and modularity in software development. • To use the generic programming features of C++ including the STL • To design and implement reliable and maintainable object-oriented applications of moderate complexity composed of several classes 	<ul style="list-style-type: none"> • Familiarization with a widely used programming concept – Object Oriented Programming. • Develop logical thinking. • Skill to write codes in C++ by applying concept of OOP, such as Objects, Classes, • Constructors, Inheritance etc., to solve mathematical or real world problems. • Ability to isolate and fix common errors in C++ programs 	national developmental needs
7	DATA STRUCTURES	MCA242T	<ul style="list-style-type: none"> • To learn the basic data structures and their applications. 	<ul style="list-style-type: none"> • Skill to analyze algorithms and to determine algorithm correctness and their time efficiency. • Knowledge of advanced abstract data type (ADT) and data structures and their implementations. • Ability to implement algorithms to perform various operations on data structures. 	national developmental needs
8	OPERATING SYSTEMS	MCA243T	<ul style="list-style-type: none"> • To learn what operating systems are, what they do, and how they are designed and constructed. 	<ul style="list-style-type: none"> • Ability to apply CPU scheduling algorithms to manage tasks. 	national developmental needs

			<ul style="list-style-type: none"> • To understand various scheduling algorithms, synchronization issues and deadlocks. • To understand the memory management techniques like paging and segmentation. • To understand the concepts of file system, allocation methods and Free space management. • To understand the concepts of disk scheduling. 	<ul style="list-style-type: none"> • Initiation into the process of applying memory management methods and allocation policies. • Knowledge of methods of prevention and recovery from a system deadlock 	
9	COMPUTER NETWORKS	MCA340T	<ul style="list-style-type: none"> • To know Network Fundamentals and Layered Protocols. • To understand two ways of routing concepts. • Making to know the functionality and concepts of various application layer protocols • To Understand Security issues and Managerial part of Network. 	<ul style="list-style-type: none"> • Knowledge of uses and services of Computer Network. • Ability to identify types and topologies of network. • Understanding of analog and digital transmission of data. • Familiarization with the techniques of Network Security. 	regional developmental needs
10	DATABASE MANAGEMENT SYSTEMS	MCA341T	<ul style="list-style-type: none"> • To understand basic database concepts, including the structure and operation of the Relational data model. • To construct simple and moderately advanced database queries using Structured Query Language (SQL). • To understand and successfully apply 	<ul style="list-style-type: none"> • Familiarization with Database Management System. • Comprehensive knowledge of database models. • Ability to code database transactions using SQL. • Skill to write PL/SQL programs 	national developmental needs

			<p>logical database design principles, including E-R diagrams and database normalization.</p> <ul style="list-style-type: none"> • To understand the role of the database administrator 		
11	SOFTWARE ENGINEERING	MCA342T	<ul style="list-style-type: none"> • To understand the Software Engineering Practice & Process Models. • To understand the basic concepts of software engineering and various process models. • To understand the software requirements and SRS document. • To understand in detail about the requirement analysis and requirement engineering processes. • To understand the concepts and principals involved in software design. • To understand the techniques involved in software project management and Risk management 	<ul style="list-style-type: none"> • Familiarization with the concept of software engineering and its relevance. • Understanding of various methods or models for developing a software product. • Ability to analyze existing system to gather requirements for proposed system. • Skill to design and code a software. 	regional developmental needs
12	ENTERPRISE APPLICATIONS WITH JAVA	MCA343T	<ul style="list-style-type: none"> • To understand basic fundamentals of object-oriented programming in Java. • To understand methods of the Applet and UI Component classes of the AWT. • To create a well-structured MVC web 	<ul style="list-style-type: none"> • Skill to write Java application programs using OOP principles and proper program structuring. • Ability to create packages and interfaces. 	national developmental needs

			application using Servlet and JSP.	<ul style="list-style-type: none"> Ability to implement error handling techniques using exception handling. 	
13	XML AND WEB SERVICES	MCA344T	<ul style="list-style-type: none"> To understand, write well-formed XML document, to write the schema for the given XML document in both DTD and XML Schema languages. To format XML data to the desired format. To parse XML dynamically by using DOM and SAX. To familiarize the students with the recent trends in industry and academia to address Web service. 	<ul style="list-style-type: none"> Skill to create XML documents and Schemas. Knowledge of service oriented computing paradigm, its evolution and the emergence of web services. Describe and explain quality of service aspects of web service provision, and show how these can be applied to Existing services to add value to them. 	regional developmental needs
14	LINUX AND NETWORK PROGRAMMING	MCA440T	<ul style="list-style-type: none"> To familiarize Linux Architecture and Commands To understand the concepts of Linux Kernel To learn the fundamentals of shell scripting/programming To understand and use elementary socket system calls and advanced socket system calls To understand how to use TCP and UDP based sockets 	<ul style="list-style-type: none"> Ability to use various Linux commands that are used to manipulate system operations at admin level and a prerequisite to pursue job as a Network administrator. Ability to design and write application to manipulate internal kernel level Linux File System. Ability to develop Network Programming that allows 	national developmental needs

				applications to make efficient use of resources available on different machines in a network.	
15	ENTERPRISE APPLICATIONS USING .NET	MCA441T	<ul style="list-style-type: none"> • To develop a stand-alone applications in the .NET framework using C#. • <i>To learn and build an applications with WPF control, styles and resources.</i> • To create web-based applications using ASP.NET and ADO.NET. 	<ul style="list-style-type: none"> • Infer and Apply the basics of structured programming. • Construct Develop stand-alone windows applications in the .NET framework. • Create web-based applications using ASP.NET. 	regional developmental needs
16	SOFTWARE TESTING AND QUALITY ASSURANCE	MCA442T	<ul style="list-style-type: none"> • To study the need of software reengineering and fundamental concepts in software testing • To highlight the different strategies for generating test cases. • To understand the essential characteristics of tool used for test automation. • To learn methods, techniques used to control the software quality 	<ul style="list-style-type: none"> • Observe and Explain the significance of software testing and quality assurance • Discuss and Elicit the basics of software testing, including objectives, process, criteria, strategies, and methodologies. • Devise and Design test cases from the given requirements using Black box testing techniques. • Observe, Recognize and do case studies on the need for System and user acceptance testing. 	regional developmental needs
17	DESIGN AND ANALYSIS OF ALGORITHMS	MCA443T	<ul style="list-style-type: none"> • To learn the basics of Algorithms a design methods with their applications. 	<ul style="list-style-type: none"> • Observe and elicit the relevance of algorithms for computational problems solving. • Differentiate and Compute the time and space complexities of an algorithm. 	national developmental needs

18	ELECTIVE I: STATISTICAL AND NUMERICAL METHODS	MCA444A	<ul style="list-style-type: none"> • This course aims at providing the necessary basic concepts of a few statistical and numerical methods and give procedures for solving numerically different kinds of problems occurring in engineering and technology. 	<ul style="list-style-type: none"> • Skill to choose and apply appropriate numerical methods to obtain approximate solutions to difficult mathematical problems. • Understanding of relationship between variables using the method of Correlation and Trend Fit Analysis. • Skill to execute programs of various Numerical Methods and Statistical Techniques for solving mathematical problems 	local developmental needs
19	ELECTIVE I: INTERNET OF THINGS	MCA444B	<ul style="list-style-type: none"> • To understand the vision of IoT from a global context. • To determine the Market perspective of IoT. • To know the devices, Gateways and Data Management in IoT. • To learn building state of the art architecture in IoT. • To know the application of IoT in Industrial and Commercial Building Automation and Real World Design Constraints. 	<ul style="list-style-type: none"> • Able to understand the basic architecture of Internet of Things based Devices • Able to analyze light weight protocols implemented for connected devices • Able to develop firmware for controlling wireless devices • Able to design and develop Smart Devices using IoT 	local developmental needs

20	ELECTIVE I: ARTIFICIAL INTELLIGENCE	MCA444C	<ul style="list-style-type: none"> • Study the concepts of Artificial Intelligence. • Learn the methods of solving problems using Artificial Intelligence 	<ul style="list-style-type: none"> • Discover and Apply the various technologies used in Artificial Intelligence. • Observe and Discover the history of artificial intelligence (AI) and its foundations 	national developmental needs
21	COMPUTER GRAPHICS AND ANIMATION	MCA540T	<ul style="list-style-type: none"> • To provide a comprehensive introduction to computer graphics leading to the ability to understand contemporary terminology, progress, issues, and trends. • To learn the principles and commonly used paradigms and techniques of computer graphics. • To impart a thorough knowledge on 2D and 3D transformations, modeling, image synthesis, and rendering. • To gain a proficiency with OpenGL for writing applications that produce 2D and 3D computer graphics. • To instill the fundamentals of animation principles and morphing. 	<ul style="list-style-type: none"> • To create an application using geometric primitives, with various effects such texture mapping, blending, lighting, fog, in OpenGL • To implement various algorithms scan, convert the basic geometrical primitives, transformations, clipping. • To describe the importance of viewing and projections. • To define the fundamentals of animation, virtual reality and its related technologies. • To understand a typical graphics pipeline. 	national developmental needs
22	DATA AND INFORMATION SECURITY	MCA541T	<ul style="list-style-type: none"> • To explain the key concepts in cryptography. 	<ul style="list-style-type: none"> • Observe and Discuss the basic principles of security. • Observe and Apply the substitution and transposition methods. 	Local developmental needs

23	OPEN SOURCE TECHNOLOGIES	MCA542T	<ul style="list-style-type: none"> • To understand the web technology and be able to architect, write, debug, and run complete web applications using PHP and MySQL • To understand the fundamentals of writing Python scripts, Python scripting elements. • To create a dynamic web page using Python 	<ul style="list-style-type: none"> • Describe and Discuss the necessity of open source framework in PHP and Java. • Observe and Elicit the basics of MVC concepts in AngularJS, Laravel and Spring Web. • Ability to choose appropriate framework and practice them in real time problem applications. 	national developmental needs
24	ELECTIVE II: FINANCIAL AND MANAGEMENT ACCOUNTING	MCA543A	<ul style="list-style-type: none"> • To acquaint the student with various techniques of Financial Accounting • To make the students understand the managerial aspect of accounting. 	<ul style="list-style-type: none"> • Understand the basic concepts of financial accounting, cost accounting and management accounting in students. • Make use of various tools of accounting for analyze business situation and take decision • Able to analyze the business financial position. 	local developmental needs
25	ELECTIVE II: MOBILE AND ITS APPLICATIONS	MCA543B	<ul style="list-style-type: none"> • To introduce and learn the basic concepts, frameworks, tools of mobile computing. • To learn to configure Android APIs and develop simple Android applications using basic tags. • To give practical experience in designing mobile applications and 	<ul style="list-style-type: none"> • Create device-specific and cross-platform mobile applications using best practice mobile design and development processes. • Install and configure Android application development tools. • Design and develop user 	local developmental needs

			services.	Interfaces for the Android platform.	
26	ELECTIVE II: CLOUD AND ITS APPLICATIONS	MCA543C	<ul style="list-style-type: none"> • To introduce the broad perceptives of cloud architecture and model. • To understand the concept of virtualization and design of cloud Services • To be familiar with the lead players in cloud. • To understand the features of cloud simulator 	<ul style="list-style-type: none"> • Observe and Discuss the fundamental ideas behind Cloud Computing. • List and Explain about cloud computing and the services that are available. • Understand the benefits Cost Effectiveness of Cloud computing and Analyze the Cost Effectiveness 	national developmental needs
27	ELECTIVE – III:MATHEMATICS FOR COMPUTER APPLICATIONS	MCA544A	<ul style="list-style-type: none"> • To understand the concepts and operations of matrix algebra needed for computing graphics modeling • To understand and apply the class of functions which transform a finite set into another finite set which relates to input output functions in computer science. • To impart discrete knowledge in computer engineering through finite automata and Context free grammars 	<ul style="list-style-type: none"> • Evaluate the validity of logical arguments and construct mathematical proofs. • Analyse whether given graphs are isomorphic and apply different algorithms to find the shortest path. • Apply the concept of two dimensional random variables to correlation, regression and Central limit theorem 	regional developmental needs

28	ELECTIVE – III: ENTERPRISE RESOURCE PLANNING	MCA544B	<ul style="list-style-type: none"> • To provide a basic understanding and knowledge of the Enterprise Computing techniques used in industries • To understand basic concepts, tools and Techniques of Enterprise Resource Planning • To analyze and propose IT solutions for the integration of business process throughout the enterprise • To aim for careers in various ERP consultancies, ERP-support services and Software Developers • To understand the business model and ERP Implementation 	<ul style="list-style-type: none"> • Observe and Comprehend the knowledge of business benefits of implementing the enterprise computing techniques in the industries. • Evaluate and comprehend the ERP system’s pre and post implementation phases. • Draft and Design ERP with future e-commerce / internet and compare the benefits of re-engineered business process through a case study. • Recognize and Observe the importance of ERP package through case studies 	regional developmental needs
29	ELECTIVE III: BIG DATA	MCA544C	<ul style="list-style-type: none"> • To understand the basics and challenges of Big Data. • To learn and practice NoSQL database MongoDB. • To develop MapReduce jobs using Hadoop Frameworks and HDFS 	<ul style="list-style-type: none"> • Classify the data grouping mechanism in structured, semi-structured, and unstructured form. • Observe and Practice the un-structural data representation using the NoSQL database MongoDB. • Generalize and Practice the Map-Reducer procedure on the specified problem. 	national developmental needs

Name of the Programme: BCA

Programme Outcomes (POs) at Undergraduate Level (POs)

Undergraduates will be able to	
PO1	Discuss their new knowledge and understanding; apply new ideas in - order to acquire employability/self-employment
PO2	Pursue higher learning programmes and become entrepreneurs
PO3	Recognize moral and ethical values and be socially responsible citizens in the society
PO4	Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.
PO5	Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings
PO6	Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.
PO7	Demonstrate communication skills both oral and written in personal and academic pursuits.

Programme Specific Outcomes (PSOs)

After Completion of the BCA Programme, the graduates will be able to	
PSO1	Obtain computing skills and apply software engineering principles and practices in software development
PSO2	Become a skilled employee in software industry, government, academia, research and other areas where computer applications are deployed.
PSO3	Acquire knowledge to pursue higher education in the IT and IT enabled specializations
PSO4	Develop team building and team leading capabilities with good communication skills, ethics and social responsibilities.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	PROBLEM SOLVING TECHNIQUES USING C	CA105	<ul style="list-style-type: none"> • To understand the basic concepts of C program and ability to write simple programs using different controls in C program. • To understand the various functions which are used in a C Program. • To be familiar with arrays and structures. • To develop problem solving skills with top down design principles. • To develop algorithm for Factoring Methods 	<ul style="list-style-type: none"> • Upon successful completion of this course, the students should be able to • Understand the basic concepts of C programming • Write simple C programs using function • Familiarize with array concepts • Develop problem solving skills • Write algorithms for simple programs 	Global Developmental Needs
2	WEB DESIGN TECHNOLOGY	CA106	<ul style="list-style-type: none"> • To understand the basic of HTML structure, tags, and presentation elements. • To understand the basic of HTML Images and Links. • To understand the basic of HTML List and Tables. • To understand the basic of Frames elements and Forms elements. • To understand the basic of CSS syntax, Inclusion, Measurement units and various CSS Properties. 	<ul style="list-style-type: none"> • Upon successful completion of this course, the students should be able to • Develop Website Accessibility. • Make detailed understanding of the structure of a page with the help of HTML. • Develop the innovative designing ability in designing web page. • Understand the basic of HTML List and Tables, frames elements and Forms elements. • Understand the basic of CSS 	Global Developmental Needs

				<p>syntax, Inclusion, Measurement units and various CSS Properties.</p>	
4	<p>COMPUTER ORGANIZATION AND ARCHITECTURE</p>	CA205	<ul style="list-style-type: none"> • To know the basic architecture of computer. • To understand the organization of a computer system in terms of its main components. • To understand different processor architectures and understand input/output mechanisms. • To understand the various parts of a system memory hierarchy. • To study the different ways of communicating with I/O devices and standard I/O interfaces 	<ul style="list-style-type: none"> • Upon completion of this course, the students should be able: • Know the basic architecture of computer. • Understand the organization of a computer system in terms of its main components. • Understand different processor architectures and understand input/output mechanisms. • Understand the various parts of a system memory hierarchy. • Study the different ways of communicating with I/O devices and standard I/O interfaces. 	<p>National Developmental Needs</p>
5	<p>OBJECT ORIENTED PROGRAMMING USING C++</p>	CA206	<ul style="list-style-type: none"> • To understand object oriented programming and advanced C++ concepts. • To understand the various functions and arguments in object oriented programming. • To understand the classes and objects in 	<ul style="list-style-type: none"> • Upon completion of this course, the students should be able: • Understand object oriented programming and advanced C++ concepts. • Understand the various functions and arguments in 	<p>Global Developmental Needs</p>

			<p>C++.</p> <ul style="list-style-type: none"> • To be familiar with inheritance and polymorphisms. • To be able to understand the concepts of files and exception handling. 	<p>object oriented programming.</p> <ul style="list-style-type: none"> • Understand the classes and objects in C++. • Familiarize with inheritance and polymorphisms. • Understand the concepts of files and exception handling. 	
6	DATA STRUCTURES	CA307	<ul style="list-style-type: none"> • To understand the performance of the implementations of basic linear data structures. • To understand the various operations of stack and queue. • To implement the linked data structures such as linked list and binary trees. • To be familiar with several sorting and searching algorithms. • To be familiar with some graph algorithms such as shortest path and minimum spanning tree. 	<ul style="list-style-type: none"> • Upon completion of this course, the students should be able: • To understand the performance of the implementations of basic linear data structures. • Understand the various operations of stack and queue. • Implement the linked data structures such as linked list and binary trees. • Familiarize with several sorting and searching algorithms. • Familiarize with some graph algorithms such as shortest path and minimum spanning tree. 	Global Developmental Needs

7	PROGRAMMING USING JAVA	CA308	<ul style="list-style-type: none"> • To understand the basics of Object Oriented Programming concepts, Character Set, tokens, variables, data types, operators and control structure. • To understand the fundamental concept of Java like class and object, array, methods, constructors and inheritance. • To understand the concept of package, Exception Handling and Threading. • To understand the concepts of Applets and AWT. • To understand the concepts of JDBC connectivity. • 	<ul style="list-style-type: none"> • Understand the basics of Object Oriented Programming concepts, Character Set, tokens, variables, data types, operators and control structure. • Understand the fundamental concept of Java like class and object, array, methods, constructors and inheritance. • Understand the concept of package, Exception Handling and Threading. • Understand the concepts of Applets and AWT. • Understand the concepts of JDBC connectivity. 	Global Developmental Needs
8	OPERATING SYSTEM	CA309	<ul style="list-style-type: none"> • To understand what are an operating system and the role it plays. • To analyze the structure of operating systems, applications and relationship between them. • To grasp some knowledge of the services provided by operating systems. • To expose to details of major OS concepts. • To identify and define key terms related to operating systems 	<ul style="list-style-type: none"> • Upon successful completion of course, the students should be able • Understand what are an operating system and the role it plays. • Analyze the structure of OS, applications and relationship between them. • Grasp some knowledge of the services provided by operating systems. • Exposure to some details of major OS concepts. 	Global Developmental Needs

				<ul style="list-style-type: none"> Exemplify the concept of virtualization technology. 	
9	DSE- I: OBJECT ORIENTED ANALYSIS AND DESIGN	CA310A	<ul style="list-style-type: none"> To understand the diagrams UML. To prepare the students to draw class modeling diagrams. To make the students to understand the importance of state modeling diagrams. To become knowledgeable in interaction modeling diagrams. To understand the basic concept of system conception and design 	<ul style="list-style-type: none"> Upon successful completion of course, the students should be able Draw the basic diagrams of UML. Preparing the students to draw class modeling diagrams. Understand the importance of state modeling diagrams. Become knowledgeable in interaction modeling diagrams. Get project ideas from different sc 	National Developmental Needs
10	DSE- I:SYSTEM ANALYSIS AND DESIGN	CA310B	<ul style="list-style-type: none"> To learn the system development design strategies. To understand structured analysis development methods. To know computer input and output design strategies. To design online dialogue and auxiliary storage devices. To understand the Systems engineering and quality assurance concepts. 	<ul style="list-style-type: none"> Upon successful completion of course, the students should be able Learn the system development design strategies. Understand structured analysis development methods. Know computer input and output design strategies. Design online dialogue and auxiliary storage devices. Exemplify Systems engineering and quality assurance concepts. 	National Developmental Needs

11	DSE- I:MANAGEMENT AND INFORMATION SYSTEM	CA310C	<ul style="list-style-type: none"> • To demonstrate effective communication individuals, teams and large groups. • To demonstrate effective analytical and critical thinking skills. • To distinguish and analyze ethical problems that occurs in business and society. • To apply leadership skills and competencies in business situations. • To demonstrate an understanding of the various functional areas of Business. 	<ul style="list-style-type: none"> • Upon successful completion of this subject students should be able to: • Use analytical and reflective skills in decision making. • Communicate effectively both orally and in writing. • Recognize legal and ethical issues and confronting them. • Contribute to the performance of a group within a business setting. • Develop, control, and manage projects. 	National Developmental Needs
12	CERTIFICATE COURSE-I:GO PROGRAMMING		<ul style="list-style-type: none"> • To understand the basics of GO. • To understand the Functions and Arrays of GO. • To learn the Concept of Pointers and Structures. • To learn the Concept of Slice and Maps. • To learn the Syntax of Recursion and Interface. 	<ul style="list-style-type: none"> • Upon successful completion of this certificate course, the students should be able to: • Understand the basics of GO. • Understand the Functions and Arrays of GO. • Learn the Concept of Pointers and Structures. • Learn the Concept of Slice and Maps. • Learn the Syntax of Recursion and Interface. 	Global Developmental Needs

13	SOFTWARE ENGINEERING	CA407	<ul style="list-style-type: none"> • To Understand the Software Engineering Practice and Process Models. • To Understand Design Engineering, Web applications and Software Project Management. • To develop project based experience in software project management. • To understand on quality control and how to ensure good quality software. • Development of significant teamwork and project based experience. 	<ul style="list-style-type: none"> • Upon successful completion of this course, the students should be able to: • Understand the Software Engineering Practice and Process Models. • Understand Design Engineering, Web applications and Software Project Management. • Develop project based experience in software project management. • Understand on quality control and how to ensure good quality software. • Development of significant teamwork and project based experience. 	National Developmental Needs
14	WINDOWS APPLICATION USING .NET	CA408	<ul style="list-style-type: none"> • To understand the basics of C# language. • To program using Object Oriented Concepts in C#. • To create and use user controls in a Windows Forms application. • To code in Windows Presentation Foundation. • To bind Windows Forms applications with various data sources by using Microsoft ADO.NET. 	<ul style="list-style-type: none"> • Upon successful completion of this course, the students should be able to: • Understand the basics of C# language. • Program using Object Oriented Concepts in C#. • Create and use user controls in a Windows Forms application. • Code in Windows Presentation Foundation. 	Global Developmental Needs

				<ul style="list-style-type: none"> • Bind Windows Forms applications with various data sources by using Microsoft ADO.NET. 	
15	RELATIONAL DATABASE MANAGEMENT SYSTEM	CA409	<ul style="list-style-type: none"> • To understand the basic concepts of Data and Data Models. • To understand the consequences of database design and how it can be overcome • To learn how to implement the query languages in database. • To know what is the role of PL/SQL in RDBMS. • To have the basic knowledge on NoSQL 	<ul style="list-style-type: none"> • Upon successful completion of this subject students should be able to: • To make the student to know about the database schema and learn the basic terminologies used in database • To enable the student to learn the life cycle and development of database management systems • To facilitate the student to write SQL queries to manipulate data • To help the student to learn PL/SQL programming • To make the student to access database without query languages 	Global Developmental Needs

16	COMPUTER GRAPHICS	CA410	<ul style="list-style-type: none"> • To exemplify the major computer graphic application areas. • To explain the operations of graphics hardware systems. • To explain some classic 2D and 3D graphics algorithms. • To create computer models of 2D and 3D objects using mathematical knowledge and skills. • To implement the computer models using OpenGL and a high level programming language C++. • 	<ul style="list-style-type: none"> • Upon successful completion of this course, the students should be able to: • To exemplify the major computer graphics application areas. • To explain the operations of graphics hardware systems. • To explain some classic 2D and 3D graphics algorithms. • To create computer models of 2D and 3D objects using mathematical knowledge and skills. • Quickly learn future computer graphics concepts and APIs. 	National Developmental Needs
17	CERTIFICATE COURSE- II:GRAPHQL		<ul style="list-style-type: none"> • Designed to solve many of the issues of working with REST. • Able to build production ready applications with both GraphQL and RelayJS. • How a data layer can be implemented for your web application using GraphQL. • Get to grip with GraphQL for creating data containers, data masking. • Use to create new choice for implementing APIs. 	<ul style="list-style-type: none"> ○ Upon successful completion of this certificate course, the students should be able to: • Design to solve many of the issues of working with REST. • Build production ready applications with both GraphQL and RelayJS. • Implement web application using GraphQL. 	Global Developmental Needs

				<ul style="list-style-type: none"> • Get to grip with GraphQL for creating data containers, data masking. • Use to create new choice for implementing APIs 	
18	COMPUTER NETWORKS	CA509	<ul style="list-style-type: none"> • To understand the organization of computer networks. • To test and implement the different network connections. • To understand the performance of network layers like IPv4 and Ipv6 addresses. • To understand the way protocols currently in use in the Internetwork and the requirements for designing network protocols. • To understand the concepts of WWW and electronic mail. 	<ul style="list-style-type: none"> ○ Upon successful completion of this course, the students should be able to: <ul style="list-style-type: none"> • Understand the organization of computer networks. • Test and implement the different network connections. • Understand the performance of network layers like IPv4 and Ipv6 addresses. • Understand the way protocols currently in use in the Internetwork and the requirements for designing network protocols. • Understand the concepts of WWW and electronic mail. 	National Developmental Needs

19	E-COMMERCE	CA510	<ul style="list-style-type: none"> • To learn the history of E-Commerce in Indian Business Context. • To learn the basic E-Business models. • To know the E-marketing strategies. • To understand the principles in E-Security systems. • To know the types of E-Payment Systems 	<ul style="list-style-type: none"> ○ Upon successful completion of this course, the students should be able to: <ul style="list-style-type: none"> • Learn the history of E-Commerce in Indian Business Context. • Understand the basic E-Business models. • Know the E-marketing strategies. • Get knowledge of the principles in E-Security systems. • Know the types of E-Payment Systems. 	Global Developmental Needs
20	ENTERPRISE JAVA APPLICATION	CA511	<ul style="list-style-type: none"> • To acquire the basic knowledge required for building enterprise applications using JAVA. • To understand the role of servlet in creating web based applications. • To have the basic knowledge in Java Server Pages and its role in distributed system. • To understand the advantages of Java Server Faces over Java Server Pages. • To program in Java Server Faces framework 	<ul style="list-style-type: none"> ○ Upon successful completion of this subject students should be able to: <ul style="list-style-type: none"> • Enable the student to understand the components of RMI. • Make the student to understand the background and benefits of EJP. • Enable the student to learn about web services used in EJP programming. • Make the student to write 	Global Developmental Needs

				<p>Servlet programming.</p> <ul style="list-style-type: none"> • Enable the student to develop web applications using JSP and JSF. 	
21	<p>WEB PROGRAMMING USING PHP</p>	CA512	<ul style="list-style-type: none"> • To understand the basic fundamental syntax and functions. • To understand form processing and validation methods. • To know file handling concepts. • To understand basic MySQL functions. • To implement PHP using XML functions 	<ul style="list-style-type: none"> ○ Upon successful completion of this subject students should be able to: <ul style="list-style-type: none"> • Understand the basic fundamental syntax and functions. • Process forms and validation methods. • Know file handling concepts. • Understand basic MySQL functions. • Execute PHP using XML functions. 	<p>Global Developmental Needs</p>
22	<p>NON MAJOR ELECTIVE- I: INTRODUCTION TO INFORMATION TECHNOLOGY</p>	NCA503	<ul style="list-style-type: none"> • To understand the basic of computer, Evaluation of computers, Generation and basic computer organization. • To understand the basic of number system and converting from one number system to another. • To understand the basic of processor, memory and secondary storage device. • To understand the basic of computer languages and characteristics of a good programming languages. • To understands the basic concepts of 	<ul style="list-style-type: none"> • Upon successful completion of this subject students should be able to: <ul style="list-style-type: none"> • Understand the basic of computer, Evaluation of computers, Generation and basic computer organization. • Know the basic of number system and converting from one number system to another. • Get knowledge of the basic of processor, memory and 	<p>National Developmental Needs</p>

			input and output organization.	<p>secondary storage device.</p> <ul style="list-style-type: none"> • Understand the basic of computer languages and characteristics of good programming languages. • Understand the basic concepts of input and output organization. 	
23	CLOUD COMPUTING	CA607	<ul style="list-style-type: none"> • To learn basic concepts in cloud computing. • To understand various features of virtualization. • To learn the basic architecture of cloud. • To understand Aneka cloud application platform. • To understand cloud platforms and its applications. 	<ul style="list-style-type: none"> • Upon successful completion of this subject students should be able to: • Learn basic concepts in cloud computing. • Understand various features of virtualization. • Learn the basic architecture of cloud. • Understand Aneka cloud application platform. • Understand cloud platforms and its applications 	Global Developmental Needs
24	DSE-II:UNIX AND	CA610A	<ul style="list-style-type: none"> • To learn to add and remove users. • To understand basic UNIX commands. • To use controls structures. • To understand loop structures. • To understand System calls. 	<ul style="list-style-type: none"> ○ Upon successful completion of this course, the students should be able to: • Learn to add and remove users. 	Global Developmental Needs

	SHELL PROGRAMMING			<ul style="list-style-type: none"> • Understand basic UNIX commands. • Use controls structures. • Understand loop structures. • Get familiarize with System calls concepts. 	
25	DSE-II: MOBILE APPLICATIONS	CA610B	<ul style="list-style-type: none"> • To impart the basis of mobile application and development environment. • To learn HTML5. • To use CSS & JavaScript in Mobile. • To develop simple and professional application. • To prepare for the job opportunity in mobile application development 	<ul style="list-style-type: none"> ○ Upon successful completion of this course, the students should be able to: <ul style="list-style-type: none"> • Impart the basis of mobile application and development environment. • Learn HTML5. • Use CSS & JavaScript in Mobile. • Develop simple and professional application. • Deploy the mobile application. 	Global Developmental Needs
26		CA610C	<ul style="list-style-type: none"> • To learn about the technical complexities, and implementations that allows one to make the most of XML and its related technologies. • To define the legal building blocks of an XML document and define the 	<ul style="list-style-type: none"> ○ Upon successful completion of this course, the students should be able to: <ul style="list-style-type: none"> • Separate data from HTML using XML. • Learn simplifying data sharing. 	Global Developmental Needs

	DSE-II:CLIENT SIDE SCRIPTING TECHNOLOGIES		<p>document structure with a list of legal elements and attributes.</p> <ul style="list-style-type: none"> • To apply an HTML document that can provide dynamic interactivity on websites using JavaScript. • To learn things like HTML document traversal and manipulation. • To parse in client-server applications and to implement understand JSON. • 	<ul style="list-style-type: none"> • Learn simplifying platform change and increase data availability. • Develop animation skills JSON. • Develop dynamic web pages using JAVASCRIPT. 	
27	WEB APPLICATION USING .NET	CA608	<ul style="list-style-type: none"> • To configure an asp.net application. • To create ASP.Net applications using standard .net controls. • To develop a data driven web application. • To connect the data sources and managing them. • To maintain the session and controls related information for user used in multi-user web applications. • 	<ul style="list-style-type: none"> ○ Upon successful completion of this course, the students should be able to: <ul style="list-style-type: none"> • To configure an ASP.Net application. • To create ASP.Net applications using web forms. • To understand the concept of web controls. • To validate the form controls. • To understand the process of data access in ASP.Net. 	Global Developmental Needs
28		CA609	<ul style="list-style-type: none"> • To understand the concepts of vectors and data types. • To understand the various R functions and strings in R Programming. 	<ul style="list-style-type: none"> ○ Upon successful completion of this course, the students should be able to: <ul style="list-style-type: none"> • Understand the concepts of 	Global Developmental Needs

	R PROGRAMMING		<ul style="list-style-type: none"> • To understand the concepts of data frame and reshaping. • To become more popular in charts and graphs. • To understand the mean, median and mode in R statistics. 	<ul style="list-style-type: none"> • vectors and data types. • Understand the various R functions and strings in R Programming. • Understand the concepts of data frame and reshaping. • Become more popular in charts and graphs. • Understand the mean, median and mode in R statistics. 	
29	NON MAJOR ELECTIVE-II: MULTIMEDIA	NCA603	<ul style="list-style-type: none"> • To understand the basic of Multimedia, Delivering Multimedia, Using Text and Fonts in Multimedia. • To understand the basic of making still images, Understanding natural lights and color and various image file formats. • To understand the basic of sounds, digital and MIDI audio, multimedia sound systems and sounds to your multimedia project. • To understand the basic of animation, principles of animation and making animations. • To understand the basic of working, displaying, shooting and editing of video. 	<ul style="list-style-type: none"> ○ Upon successful completion of this course, the students should be able to: <ul style="list-style-type: none"> • Understand the basic of Multimedia, Delivering Multimedia, Using Text and Fonts in Multimedia. • Understand the basic of making still images, Understanding natural lights and color and various image file formats. • Understand the basic of sounds, digital and MIDI audio, multimedia sound systems and sounds to your multimedia project. 	Global Developmental Needs

				<ul style="list-style-type: none"> • Understand the basic of animation, principles of animation and making animations. <ul style="list-style-type: none"> ○ Understand the basic of working, displaying, shoot and editing of video. 	
30	SOFTWARE DOCUMENTATION		<ul style="list-style-type: none"> • To make the student to study basic principles of software documentation. • To introduce students to different forms of software documentation. • To make the student to be aware of the process of software documentation. • To know the tools for software documentation. • To make the student to prepare software document. 	<ul style="list-style-type: none"> ○ Upon completion of this course, the student should be able to : • Make the student to study basic principles of software documentation. • Introduce students to different forms of software documentation. • Make the student to be aware of the process of software documentation. • Know the tools for software documentation. • Make the student to prepare software document. 	National Developmental Needs

M.Phil. BIOCHEMISTRY CURRICULUM 2017-18

Programme Outcomes at M.Phil. Level

- Describe the fundamentals of Biochemistry as a developing field of study.
- Utilize chemical principles to elucidate the characteristics of biological molecules.
- Show that you comprehend the fundamental ideas and mechanisms underlying metabolism.
- To comprehend the coordinated working of the cell's metabolic processes, which supply energy for the cell's existence.
- To comprehend enzyme kinetics and how the molecules catalyze processes.

Programme Specific Outcomes

Students who graduate with a Master of Philosophy in Biochemistry will,

- Learn to work as a team as well as independently to retrieve information, carry out Research investigations and result interpretations.
- Develop the ability to understand and practice the ethics surrounding scientific Research.
- Realize the impact of science in society and plan to pursue research.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
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1	Research Methodology	-	<ul style="list-style-type: none"> • To learn the Importance of Research and Ethics in Scientific research • To understand the collection and classification of research data. • To know the scope of Bioinformatics, the role of Computers in Biology and Useful search engines. • To acquire in-depth knowledge about the Laboratory animals used for Life science research. • To explain the Composition of the Institutional Ethical Committee (IEC) and General ethical issues. 	<ul style="list-style-type: none"> • Observe the basic concepts of scientific research, types of research and research design. • Establish the knowledge about scientific writing and research publications • Generalize the Collection and Classification of Data and its analysis. • Perceive the Scope of Bioinformatics, and useful search engines for finding scientific articles. • Point out the Laboratory animals used for Life science research and its ethical issues. • Develop an understanding of the Composition of the Institutional Ethical Committee (IEC), IPR and Patenting. • 	National
2	Tools in Biochemistry	-	<ul style="list-style-type: none"> • To study the principle, procedure and applications of electrophoresis. • To understand the principle, procedure and applications of microscopes. • To study the principle, procedure and applications of chromatography. • To learn the principle, procedure 	<ul style="list-style-type: none"> • Understand the core concepts of all analytical techniques • Describe the basic principle, types, procedure and applications of electrophoresis • Acquire knowledge about advanced microscopy techniques • Correlate the various types of chromatographic techniques • Justify the principle, instrumentation 	Local

			<p>and applications of centrifugation techniques.</p> <ul style="list-style-type: none"> To know the principle, procedure and applications of spectrophotometry. 	<p>and applications of various spectroscopy techniques</p> <ul style="list-style-type: none"> Schematize the Principle and applications of Atomic flame and flameless spectrophotometry 	
3	Bioinformatics	-	<ul style="list-style-type: none"> To give focus on online resources in life sciences and applications of Bioinformatics in scientific research. To determine the function of genes and proteins, to establish evolutionary relationships, and to calculate the three-dimensional shape of proteins by using computer programs. To learn algorithms and statistics for assessing the relationships among large sets of biological data. To know the tools for the analysis and interpretation of the various biological data. To understand various databases and learn the useful biological information. 	<ul style="list-style-type: none"> Understand the history and basic concepts in bioinformatics. Determine the formative databases available for all the biological macromolecules. Analyze global and local sequence alignment tools and their importance. List the various protein structure prediction methods through computational approaches. Integrate the significance of gene prediction methods. Evaluate the tools and software in the analysis of nucleic acid and protein. 	Global
4	Bionanotechnology	-	<ul style="list-style-type: none"> To understand the fundamental principles of nanotechnology and its applications. To study about the basic knowledge about nanoparticles and its biological applications. 	<ul style="list-style-type: none"> Demonstrate the fundamental principles of nanotechnology and their application to biomedical engineering. Exhibit the state-of-the-art nano-fabrication methods 	National

			<ul style="list-style-type: none"> • To apply engineering concepts and demonstrate a comprehensive understanding of state-of-the-art nano- scale and nano-fabrication methods. • To evaluate the processing conditions to engineer functional nanomaterials. • To apply and transfer interdisciplinary approaches to bionanotechnology. 	<ul style="list-style-type: none"> • Apply the knowledge of assessing nanomaterials and their safety • Make inferences on handling methods required during characterization • Justify the usage of nanomaterials in biological applications. • Compile the information about nanomedicines and their uses. 	
5	Clinical Biochemistry	-	<ul style="list-style-type: none"> • To learn about the specimen: composition, collection and various clinical methods. • To gain the knowledge about metabolic disorders associated with carbohydrate and lipids. • To familiarize with the renal disorders linked with protein metabolism and non-protein nitrogenous constituents. • To understand the functions of liver and its associated disorders. • To understand the oxidative stress and damage to the macromolecules. 	<ul style="list-style-type: none"> • Express the various methods in collection and analysis of clinical specimens like blood and urine. • Determine the clinical defect of numerous disorders linked to carbohydrate and lipoprotein metabolism. • Examine the type of renal disorder based on the concentration of blood substances like urea, creatinine and uric acid. • Categorize the disorder associated with serum enzymes like Acid phosphatase, Streptokinase, Asparaginase, Isocitrate dehydrogenase, Ceruloplasmin, CK and LDH. • Evaluate the types of jaundice by the level of serum conjugated and unconjugated bilirubin. 	National

				<ul style="list-style-type: none"> • Compile the effect of free radicals and role of enzymatic and non-enzymatic antioxidants on the macromolecules. 	
6	Environmental Technology	-	<ul style="list-style-type: none"> • To gain knowledge on toxic substances and biochemical basis of toxicity. • To understand the sources and routes of the various toxic substances in the environment. • To learn about environmental impacts of pesticides and xenobiotics. • To study about the toxicity testing and their interpretations. • To understand the causes of organ toxicity. 	<ul style="list-style-type: none"> • Demonstrate the degradable and non-degradable toxic substances and action mechanism of toxicity. • Define the transport of toxins by air, water and food chain; explain the combined effect of xenobiotics. • Determine the environmental impacts of various pesticides and effect of xenobiotics on aquatic organisms. • Outline the legal, regulatory and ethical considerations relating to toxicity within the broader societal context. • Find the lethal concentration and lethal dose of toxic substances by toxicity testing. • Compile the causes of hepatotoxicity, nephrotoxicity, pulmonary toxicity and neurotoxicity. 	Global

Name of the Programme: M.Sc Biochemistry

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	CELL DYNAMICS	BC705	<ul style="list-style-type: none"> • To learn the prokaryotic and eukaryotic cellular organization and acquire knowledge on cell cycle and cell division. • To understand the communication and transport across the cell membrane. • To know the histopathology techniques and staining methods. • To understand the membrane proteins and their interactions with other cellular components. • To explain the molecular basis of apoptosis and necrosis 	<ul style="list-style-type: none"> • Acquire broad knowledge on prokaryotic and eukaryotic cellular organization, cell cycle and cell division. • Define and provide an understanding of the structure of cell and function of various subcellular organelles. • Examine the theory and practice of histological techniques and staining of tissues using routine and specialized techniques. • Learn the basic concepts on the membrane proteins and their interactions with other cellular components. • Determine the transport mechanisms across biological membranes and learn the concept and mechanism of ATP synthesis. • Compile the information on cell aging and cell death mechanisms. 	Global developmental needs

2	BIOMOLECULES	BC706	<ul style="list-style-type: none"> • To understand the nature of various biomolecules present in living cells. • To get exposed to key contributions of scientists such as G.N. Ramachandran and Watson - Crick etc. in order to create scientific interest amongst students in life processes. • To learn the properties of carbohydrates, proteins, lipids, cholesterol, DNA, RNA, glycoproteins and glycolipids and their importance in biological systems. • To understand the organic chemical principles in life processes. • To develop skills to determine amino acid and nucleotide sequences of proteins and DNA respectively. 	<ul style="list-style-type: none"> • Describe the role of biomolecules in biosystem • Summarize the Carbohydrates– classification, structure and functions • Categorize the proteins based on its structure and function • Determine the structure and functions of Nucleic acids • Perceive Lipids based on its structure and functions • Identify the Water soluble and Fat soluble Vitamins 	Global developmental needs
3	HUMAN PHYSIOLOGY AND NUTRITION	BC707	<ul style="list-style-type: none"> • To understand the composition and functions of Blood and Plasma. • To know the process of gaseous exchange in 	<ul style="list-style-type: none"> • Describe the structure of major human organs and explain their role in the maintenance of healthy individuals. • Correlate the process of gaseous exchange in tissues and lungs, 	Global developmental needs

			<p>tissues and lungs, respiratory adaption to high altitude.</p> <ul style="list-style-type: none"> • To understand the nerve physiology and muscle physiology. • To gain insight into digestive system and renal physiology. • To gain awareness on nutritional requirements and energy measurements. 	<p>respiratory adaption to high altitude.</p> <ul style="list-style-type: none"> • Measure the heart function and learn the circulatory system • Determine the muscular system and excretory system • Classify the nutritional requirement for different age people, during pregnancy and Lactation • Compile the energy measurements, BMR, SDA, RNI and RDA 	
4	ELECTIVE – I – BIOINFORMATICS	BC708A	<ul style="list-style-type: none"> • To give focus on online resources in life sciences and applications of Bioinformatics in scientific research. • To determine the function of genes and proteins, to establish evolutionary relationships, and to calculate the three-dimensional shape of proteins by using computer programs. • To learn algorithms and statistics for assessing the relationships among large sets of biological data. • To know the tools for the analysis and 	<ul style="list-style-type: none"> • Understand the history and basic concepts in bioinformatics. • Determine the formative databases available for all the biological macromolecules. • Analyze global and local sequence alignment tools and their importance. • List the various protein structure prediction methods through computational approaches. • Integrate the significance of gene prediction methods. • Evaluate the tools and software in the analysis of nucleic acid and protein. 	National developmental needs

			<p>interpretation of the various biological data.</p> <ul style="list-style-type: none"> To understand various databases and learn the useful biological information. 		
5	INDUSTRIAL MICROBIOLOGY	BC708B	<ul style="list-style-type: none"> To learn about the basic concepts of industrial microbiology and industrially important microbes. To understand the microbial fermentation process, fermenters types and fermentation techniques. To gain the knowledge about inoculum development, raw materials used in fermentation process. To become familiar with the food preservation techniques and fermented dairy, brewers products. To understand the food preservation techniques and uses of microbes in waste management. 	<ul style="list-style-type: none"> Identify the different types of fermenters and explain the various fermentation strategies and the growth of industrial microorganisms. Explain the inoculum development methods, various types of raw materials used in fermentation process and scale up process of fermentation Manipulate the fermentation media, microbial inoculum and strain for different types of microbial fermentation process. Categorize the primary and secondary metabolites production techniques and Describe about industrially important microbes. Evaluate the various food preservation methods and identify the fermented dairy, baker's and brewing products. Propose a waste management system, design new composting technique and biogas unit. 	Regional developmental needs

6	STEM CELL TECHNOLOGY	BC708C	<ul style="list-style-type: none"> • To learn about the basics of stem cells. • To understand the embryonic and adult stem cell therapy. • To examine the increasing potential of stem cell in medicine and understanding of the molecular determinants. • To develop the ability to understand the role of stem cells in research. • To learn about Stem cell based therapies in animal models. 	<ul style="list-style-type: none"> • Enumerate the basics of stem cells and the concepts of embryonic and adult stem cell therapy. • Examine the increasing potential of stem cell science to contribute to medicine and understanding of the molecular determinants that define stem cells. • Demonstrate in vitro manipulation to create distinct cell lineages and understanding of the methodologies used for reverse engineering of mature cells to create induced pluripotent stem cells. • Compile the basic research methodologies used in current stem cell research. • Determine the ethical issues associated with stem cell research. • Defend the stem cell based therapies in animal models. 	National developmental needs
7	INSTRUMENTATION BIOCHEMISTRY	BC804	<ul style="list-style-type: none"> • To study the principle, procedure and applications of electrophoresis. • To understand the principle, procedure and applications of microscopes. 	<ul style="list-style-type: none"> • Understand the core concepts of all analytical techniques • Describe the basic principle, types, procedure and applications of electrophoresis • Acquire knowledge about advanced microscopy techniques 	Regional developmental needs

			<ul style="list-style-type: none"> • To study the principle, procedure and applications of chromatography. • To learn the principle, procedure and applications of centrifugation techniques. • To know the principle, procedure and applications of spectrophotometry 	<ul style="list-style-type: none"> • Correlate the various types of chromatographic techniques • Justify the principle, instrumentation and applications of various spectroscopy techniques • Schematize the Principle and applications of Atomic flame and flameless spectrophotometry 	
8	ADVANCED ENZYMOLOGY	BC805	<ul style="list-style-type: none"> • To acquire fundamental knowledge on enzymes and their importance in biological reactions. • To understand the ability to difference between a chemical catalyst and biocatalyst. • To know the mechanism of enzyme and its importance in biological reactions. • To learn the kinetics of enzyme catalyzed reactions and enzyme inhibitory and regulatory process. • To understand the role of enzymes in clinical diagnosis and industries 	<ul style="list-style-type: none"> • Describe the structure, classification and functions of enzymes • Analyze the kinetics of enzyme and chemical catalyzed reactions • Assess the mechanism of enzyme action and enzyme inhibitory and regulatory process. • Summarize the isolation and purification of enzymes • Identify the enzyme immobilization methods and their applications • Determine the applications of enzymes and their future potential 	Global developmental needs

9	ELECTIVE II IMMUNOLOGY	BC806A	<ul style="list-style-type: none"> • To gain acquaintance on the organs involved in the immune system, antigens and different types of antibody. • To acquire knowledge on types of immunity, immune response and complement system. • To gain knowledge about different vaccines and the importance of different immunological techniques. • To acquire knowledge about the MHC complex, transplantation immunology and tumor immunology. • To comprehend the complications of hypersensitivity, Autoimmune diseases and Immunodeficiency disorders 	<ul style="list-style-type: none"> • Anatomy of Lymphoid organs, immune cells and its associated theories • Discuss the Types of Immunity, Immune response and Complement system. • Focus on different vaccines and the importance of different immunological techniques. • Compile the MHC complex and Transplantation immunology • Explores the properties of tumor cells, Immune surveillance and tumor antigens. • Outline the complications of hypersensitivity, Autoimmune diseases and Immunodeficiency disorders. 	Global developmental needs
10	ELECTIVE II- ECOLOGY, EVOLUTION AND BIODIVERSITY	BC806B	<ul style="list-style-type: none"> • To learn the fundamental principles of evolutionary theory to explore the evolution of biodiversity. • To make familiar with the major groups of organisms related to one 	<ul style="list-style-type: none"> • Provide in-depth knowledge about emergency of evolutionary thoughts and Darwin concepts. • Review the origin of cell, unicellular evolution, Abiotic synthesis and prokaryotic evolution. 	Local developmental needs

			<p>another.</p> <ul style="list-style-type: none"> • To learn the basic ecological theory and proposing solutions to the major environmental problems. • To understand the concepts of genetic variation, Mendelian genetics and recombination. • To gain the knowledge about aquatic biotic production and biodegradation in different ecosystems. 	<ul style="list-style-type: none"> • Analyze the population genetics with various types of selection like sexual selection, gene drift and gene flow. • Establish the ecological interaction between an organism and environment. • Manage the ecosystem dynamics, stability and complexity by knowing the N, P, C and S cycles. • Assess the various kinds of aquatic habitat in the eco-management process and biodegradation of different ecosystem. 	
11	ELECTIVE II - ENVIRONMENTAL TOXICOLOGY	BC806C	<ul style="list-style-type: none"> • To gain knowledge on toxic substances and biochemical basis of toxicity. • To understand the sources and routes of the various toxic substances in the environment. • To learn about environmental impacts of pesticides and xenobiotics. • To study about the toxicity testing and their interpretations. • To understand the causes 	<ul style="list-style-type: none"> • Demonstrate the degradable and non-degradable toxic substances and action mechanism of toxicity. • Define the transport of toxins by air, water and food chain; explain the combined effect of xenobiotics. • Determine the environmental impacts of various pesticides and effect of xenobiotics on aquatic organisms. • Outline the legal, regulatory and ethical considerations relating to toxicity within the broader societal context. • Find the lethal concentration and lethal dose of toxic substances by toxicity 	Local developmental needs

			of organ toxicity.	testing. <ul style="list-style-type: none"> • Compile the causes of hepatotoxicity, nephrotoxicity, pulmonary toxicity and neurotoxicity. 	
12	INTERMEDIARY METABOLISM	BC906	<ul style="list-style-type: none"> • To determine the biochemical reactions, central metabolic pathways and kinetics of energy and homeostasis of metabolism. • To learn the importance of lipids as storage molecules and as structural component of biomembranes. • To understand the importance of high energy compounds, electron transport chain, and synthesis of ATP under aerobic and anaerobic conditions. • To acquire knowledge related to the role of TCA cycle in central carbon metabolism, importance of anaplerotic reactions and redox balance. • To gain insights into metabolic engineering for the production of useful 	<ul style="list-style-type: none"> • Observe the basic concepts of Bioenergetics, mechanisms of oxidative phosphorylation and photophosphorylation • Analyze how various biomolecules are metabolized inside the body in order to produce energy for various functions and how various metabolic pathways regulate growth and development of living beings • Determine the composition and structure of biomembranes, transport mechanisms across biological membranes and learn the concept and mechanism of ATP synthesis. • Justify the role of high energy compounds, how carbohydrates serve as energy source to power various functions, interplay of regulatory networks in the body, hormonal regulation of metabolism, etc. • Recognize the role of lipids as storage molecules, role of TCA cycle in central 	Global developmental needs

			biomolecules.	carbon metabolism, importance of anaplerotic reactions, and redox balance occurring in the cells. <ul style="list-style-type: none"> Integrate how metabolism can be related with issues in lifestyle, health and disease 	
13	ADVANCED ENDOCRINOLOGY	BC907	<ul style="list-style-type: none"> To learn the basic aspects of hormones and endocrine glands. To provide in depth knowledge about chemical structures of hormones. To understand the classification of hormones. To identify about the functions of hormones. To compile information about new diseases associated with hormones 	<ul style="list-style-type: none"> Demonstrate the basic aspects of hormones, glands, chemical classification and functions. Exhibit the daily secretion of hormones and abnormal values. Acquire knowledge about Reproductive Endocrinology. Make inferences of Neuroendocrine integration in homeostasis. Make judgments about Pathophysiology of Hormones. Compile information about new diseases associated with hormones. 	Global developmental needs
14	RESEARCH METHODOLOGY	BC908	<ul style="list-style-type: none"> To learn the Importance of Research and Ethics in Scientific research To understand the collection and classification of research data. To know the scope of Bioinformatics, the role 	<ul style="list-style-type: none"> Observe the basic concepts of scientific research, types of research and research design. Establish the knowledge about scientific writing and research publications Generalise the Collection and Classification of Data and its analysis. Perceive the Scope of Bioinformatics, 	National developmental needs

			<p>of Computers in Biology and Useful search engines.</p> <ul style="list-style-type: none"> • To acquire in-depth knowledge about the Laboratory animals used for Life science research. • To explain the Composition of the Institutional Ethical Committee (IEC) and General ethical issues. 	<p>and useful search engines for finding scientific articles.</p> <ul style="list-style-type: none"> • Point out the Laboratory animals used for Life science research and its ethical issues. • Develop an understanding of the Composition of the Institutional Ethical Committee (IEC), IPR and Patenting. 	
15	BIONANOTECHNOLOGY	BC909	<ul style="list-style-type: none"> • To understand the fundamental principles of nanotechnology and its applications. • To study about the basic knowledge about nanoparticles and its biological applications. • To apply engineering concepts and demonstrate a comprehensive understanding of state-of-the-art nano- scale and nano-fabrication methods. • To evaluate the processing conditions to engineer functional nanomaterials. • To apply and transfer interdisciplinary 	<ul style="list-style-type: none"> • Demonstrate the fundamental principles of nanotechnology and their application to biomedical engineering. • Exhibit the state-of-the-art nano-fabrication methods • Apply the knowledge of assessing nanomaterials and their safety • Make inferences on handling methods required during characterization • Justify the usage of nanomaterials in biological applications. • Compile the information about nanomedicines and their uses. 	National developmental needs

			approaches to bionanotechnology.		
16	ELECTIVE – III – PHARMACEUTICAL BIOCHEMISTRY	BC910A	<ul style="list-style-type: none"> To gain the knowledge on basic concepts of pharmacology to understand the mechanisms of drug action and toxicity. To understand the chemistry of drugs with respect to their pharmacological activity. To learn the drug metabolic pathways, adverse effect and therapeutic value of drugs. To know the mechanism of action of drug therapy. To study about the natural drug development. 	<ul style="list-style-type: none"> Enumerate the relevance, basic concepts of pharmacology, ADME properties and drug metabolism Interpret the pharmacological actions of different categories of drugs and factor that modifies the effect of drug and drug potency Apply the basic principle of genetic engineering and enzyme technology Outline the mechanism of action of drugs used in therapy of Respiratory system. Perceive the information of drugs used for cancer, inflammation, respiratory system, GIT, immune system and hormones. Formulate natural products for chemotherapy, anti-hypertensive, anti-platelet, anti-inflammatory and anti-cholinergic drugs. 	Regional developmental needs
17	Biophysical Chemistry	BC910B	<ul style="list-style-type: none"> To understand the basic information and theoretical concept of Biophysical instruments 	<ul style="list-style-type: none"> To understand the laws of laws of thermodynamics and its merits in biological science To understand the uses of electromagnetic radiation for the analysis of structure, dynamics, 	National developmental needs

				<p>interactions and chemical reactions of biological molecules</p> <ul style="list-style-type: none"> To understand the basic principle of various techniques useful in the biological science 	
18	Bionanotechnology	BC910C	<ul style="list-style-type: none"> To study about the basic knowledge about nanoparticles and its biological applications. 	<ul style="list-style-type: none"> Understand the fundamental principles of nanotechnology and their application to biomedical engineering. Apply engineering and physics concepts to the nano-scale and to demonstrate a comprehensive understanding of state-of-the-art nano-fabrication methods. Evaluate processing conditions to engineer functional nanomaterials. Apply and transfer interdisciplinary systems engineering approaches to the field of bio- and nanotechnology projects. Characterization methods for nanomaterials, understanding and critiquing nanomaterial safety and handling methods required during characterization 	Global developmental needs
19	MOLECULAR BIOLOGY	BC91004	<ul style="list-style-type: none"> To learn the basic information about Mendelian genetics and the basic aspects of molecular theories. To understand the process of DNA replication involving the roles of 	<ul style="list-style-type: none"> Observe the basic information about Mendelian genetics and the basic aspects of molecular theories. Analyse the processes involved in replication and the role of DNA polymerases. Determine the composition, structure 	Global developmental needs

			<p>various DNA polymerases and other proteins with special reference to the events in prokaryotes and eukaryotes.</p> <ul style="list-style-type: none"> • To Gain the insights on the various kinds of DNA repair and major diseases resulting from defective DNA repair • To acquire the knowledge on various kinds of DNA recombination and a detailed understanding of the process of Holliday recombination • To acquire the knowledge related to major features of chloroplast and mitochondrial DNA. 	<p>and types of RNAs and its mechanisms.</p> <ul style="list-style-type: none"> • Justify the role of peptides and protein molecules produced during translation process. • Recognize the role of proteins during gene expression and its regulations. • Integrating mol. Bio mechanism with clinical concepts 	
20	ADVANCED CLINICAL BIOCHEMISTRY	BC1005	<ul style="list-style-type: none"> • To learn about the specimen: composition, collection and various clinical methods. • To gain the knowledge about metabolic disorders associated with carbohydrate and lipids. • <input type="checkbox"/> To familiarize with the renal disorders linked with protein 	<ul style="list-style-type: none"> • Express the various methods in collection and analysis of clinical specimens like blood and urine. • Determine the clinical defect of numerous disorders linked to carbohydrate and lipoprotein metabolism. • Examine the type of renal disorder based on the concentration of blood substances like urea, creatinine and uric 	Global developmental needs

			<p>metabolism and non-protein nitrogenous constituents.</p> <ul style="list-style-type: none"> To understand the functions of liver and its associated disorders. To understand the oxidative stress and damage to the macromolecules. 	<p>acid.</p> <ul style="list-style-type: none"> Categorize the disorder associated with serum enzymes like Acid phosphatase, Streptokinase, Asparaginase, Isocitrate dehydrogenase, Ceruloplasmin, CK and LDH. Evaluate the types of jaundice by the level of serum conjugated and unconjugated bilirubin. Compile the effect of free radicals and role of enzymatic and non-enzymatic antioxidants on the macromolecules. 	
21	ELECTIVE IV - PLANT: BIOCHEMISTRY AND MOLECULAR BIOLOGY	BC1006A	<ul style="list-style-type: none"> To explain and understand the Biochemistry of photosynthetic system. To learn and understand the basics of plant cell and its physiology. To create awareness on Plant diseases and their metabolism. To impart basic knowledge on plant biotechnology. To develop sound knowledge on biochemical events associated with growth regulators and herbicide. 	<ul style="list-style-type: none"> Acquire broad knowledge on Photosynthesis, Cyclic and non-cyclic photophosphorylation and Calvin cycle. Infer the different types of plant hormones, Symbiotic and Non-symbiotic nitrogen fixation. Integrate about stress physiology and secondary metabolites Recall the basic concepts of plant physiology, Biochemistry of seed democracy and phytochromes. Outline the DNA Polymorphism and plant genetic engineering. Provide the information on plant vectors, plasmid, biodegradable plastics 	Global developmental needs

				and fruit ripening.	
22	ELECTIVE IV HERBAL TECHNOLOGY	BC1006B	<ul style="list-style-type: none"> • To learn about the preparation of drugs. • To know about Herbal remedies for human ailments. • To evaluate the propagation of medicinal plants. • To study the Nutritive and medicinal value of fruits. • To know the applications of Herbal foods. 	<ul style="list-style-type: none"> • Discuss the importance of Nutritive and medicinal value of fruits • Acquire knowledge of Collection of wild herbs and its formulations • Perceive the knowledge of Systems of Indian Medicines–Siddha, Unani, Ayurveda and Homeopathy. • Evaluate the Drugs for common disorders and its mechanism of action. • Analyse the applications of Herbal foods– Food processing and packaging. • Integrate the biotechnological principles in propagation of medicinal plants. 	Regional developmental needs
23	ELECTIVE IV GENETIC ENGEENERING	BC1006C	<ul style="list-style-type: none"> • To learn about gene cloning, expression vectors and construction of gene libraries 	<ul style="list-style-type: none"> ➤ The students will have the expert knowledge ➤ Methods to produce different genetically modified organisms (GMOs) ➤ Applications of genetic engineering in biotechnology • Become well in handling the molecular techniques like PCR, Westerblotting etc. 	Global developmental needs

Name of the Programme: B.Sc Biochemistry

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	CELL BIOLOGY	BC104	<ul style="list-style-type: none"> To understand the structure of prokaryotic and eukaryotic cellular organization and to know the fluid mosaic model and membrane transport mechanism. To learn about the chemical composition and functions of endoplasmic reticulum, golgi apparatus and lysosomes. To have in-depth understanding of the Structure, Chemical composition and functions of Mitochondria and Ribosomes. To learn the functions of peroxisomes and glyoxysomes and composition of cytoskeleton and extracellular matrix. To acquire knowledge on nucleus–structure, composition and functions of chromosomes cell cycle, cell division and cell death mechanisms. 	<ul style="list-style-type: none"> Develop an understanding of the structure of cell and its difference between prokaryotes and eukaryotes Define and understand the fluid mosaic model and membrane transport Categorize the chemical composition and functions of endoplasmic reticulum, golgi apparatus and lysosomes. Broad knowledge on the structure, chemical composition and functions of mitochondria, ribosomes, peroxisomes and glyoxysomes. Demonstrate a clear understanding of the composition of cytoskeleton and extracellular matrix. Evaluate the mechanism of cell division with reference to mitosis and meiosis 	Global developmental needs
2	BIOMOLECULES	BC105	<ul style="list-style-type: none"> To study the structure and functions of large biological macromolecules. 	<ul style="list-style-type: none"> Understand the knowledge of carbohydrates and their classifications in detail 	Global developmental needs

			<ul style="list-style-type: none"> • To understand the organic chemical principles in life processes. • To introduce the knowledge of lipid and their importance. • To provide in-depth understanding of Nucleic acids and its structure. • To categorize the source, applications of vitamins and minerals. 	<ul style="list-style-type: none"> • Acquire the basic knowledge on the classification and structure of amino acids and classify proteins based on its physical and chemical properties • Discuss the importance, classification and functions of lipids • Enumerate the structure and properties of nucleic acids and its types • Explore and recommend the source, applications of vitamins and minerals • Compile the basic information on the sources, mechanism and applications of macro and micro elements 	
3	PLANT BIOCHEMISTRY	BC204	<ul style="list-style-type: none"> • To provide the basic knowledge of plant cell and water absorption mechanism. • To get familiar with photosynthetic mechanism and starch production cycle. • To acquire knowledge about NPK cycle and its biological significance. • To give detail idea about seed germination, primary and secondary metabolites. • To explore the information about plant hormones and their 	<ul style="list-style-type: none"> • Understand the basic knowledge of plant cell and water absorption mechanism. • Acquire knowledge on photosynthetic mechanism and starch production cycle. • Discuss about NPK cycle and its biological significance. • Describe about seed germination, primary and secondary metabolites. • Explore the information about plant hormones and their physiological effects. 	Global developmental needs

			physiological effects.	<ul style="list-style-type: none"> Assess the in-depth principle and speculate the mechanism of plant life cycle 	
4	HUMAN PHYSIOLOGY	BC205	<ul style="list-style-type: none"> To understand the anatomy and physiology, various levels of organizations basic homeostatic mechanism. To elucidate and describe the composition, function of various body fluids like blood and lymph, their significance and related disorders To explain the morphology, physiology of circulatory, respiratory and digestive system and classify the structure of lungs, transport of gases between lungs and tissues. Explain the morphology, functions of kidney and nephron and their role in urine formation. To categorize the Structure and functions of nerve cells, conduction of nerve impulses, the role of neurotransmitters and reflex action. To speculate the physiology of muscle contraction in co-ordination with the joints, their articulation and skin. 	<ul style="list-style-type: none"> Define and explain the anatomy and physiology, various levels of organizations basic homeostatic mechanism. Explain and determine the composition, function of various body fluids like blood and lymph, their significance and related disorders Explain and sketch the morphology, physiology of circulatory, respiratory and digestive system. Categorize the structure of lungs, transport of gases between lungs and tissues. Explain the morphology, functions of kidney and nephron and their role in urine formation. Evaluate the structure and functions of nerve cells, conduction of nerve impulses, the role of neurotransmitters and reflex action. Speculate the physiology of muscle contraction in co-ordination with the joints, their articulation and skin. 	Global developmental needs

5	MICROBIOLOGY	BC304	<ul style="list-style-type: none"> To understand basic structure of microbes and associated instruments. 	<ul style="list-style-type: none"> By learning this subject, Students can demonstrate knowledge of microbial cell structure and metabolism, evolutionary forces and their consequences. It obtains wide knowledge as how microorganisms interact with their environment and interaction between humans. Students can describe and use new and existing methods and technologies in and out of the laboratory setting. They can also formally communicate the results of biological investigations using both oral and written. Students can demonstrate an understanding, and ability to use, the scientific method including observation, hypotheses testing, data collection, analysis and interpretation. 	Global developmental needs
6	BIOPHYSICAL CHEMISTRY	BC305	<ul style="list-style-type: none"> To understand about basic biophysical units and its chemistry 	<ul style="list-style-type: none"> On completion of this subject, a student will be able to understand the range of physical methods used to characterize the organization, properties and function of biological molecules, along with the necessitating sophisticated methods to study 	Global developmental needs

				<p>them at the molecular level. This course will be also providing the principle, instrumentation and application of various basic and sophisticated analytical instruments like Electrophoresis, Microscopy, Chromatography, and Spectroscopy.</p>	
7	APPLIED MICROBIOLOGY	BC404	<ul style="list-style-type: none"> To understand about mode of microbial infections, fermentation and waste management. 	<ul style="list-style-type: none"> By learning this subject, Students can demonstrate knowledge of microbial cell structure and metabolism, evolutionary forces and their consequences. It obtains wide knowledge as how microorganisms interact with their environment and interaction between humans. Students can describe and use new and existing methods and technologies in and out of the laboratory setting. They can also formally communicate the results of biological investigations using both oral and written. Students can demonstrate an understanding, and ability to use, the scientific method including observation, hypotheses testing, data collection, analysis and interpretation. 	National developmental needs

8	ANALYTICAL BIOCHEMISTRY	BC405	<ul style="list-style-type: none"> To understand about principles, instrumentation and applications of various analytical instruments. 	<ul style="list-style-type: none"> Analytical biochemistry expertise the student in analyzing biochemical components found in a cell or other biological sample. It also makes the student skilled in using broad range of techniques for separation, identification, quantification and functional characterization of biological molecules. It also ensures the student to understand the insights of complex biological process in the cell. This course will develop basic knowledge on electrochemical techniques, chromatography, electrochemical radiation and atomic radiation techniques used in life science. 	National developmental needs
9	ENZYMOLGY	BC516	<ul style="list-style-type: none"> To understand the role of enzymes in biochemical reactions and its applications. 	<ul style="list-style-type: none"> Student will have a strong foundation in distinguishing the fundamentals of enzyme properties, nomenclatures, characteristics and its mechanisms. They will be able to apply biochemical calculation for enzyme kinetics, Compare methods for production, purification, characterization and immobilization of enzymes, can 	Global developmental needs

				<p>discuss various application of enzymes that can benefit human life. It also innovate the student to discover the current and future trends of applying enzyme technology for the commercialization purpose of biotechnological products.</p>	
10	INTERMEDIATORY METABOLISM	BC517	<ul style="list-style-type: none"> To promote and understand chemical reactions, central metabolic pathways and kinetics of energy and homeostasis of metabolism 	<ul style="list-style-type: none"> At the end of this course, the student is able to explain the general design of metabolic pathways based on bioenergetic principle, can understand the structures and functions of biological molecules. Students can describe how carbohydrates (glucose and glycogen), lipids (fatty acids and triglycerides) and nitrogenous compounds (amino acids and nucleotides) are synthesized and degraded, and more importantly, how metabolic pathways are regulated and recognize the biochemical basis of diseases arise due to defects in metabolism. 	Global developmental needs
11	ENDOCRINOLOGY	BC518	<ul style="list-style-type: none"> To understand the role of hormones in biochemical reactions and its applications. 	<ul style="list-style-type: none"> Students will develop the ability to independently evaluate, treat and monitor common endocrine disorders. They will be able to describe major actions of 	Global developmental needs

				<p>each hormone on target cells, synthesis pathways and inactivation of certain hormones like steroid and thyroid. Student will also gain complete knowledge on hormones and the control of its synthesis and secretion site for each hormone, including feedback relationships.</p>	
12	GENETICS	BC519	<ul style="list-style-type: none"> To understand basic aspects of genetics and associated laws. 	<ul style="list-style-type: none"> On satisfying the requirements of this course, students will have the knowledge and skills to explain the key concepts in population, evolutionary and quantitative genetics including the basis of genetic variation, heritability and mutation. A student can understand the range of molecular laboratory techniques used routinely in human forensic analysis and population genetic analysis including sex typing, DNA profiling, Single Nucleotide Polymorphism (SNP) detection and DNA sequencing. 	Global developmental needs
13	BIOMEDICAL INSTRUMENTATION	BC520A	<ul style="list-style-type: none"> To focus on biomedical instrumentation in life sciences. 	<ul style="list-style-type: none"> The main objective of this course is to introduce student to basic biomedical engineering technology. As a result student 	National developmental needs

				<p>can understand, design and evaluate systems and devices that can measure, test and/or acquire biological information from the human body. This course will explore the students about various systems of the human physiology, signals of biological origin obtained from these systems, biosensors, transducers, bioelectrodes used to acquire such signals, and amplifiers for measuring biopotentials. Electrical safety of medical devices; measurements of the blood pressure, blood flow, respiratory system, clinical laboratory equipment, medical imaging, and bioethics will also be discussed.</p>	
14	MEDICAL LABORATORY TECHNOLOGY	BC520B	<ul style="list-style-type: none"> To give knowledge about laboratory practices, drugs and cancer chemotherapy. 	<ul style="list-style-type: none"> The student will be able to Perform routine clinical laboratory procedures within acceptable quality control parameters in Hematology, Chemistry, Immunohematology, and Microbiology under the general supervision of a Clinical Laboratory Scientist or 	Local developmental needs

				<p>Pathologist. Demonstrate technical skills, social behavior, and professional awareness incumbent upon a laboratory technician as defined by the American Society for Clinical Laboratory Science and the American Society of Clinical Pathologists.</p>	
15	PHARMACOLOGY	BC520C	<ul style="list-style-type: none"> To give focus on drug chemistry and its mechanism of actions. 	<ul style="list-style-type: none"> This course will provide the basic information on drug, drug metabolism, adverse drug reactions, general awareness of different types of drugs and its effects. This course will also give focus on drug chemistry and its relationship in life sciences 	Regional developmental needs
16	SSP-I: HEALTH MANAGEMENT	BC522SP1	<ul style="list-style-type: none"> To gain knowledge about first aid, basic health issues and handling emergencies. 	<ul style="list-style-type: none"> This course will provide the basic information about safe guards to health, first aid for accidents, handling emergencies of general and specific disease. This course will also give awareness about symptoms and giving first aid during common health issues before meeting the physician. 	Local developmental needs
17	NON-MAJOR ELECTIVE: ENERGY BUILDERS	NBC503	<ul style="list-style-type: none"> To understand about various biological macromolecules and its function (structures not required) 	<ul style="list-style-type: none"> A student draws complete knowledge of health management at the end of this course. Based on an individual's requirement a 	Regional developmental needs

				complete diet schedule can be framed by the student.	
18	MOLECULAR BIOLOGY	BC613	<ul style="list-style-type: none"> To give basic aspects of molecular theories and central dogma. 	<ul style="list-style-type: none"> Students will be able to exhibit a knowledge base in genetics, cell and molecular biology, anatomy and physiology. Demonstrate the knowledge of common and advanced laboratory practices in cell and molecular biology. Exhibit clear and concise communication of scientific data. Engage in review of scientific literature in the areas of biomedical sciences. 	Global developmental needs
19	IMMUNOLOGY	BC614	<ul style="list-style-type: none"> To know about exact mechanism of action of Ag-Ab interaction. 	<ul style="list-style-type: none"> The study of immunology will enable the student to gain a broad foundation base and build upon that base for understanding the defense mechanisms of the human body. Such foundation will be germane to advanced courses for the student entering medical school or graduate school or for any student actively involved in the medical healing arts. 	Global developmental needs
20	MEDICAL BIOCHEMISTRY	BC615	<ul style="list-style-type: none"> To understand in details about diseases, associated symptoms and treatments. 	<ul style="list-style-type: none"> This course will provide the basic knowledge on principles and practices of Clinical laboratory, collection of clinical specimens based on the disease, understand 	Regional developmental needs

				<p>the clinical disorders and treatments. It also imparts knowledge about exact clinical condition, causative agents, signs & symptoms, diagnosis, and treatment measures of diseases affecting principal organs</p>	
21	SS1: BIOTECHNOLOGY	BC616	<ul style="list-style-type: none"> To give knowledge on applied field of life sciences like DNA technology, tissue culture techniques and Fermentation technology 	<ul style="list-style-type: none"> Student will have a In-depth knowledge in the chemical structure and function of biomolecules, metabolism in the cell, knowledge of the concepts of molecular genetics and biosynthesis of proteins. A good theoretical and practical insight into methods used to obtain this knowledge of the relationship between structure and function at organ and/or organism level, of important cell biological communication principles and processes, and how they are regulated. 	National developmental needs
22	SS2: BIOETHICS	BC617	<ul style="list-style-type: none"> To understand the ethical aspects in Biology and Bio Containment. 	<ul style="list-style-type: none"> This self-study paper makes the student to acquire sound knowledge about different types of nutrients and its composition. Based on the symptoms of the disease in the early stage one can 	Local developmental needs

				<p>cure the disease through diet therapy. This student can chart out a recommended diet for particular disease. By strictly following the diet one can get rid of the discomfort.</p>	
23	SSP-II: NUTRITIONAL BIOCHEMISTRY	BC619SP1	<ul style="list-style-type: none"> To know about importance of Nutrition and associated health risks. 	<ul style="list-style-type: none"> This self-study paper makes the student to acquire sound knowledge about different types of nutrients and its composition. Based on the symptoms of the disease in the early stage one can cure the disease through diet therapy. This student can chart out a recommended diet for particular disease. By strictly following the diet one can get rid of the discomfort. 	Local developmental needs
24	HEALTH CARE AND DISEASE MANAGEMENT	NBC603	<ul style="list-style-type: none"> To give awareness about first aid, basic health issues, handling emergencies. 	<ul style="list-style-type: none"> A student draws complete knowledge of health management at the end of this course. Based on an individual's requirement a complete diet schedule can be framed by the student. 	Local developmental needs

Name of the Programme: M. Phil Tamil

Programme Outcomes at M.Phil Level

- ❖ பல்வேறு ஆய்வுப் புலங்களின் இணைவிலான ஆய்வுத் தலைப்புகளைத் தெரிவு செய்தல்
- ❖ தன்னை நோக்கியதான ஆய்வு முறைகளைத் தமிழ்ப் பக்திப் பனுவல்களில் பொருத்துதல்
- ❖ கள ஆய்வு முறைத் தரவுகளை முறையியல் அடிப்படையில் ஒழுங்கு செய்தல்
- ❖ அடிப்படை ஆய்வுகளை அளவிற்கு அதிகமாக ஊக்குவித்தல்
- ❖ பழங்குடி மக்கள் குறித்த ஆய்வுகளை பொருளாதார அடிப்படையில் இனங்காணுதல்

Programme Specific Outcomes

- ❖ தற்சார்பு வாழ்வியல் மூலங்களை வட்டார மக்களுக்கு அடையாளங் காட்டுதல்
- ❖ சமூகப் பிறழ்நிலை மனங்களுக்கான இலக்கிய வழியிலான தீர்வைக் காணுதல்
- ❖ இருக்கை ஆய்விற்கான முதன்மை மூலங்களைக் கள ஆய்வின் வழியே பெறுதல்
- ❖ அடிப்படை ஆய்வுகளின் வளர்ச்சிக் காரணமாகச் சிக்கல்கள் இனங்காணப் பெறும்
- ❖ திணைக் குடி மக்களின் வாழ்வியல் பொருளாதாரத்தில் புவிசார் குறியீடுகளைப் பெறுவர்.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	ஆய்வு நெறிமுறைகள்	TAR 107	துறை தோய்ந்தவர்களை ஆய்வு நோக்கி நகர்த்துதல் பல்வேறு துறைகளை அடையாளம் காட்டுதல்	ஆய்வாளர்களை உருவாக்குதல் பல்துறைப் புலங்களில் புலமை உடைய ஆய்வாளர்களை உருவாக்குதல் இருக்கை ஆய்விற்கான	National

			<p>நூலகத்தின் தேவை</p> <p>ஆய்வாளர்கள் உணர</p> <p>செய்தல்</p> <p>தனித்த மொழிநடை</p> <p>உருவாக்குதல்</p> <p>ஆய்வுத் திருட்டு குறித்தான</p> <p>விழிப்புணர்வு ஏற்படச்</p> <p>செய்தல்</p>	<p>மூலங்களைப் பெறுவதில்</p> <p>நூலகத்தின் தேவையை</p> <p>ஆய்வாளர்கள் உணர்ந்திருப்பர்</p> <p>தனக்கான இயல்பானதொரு ஆய்வுநடையினை ஆய்வாளர் பெற்றிருப்பர்</p> <p>ஆய்வாளர்கள் கருதுகோள் விளக்கங்களை நூலாக்கம் செய்யும் வரை கருதுகோள் விவாதத்தில் பொறுமை காத்திருப்பர்</p>	
2	தமிழில் ஆய்வியல் வரலாறு	TAR 108	<p>தமிழில் ஆராய்ச்சி தோன்றிய காலத்தை அறிந்திருப்பர்</p> <p>பக்தி இலக்கியங்களின் மொழிநடை அறிய செய்தல்</p> <p>புத்திலக்கியங்களின் வழியாகப் பழைய இலக்கியங்களைக் கண்டடைதல்</p>	<p>தமிழ் ஆராய்ச்சியின் தொடக்க காலம் ஆய்வாளர்கள் அறிந்திருப்பர்</p> <p>முனைவர் பட்டத்திற்கு ஆய்வாளர்கள் பக்திப் பனுவல்களைத் தெரிவு செய்வார்களாயின் அதைக் குறித்த புரிதலுடன் இருப்பர்.</p> <p>தெரிந்த ஒன்றிலிருந்து தெரிய ஒன்றை நோக்கி</p>	Local

			<p>இலக்கிய ஆய்வின் இன்றியமையாமைக் குறித்து அறிந்திருப்பர்.</p> <p>தமிழின் ஆய்வுப் பரப்பு குறித்த சிந்தனைகளை ஆய்வாளர் பெற்றிருப்பர்</p> <p>பண்பாட்டுக் களங்களை இனங்காணுதல்</p> <p>மொழியின் மாற்றம் இ வளர்ச்சி நிலை குறித்து அறிய செய்தல்</p> <p>நாட்டுப்புறவியல் ஆய்வினை ஊக்கப்படுத்துதல் மூலம் கள ஆய்வுகளை இனங்கான செய்தல்</p> <p>ஆய்வானது அடிப்படையில் சமூகம் நோக்கியதாக இருக்க வேண்டும் என்பதை</p>	<p>நகருதல்</p> <p>இலக்கியம் சமூகத்தின் விளைவு என்பதை ஆய்வாளர்கள் உணர்ந்திருப்பர்.</p> <p>ஆய்வு செய்யக் கூடிய நிலத்தின் பண்புநலன்கள் குறித்து ஆய்வாளர்கள் தெளிவாகப் புரிந்திருப்பர் திருப்பத்தூரின் பல்வேறு பண்பாட்டு அடையாளங்களை இனங்காணுதல்</p> <p>இலக்கியம் இ கல்வெட்டு மொழிநடையின் சிறப்புகள் குறித்து ஆய்வாளர்கள் கருதுகோள் உருவாக்குவதற்கான களன்களைப் பெற்றிருப்பர்</p> <p>நேர்காணல் இ களத்தரவுகள் திரட்டுதல்இ வினாநிரல் தயாரிப்பு போன்றவற்றை முறையாக ஆய்வாளர்கள் பயன்படுத்தியிருப்பர்.</p>	
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			ஆய்வாளர்கள் அறிந்திருப்பர்.	ஆய்வுச் சி்க்கலானது சமூகத்தின் சி்க்கற்பாடுகளுக்குப் பதிலளிப்பதாக இருக்க வேண்டுவதை ஆய்வாளர்கள் உணர்ந்திருப்பர்.	
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Program Name: M.A.Tamil

Programme Out comes (POs) of M.A.,Tamil

முதுகலைப் பாடத் திட்டத்தின் வாயிலாக மாணவர்கள் கீழ்க்கண்ட திறன்களைப் பெற்றிருப்பர்.

PO1: தமிழில் ஆழ்ந்த புலமையினைப் பெற்றிருப்பர்.

PO2: தங்கள் பாடம் சார்ந்து திட்டமிடல், பகுப்பாய்தல், முடிவைத் தீர்மானித்தல் ஆகியவற்றைச் செயல்படுத்தும் தனித்திறன்களைப் பெற்றிருப்பர்.

PO3: ஆய்வேடு மற்றும் ஆராய்ச்சிச் செயல்பாடுகளின் வாயிலாகத் தங்களின் பாடத்தில் சிறந்த வல்லுநராக உருவாகின்ற தனித்திறன்களைப் பெற்றிருப்பர்.

PO4: படைப்பாளுமைகளாகப் பரிணமிக்கின்ற திறன்களைப் பெற்றிருப்பர்.

PO5: சமூக மற்றும் அறவிழுமியப் பொறுப்புள்ளவர்களாக மேம்படுகின்ற திறன்களைப் பெற்றிருப்பர்.

Program Specific Outcomes (PSOs) of M.A.,Tamil

முதுகலைப் பாடத் திட்டத்தின் வாயிலாக மாணவர்கள் கீழ்க்கண்ட திறன்களைப் பெற்றிருப்பர்.

PSO1: தமிழ்நாடு அரசுத் தேர்வாணையம், பல்கலைக்கழக மானியக் குழுப் போட்டித் தேர்வுகளில் வெற்றி பெறுவதற்கான திறன்களைப் பெற்றிருப்பர்.

PSO2: கணினித் தமிழ், பயிற்சி பெறுவதன் மூலம் வேலை வாய்ப்பில் முன்னுரிமையும் தனியாகக் கணினிப் பயிற்சி மையம் வைத்து நடத்திடவும் பல ஆய்வேடுகளைத் தட்டச்சு செய்தும் தனித்தியங்கக்கூடிய திறன்களைப் பெற்றிருப்பர்.

PSO3: அறவிழுமிய உணர்வுள்ளவர்களாகவும் சமூகப் பொறுப்புள்ள குடிமகனாகவும் விளங்குகின்ற பண்பினைப் பெற்றிருப்பர்.

PSO4: மொழிபெயர்ப்பு நுட்பங்களை உணர்ந்து கொண்டு சிறந்த மொழிபெயர்ப்பினைச் செய்கின்ற திறன்களைப் பெற்றிருப்பர்.

PSO5: ஆய்வேடு மற்றும் ஆராய்ச்சிச் செயல்பாடுகளின் வாயிலாகத் தங்களின் பாடத்தில் சிறந்த ஆய்வாளராக உருவாகின்ற தனித்திறன்களைப் பெற்றிருப்பர்.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	தொல்காப்பியம் : - எழுத்ததிகாரம்	TA712	எழுத்திலக்கணத்தை அறிதல் இக்கொள்கை பிற்காலத்தில் எழுந்த இலக்கண நூல்களிலிருந்து வேறுபடும் வகையினை அறிதல்.	தமிழ்த்துறை மாணவர்களுக்கு இலக்கண அறிவு தேவை என்பதை அறிந்து கொள்வர். எழுத்துகளின் வகைகள்ஐ பிறக்கும் முறை எப்படி என்பதை அறிந்து கொள்வர். பிழையில்லாமல் எழுத முடியும் என்ற தன்னம்பிக்கையினைப் பெறுவர்.	national

2	பக்தி இலக்கியங்கள்	TA713	பக்தி இயக்கத்தின் வரலாற்றுப் பின்புலத்தையும், மக்களின் நல்வாழ்க்கைக்குப் பக்தி இயக்கம் காட்டும் நன்னெறியையும் அறிந்து கொள்ளல்.	பக்தியிலக்கியங்களின் வழி மொழித்துறை மாணவர்களுக்குப் பிற சமய அறிவு தேவை என்பதை அறிந்து கொள்வர். உலகமயமாக்கச் சூழலில் பக்தியிலக்கியத்தின் அறச்செய்திகளின் முதன்மை குறித்து அறிய மொழியறிவு அடிப்படைத் தேவை என்பதை அறிந்து கொள்வர்.	global
3	பல்லவர், ஐரோப்பியர் மற்றும் நாயக்கர் காலம்	TA714	<ul style="list-style-type: none"> • தமிழ்ச் சமூக வரலாற்றையும் பண்பாட்டு வரலாற்றையும் அறிமுகப்படுத்துதல் - • பண்பாட்டுச் சிறப்பின் தனித்துவத்தை அறிமுகம் செய்தல் - வரலாற்றின் போக்கினையும் இடையீடுகளையும் இடையூறுகளையும் தெளிவுபடுத்துதல். 	<ul style="list-style-type: none"> • தமிழக வரலாறு மற்றும் பண்பாடு பற்றிய புரிந்துணர்வைப் பெறுவர். 	national
4	சிறுகதை ∴ கவிதை	TA715	நவீனத்தமிழ்க்கவிதைகள் மற்றும் சிறுகதைகளின் பல்வேறு போக்குகளை அடையாளங்காட்டுதல். அவைகளுள் மைல்கற்களாக விளங்கும் கவிதைகள் மற்றும் சிறுகதைகளை அறிமுகப்படுத்துதல், கவிதை மற்றும் சிறுகதை வாசிப்பைப் பழக்கப் படுத்துதல்.	கவிதைஇ சிறுகதை ஆகிய இலக்கிய வகைமைகளின் வரலாற்று அறிவைப் பெறுதல். நூறு ஆண்டுகாலத்தில் தமிழகப் புதுக்கவிதைகளில் ஏற்பட்டுள்ள வளர்ச்சிஇ கருத்தியல் வளர்ச்சி	global

				<p>ஆகிய அறிவையும் கவிதைகளை எழுதும் மற்றும் வாசிக்கும் அறிவையும் திறனையும் பெறுதல். மேலும் மொழிஇ நிலம்இ பண்பாடுஇ பாலினம் சார்ந்து சிறுகதைகளை ஒப்பிட்டுப் பார்க்கும் ஒப்பீட்டு அறிவையும் பெறுதல்.</p>	
5	<p>திறன் வெளிப்பாட்டுக்கலை</p>	TA716	<p>வெறும் ஏட்டுக் கல்வியாக மட்டும் கொள்ளாமல், பயன்பாட்டுத் தன்மையுடையதாகவும் திறன்களை வளர்க்கக் கூடியதாகவும் அணுகுதல்.</p>	<p>உரைநடை எழுதும் கலையினை அறிந்து கொள்வர் படைப்பிலக்கியத்தின் மீதான் ஆர்வத்தையும் வாசிப்பையும் வளர்த்துக் கொள்வர் தொடர் வாசிப்பின் மூலம் சமூகப் பிரச்சனைகளுக்குத் தீர்வு காணும் ஆற்றல் பெறுவர்</p>	national

6	<p>தொல்காப்பியம் : - சொல்லதிகாரம்</p>	TA813	<p>தொல்காப்பியம் மாணவர்களுக்கு சொற்பிழை இல்லாமல் எழுதுவதற்கும் வாசிப்பதற்கும் தேவை என்பதை அறிந்து கொள்வர். உலகமயமாக்கச் சூழலில் தமிழ்மொழியின் வளர்ச்சிக்காக மொழியறிவுடன் இலக்கணம் அடிப்படைத்தேவை என்பதை அறிந்து கொள்வர். தமிழ்மொழியின் அடிப்படைக்கட்டமைப்பினை அறிந்து கொள்வர்.</p>	<p>தமிழ்மொழியினைப் பிழையின்றி எழுதவும் பேசவும் முடியும் என்ற தன்மப்பிக்கையினைப் பெறுவர். தன்திறமைகளை வளர்ப்பதோடு மட்டுமல்லாமல் பேச்சாளர் என்ற திறனைப் பெறுவர். இலக்கணக்கொள்கைகளை விளங்கிக் கொள்வர். இலக்கணநுட்பங்களை உணர்ந்துகொண்டு சிறந்த எழுத்தாளர் பேச்சாளர் என்ற திறன்களைப் பெற்றிருப்பார்.</p>	national
7	<p>காப்பியங்கள்</p>	TA814	<p>காப்பியங்கள் உணர்த்தும் வாழ்வியல் சிந்தனைகள், சமூக அமைப்பு, காப்பிய உத்திகள், நயங்கள் முதலியவற்றை அறிந்துகொள்ளல்.</p>	<p>காப்பியங்கள் உணர்த்தும் வாழ்வியல் சிந்தனைகள், சமூக அமைப்பு, காப்பிய உத்திகள், நயங்கள் முதலியவற்றை அறிந்துகொள்வர்.</p>	global
8	<p>சங்க காலம் மற்றும் சோழர் காலம்</p>	TA815	<p>வரலாறும் பண்பாடும் ஈலக்கியத்தோடு நேரடித் தொடர்புடையவை. பண்பாட்டின் பதிவுகள், ஈலக்கியங்கள் வழியே ஆறியலாகும். இகவே நான்கு பருவங்களிலும் ஈப்பகுதி கற்பிக்கப்படுகிறது. ஈந்தப் பருவத்தில் நாயக்கர் மற்றும் ஒரோப்பியர் வரலாறும்</p>	<p>பண்பாட்டின் பதிவுகள், ஈலக்கியங்கள் வழியே ஆறியலாகும். இகவே நான்கு பருவங்களிலும் ஈப்பகுதி கற்பிக்கப்படுகிறது. ஈந்தப் பருவத்தில் நாயக்கர் மற்றும் ஒரோப்பியர் வரலாறும் பண்பாடும் கற்பிக்கப்படுகிறது.</p>	national

			பண்பாடும் கற்பிக்கப்படுகிறது.		
9	உரைநடை மற்றும் புதினம்	TA816	உரைநடை எழுதும் கலையினை அறிந்து கொள்வர் படைப்பிலக்கியத்தின் மீதான் ஆர்வத்தையும் வாசிப்பையும் வளர்த்துக் கொள்வர் தொடர் வாசிப்பின் மூலம் சமூகப் பிரச்சனைகளுக்குத் தீர்வு காணும் ஆற்றல் பெறுவர்	படைப்பிலக்கியத்தின் மீதான் ஆர்வத்தையும் வாசிப்பையும் வளர்த்துக் கொள்வர் தொடர் வாசிப்பின் மூலம் சமூகப் பிரச்சனைகளுக்குத் தீர்வு காணும் ஆற்றல் பெறுவர்	global
10	கணினிக்கலை	TA817	கணினி அறிமுகம், செயல்பாட்டு முறைகள், அலுவலகப் பயன்பாடு, கணக்கீட்டு முறை, பல் ஊடகப் பயன்பாடு, இணைய பயன்பாடு ஆகியவற்றை அறிதல்.	<ul style="list-style-type: none"> கணினிக் கலையினைத் தமிழ் மொழியின் வாயிலாக அறிமுகப்படுத்துதல், தமிழ் வழியாக கணினியை இயக்கும் திறன் பெறுதல் 	global
11	தொல்காப்பியப் பொருளதிகாரம்	TA912	தமிழ் மொழியில் உள்ள தொல்காப்பியப்பொருளதிகாரம் குறித்தும் அவற்றின் தமிழ்மொழியின் இலக்கணநூலான	பழந்தமிழரின் அகவாழ்வியலுக்கான இலக்கணத்தை அறிந்துகொள்வர். பழந்தமிழரின் புற	national

			<p>தொல்காப்பியத்தில் பொருளதிகாரத்தின் மக்களின் வாழ்வியலை கொள்வது</p> <p>அக்கால அகப்புற அறிந்துக்</p>	<p>வாழ்வியலுக்கான இலக்கணத்தை அறிந்துகொள்வர். களவு - களவுக்கான கூற்று நிகழ்த்துபவர்களின் இலக்கணத்தை அறிந்துகொள்வர். கற்பு - கற்குக்கான கூற்று நிகழ்த்துபவர்களின் இலக்கணத்தை அறிந்துகொள்வர். களவுஇ கற்பியலில் சொல்லப்படாத எஞ்சியுள்ள இலக்கணச் செய்திகளை பொருளியலில் அறிந்துகொள்வர்.</p>	
12	<p>அற இலக்கியங்களும் சிற்றிலக்கியங்களும்</p>	TA913	<p>தமிழ் இலக்கிய வரலாற்றுப் பின்னணியில் அற இலக்கியங்கள் முக்கியப் பங்காற்றியுள்ளன. அற இலக்கியங்களைப் போன்றே சிற்றிலக்கியங்களும் தமிழ் இலக்கிய வகைமை வளர்ச்சியில் பெரும்</p>	<p>• தமிழின் வளமான இலக்கிய மரபை அறிமுகப்படுத்துதல் - சிற்றிலக்கிய மரபை அறிமுகப்படுத்துதல் - சிற்றிலக்கியங்களின் பன்மைத்துவத்தை அறிமுகம் செய்தல். ஆற இலக்கியங்களையும்</p>	global

			பங்காற்றியுள்ளன. ஆகவே அற இலக்கியங்களையும் சிற்றிலக்கியங்களையும் குறித்த அடிப்படையினை விளங்கிக் கொள்ளச் செய்தல்.	சிற்றிலக்கியங்களையும் குறித்த அடிப்படையினை விளங்கிக் கொள்ளச் செய்தல்.	
13	உரை மரபுகள்	TA914	உரைமரபின் தோற்றப் பின்புலங்களை அறிந்துகொள்ளல்- உரையாசிரியர்களின் உரைப்போக்கினை விளங்கிக் கொள்ளல்-இலக்கணஇலக்கிய உரையாசிரியர்களின் உரை வேறுபாட்டினை உணர்ந்துக்கொள்ளல்.	இலக்கண உரையாசிரியர்களின் வரலாறுஇ இலக்கண நூல்களுக்கு உரை எழுதும் தன்மைக் குறித்த அறிவைப் பெறுதல். தமிழ் இலக்கியங்களுக்கு உரையெழுதுபோக்குக் குறித்தத் திறனைப் பெறுதல்.	national
14	ஆராய்ச்சி நெறிமுறைகள்	TA915	தமிழின் வளமான ஆய்வு வரலாற்றினை விளங்கிக் கொள்ளல்.	தமிழின் வளமான ஆய்வு வரலாற்றினை விளங்கிக் கொள்வர்.	global

15	<p align="center">போட்டித் தேர்வுகளுக்கான தமிழ்</p>	TA916A	<p>அரசுப் பணியாளருக்கான போட்டித் தேர்வுகள், இந்திய ஆட்சிப்பணி, நுழைவுத் தேர்வுகள் ஆகியவற்றை நினைவில் கொண்டு, தமிழ் இலக்கியங்களிலிருந்து இப்பகுதி அமைக்கப்பட்டுள்ளது.</p>	<p>போட்டித்தேர்வு நோக்கில் இலக்கியம் பெற்றிருப்பர். உலகமயமாக்கச் சூழலில் தமிழ் மொழியறிவும் அடிப்படைத் தேவை என்பதை அறிந்து கொள்வர். தமிழ் இலக்கண மொழியின் கட்டமைப்பினை அறிந்து கொள்வர்.</p>	national
16	<p align="center">திறனாய்வுக்கலை</p>	TA917X	<p>மாணவர்களுக்குத் தொல்காப்பியம் முதல் சமகாலம் வரையிலான இலக்கிய, இலக்கணப் பனுவல்களை அறிமுகப்படுத்துவது, அதன் வளர்ச்சிப் போக்குகளையும் நோக்குகளையும் திறனாய்வு செய்யும் முறையினைக் கூறல்.</p>	<p>மாணவர்களுக்குத் தொல்காப்பியம் முதல் சமகாலம் வரையிலான இலக்கிய, இலக்கணப் பனுவல்களை அறிமுகப்படுத்துவது, அதன் வளர்ச்சிப் போக்குகளையும் நோக்குகளையும் திறனாய்வு செய்யும் முறையினைக் கூறல்.</p>	global

17	தொல்காப்பியம் - பொருளதிகாரம் - 2	TA1013	தமிழ் மொழியில் உள்ள தொல்காப்பியபொருளதிகாரம் குறித்தும் அவற்றின் தமிழ்மொழியின் இலக்கணநூலான தொல்காப்பியத்தில் பொருளதிகாரத்தின் அக்கால மக்களின் அகப்புற வாழ்வியலை அறிந்துக் கொள்வது	பழந்தமிழரின் அகவாழ்வியலுக்கான இலக்கணத்தை அறிந்துகொள்வர். பழந்தமிழரின் புற வாழ்வியலுக்கான இலக்கணத்தை அறிந்துகொள்வர். களவு - களவுக்கான கூற்று நிகழ்த்துபவர்களின் இலக்கணத்தை அறிந்துகொள்வர். கற்பு - கற்குக்கான கூற்று நிகழ்த்துபவர்களின் இலக்கணத்தை அறிந்துகொள்வர்.	national
18	திணையிலக்கியங்கள்	TA1014	தமிழ் இலக்கியத்துள் திணை அடிப்படையிலான இலக்கியப் பாடுபொருள் என்பது மிகவும் தொன்மையான ஒன்றாகவும் உலக இலக்கிய வகைமைக்கான தனிச்சிறந்த கொடையாகவும் அமைகின்ற தன்மையினை விளங்கிக் கொள்ளச் செய்தல்	<ul style="list-style-type: none"> • தமிழின் திணை மரபை அறிமுகப்படுத்துதல் - அகத்திணை, புறத்திணை இலக்கியங்களை அறிமுகப்படுத்துதல் 	global

19	இலக்கியக் கொள்கை	TA1015	இலக்கியக் கோட்பாடு – இலக்கியத் திறனாய்வு – இலக்கிய வரலாறு – இலக்கியம் ஆகியவற்றின் தனித்தன்மைகளையும் உறவுநிலைகளையும் குறித்த அறிவைப் பெறுதல் மொழியியல்ஓ ஒப்பியல்ஓ சமூகவியல்ஓ பெண்ணியியல்ஓ தலித்தியல் ஆகிய திறனாய்வு முறைகளின் அறிவைப் பெறுதல்	உளப்பகுப்பாய்வியல்ஓ தொன்மவியல்ஓ அமைப்பியல்ஓ பின் அமைப்பியல் ஆகிய திறனாய்வு முறைகளின் அறிவைப் பெறுதல் பின் நவீனத்துவம்ஓ பின் காலனித்துவம்ஓ எடுத்துரைப்பியல்ஓ புலம்பெயர் இலக்கியத் திறனாய்வுஓ சூழலியல் ஆகிய திறனாய்வு முறைகளின் அறிவைப் பெறுதல் ஆய்வு மாதிரிகள் குறித்த அறிவையும் பயிற்சியும் பெறுதல்	global

20	ஆய்வேடு	TA1017	தமிழின் வளமான ஆய்வு வரலாற்றினை விளங்கிக் கொள்ளல் - மாணவர்கள் ஆய்வு செய்தல்	தமிழின் வளமான ஆய்வு வரலாற்றினை விளங்கிக் கொள்ளல் - மாணவர்கள் ஆய்வு செய்யும் திறனைப் பெறுவர்.	national
21	மொழி பெயர்ப்புக் கலை	TA1016A	உலகமயமாகிக் கொண்டிருக்கும் பின்னணியில், பன்மொழித் திறன் ஒவ்வொருவருக்கும் தேவை. குறைந்த அளவு ஆங்கிலத்தில் மொழிபெயர்க்கும் திறன் வேண்டி இப்பாடம் அமைக்கப்பட்டுள்ளது.	உலகமயமாகிக் கொண்டிருக்கும் பின்னணியில், பன்மொழித் திறன் ஒவ்வொருவருக்கும் தேவை. குறைந்த அளவு ஆங்கிலத்தில் மொழிபெயர்க்கும் திறனைப் பெறுவர்.	global
22	சுய கற்றல் (இணையத்தமிழ்)		இணையத் தமிழ் குறித்து மாணவர்கள் சுயமாக இணையம் வாயிலாகக் கற்றுக் கொள்ள வழிகாட்டல்.	இணையத் தமிழ் குறித்து மாணவர்கள் சுயமாக இணையம் வாயிலாகக் கற்றுக் கொள்ளும் திறனைப் பெறுவர்.	global

Programme Name : BA Tamil

Programme Outcomes (POs) of B.A.,Tamil

இளங்கலைப் பாடத் திட்டத்தின் வாயிலாக மாணவர்கள் கீழ்க்கண்ட திறன்களைப் (பெறுவர்) பெற்றிருப்பர்.

PO1: தாங்கள் புதிதாகக் கற்றுணர்ந்தவற்றை ஆய்ந்து எடுத்துரைக்கின்ற திறனைப் பெற்றிருப்பர். தாங்கள் கற்றுணர்ந்தவற்றுள் புதிய சிந்தனைகளைப் புகுத்தி வேலைவாய்ப்பினைப் பெறவும் சுய தொழில் தொடங்கவும் தேவையான திறன்களைப் பெற்றிருப்பர்.

PO2: மேற்படிப்பு படிக்க வேண்டும் என்ற எண்ணத்தையும் தொழில்முனைவோராகிச் சாதிக்க வேண்டும் என்ற தூண்டுதலையும் பெற்றிருப்பர்.

PO3: அறவிழுமிய உணர்வுள்ளவர்களாகவும் சமூகப் பொறுப்புள்ள குடிமகனாகவும் விளங்குகின்ற பண்பினைப் பெற்றிருப்பர்.

PO4: தனிமனித வாழ்விலும் பொது வாழ்விலும் ஏற்படுகின்ற சிக்கல்களுக்குப் பகுப்பாய்வுத் திறன்,, பன்னோக்கு சிந்தனைத் திறன், முடிவெடுக்கும் திறன் ஆகியவற்றைப் பயன்படுத்தித் தீர்வு காணும் திறனைப் பெற்றிருப்பர்.

PO5: எழுத்தாற்றல் மற்றும் பேச்சாற்றல் திறன்கள் வாயிலாகத் தங்களை மேம்படுத்திக் கொள்கின்ற திறனைப் பெற்றிருப்பர்.

Program Specific Outcomes (PSOs) of B.A.,Tamil

இளங்கலைப் பாடத் திட்டத்தின் வாயிலாக மாணவர்கள் கீழ்க்கண்ட திறன்களைப் (பெறுவர்) பெற்றிருப்பர்.

PSO1: தமிழ்நாடு அரசுத் தேர்வாணையம், பல்கலைக்கழக மானியக் குழுப் போட்டித் தேர்வுகளில் வெற்றி பெறுவதற்கான திறன்களைப் பெற்றிருப்பர்.

PSO2: கணினித் தமிழ், பயிற்சி பெறுவதன் மூலம் வேலை வாய்ப்பில் முன்னுரிமையும் தனியாகக் கணினிப் பயிற்சி மையம் வைத்து நடத்திடவும் பல ஆய்வேடுகளைத் தட்டச்சு செய்தும் தனித்தியங்கக்கூடிய திறன்களைப் பெற்றிருப்பர்.

PSO3: அறவிழுமிய உணர்வுள்ளவர்களாகவும் சமூகப் பொறுப்புள்ள குடிமகனாகவும் விளங்குகின்ற பண்பினைப் பெற்றிருப்பர்.

PSO4: தமிழைப் பிழையின்றிக் கற்பதன் வாயிலாகச் செய்தித்தாள்களில் மெய்ப்புத்திருத்துநர், தொலைக்காட்சிகளில் செய்தி வாசிப்பாளர் போன்ற பல்வேறு ஊடகப் பணிகளுக்குச் செல்கின்ற திறன்களைப் பெற்றிருப்பர்.

PSO5: சிறப்புத் தமிழ் கற்பதன் வாயிலாகச் சிறந்த பேச்சாளராகவும் எழுத்தாளராகவும் உருவாவதற்கான தனித்திறன்களைப் பெற்றிருப்பர்.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	இலக்கியம் - 1 இக்கால இலக்கியம் - 1 (கவிதை, உரைநடை, நாடகம்)	TA104	<ul style="list-style-type: none"> தமிழ்க் கவிதை மரபின் நவீன காலத் தோற்றப் பின்புலத்தில் புதிய கவிதைகள், உரைநடை, நாடகம் ஆகியவற்றை அறிமுகப்படுத்துதல் - நவீன இலக்கியங்களின் மீது ஆர்வத்தை ஏற்படுத்துதல் - வாசிப்பைப் பழக்கப்படுத்துதல். 	<ul style="list-style-type: none"> நவீன இலக்கியங்களின் மீதான ஆர்வம் - வாசிப்புப் பழக்கம் - பயிற்சி. 	global
2	இலக்கணம் - 1: நன்னூல் - எழுத்ததிகாரம்	TA105	<ul style="list-style-type: none"> தமிழ் எழுத்துக்களின் அமைப்பு - சொற்களின் உருவாக்கம் - சொற்களின் புணர்ச்சி ஆகியவற்றை அறிமுகப்படுத்துதல் - அடிப்படை இலக்கண அறிவை ஏற்படுத்துதல். 	அடிப்படை இலக்கண அறிவு பெறல	national

3	சார்புப் பாடம் 1: தமிழக வரலாறும் பண்பாடும் - 1	TA106	<ul style="list-style-type: none"> தமிழ்ச் சமூக வரலாற்றையும் பண்பாட்டு வரலாற்றையும் அறிமுகப்படுத்துதல் - பண்பாட்டுச் சிறப்பின் தனித்துவத்தை அறிமுகம் செய்தல் - வரலாற்றின் போக்கினையும் இடையீடுகளையும் இடையூறுகளையும் தெளிவுபடுத்துதல். 	<ul style="list-style-type: none"> தமிழக வரலாறு மற்றும் பண்பாடு பற்றிய புரிந்துணர்வு. 	national
4	இலக்கியம் - 2: இக்கால இலக்கியம் - 2 (புதினம், சிறுகதை, தன் வரலாறு)	TA204	<ul style="list-style-type: none"> சிறுகதை, புதினம், வாழ்க்கை வரலாற்று இலக்கியங்களை அறிமுகப்படுத்துதல் - நவீன இலக்கியங்களின் மீது ஆர்வத்தை ஏற்படுத்துதல் - வாசிப்பைப் பழக்கப்படுத்துதல். 	<ul style="list-style-type: none"> நவீன இலக்கியங்களின் மீதான ஆர்வம் - வாசிப்புப் பழக்கம் - பயிற்சி. 	global
5	இலக்கணம் - 2: நன்னூல் - சொல்லதிகாரம்	TA205	<ul style="list-style-type: none"> தமிழ்ச் சொற்களின் அமைப்பு - சொற்களின் வகைப்பாடு - சொற்களின் பயன்பாடு ஆகியவற்றை அறிமுகப்படுத்துதல் - அடிப்படை இலக்கண அறிவை ஏற்படுத்துதல். 	<ul style="list-style-type: none"> அடிப்படை இலக்கண அறிவு பெறல் 	national

6	சார்புப் பாடம் - 1: தமிழக வரலாறும் பண்பாடும் - 2	TA206	<ul style="list-style-type: none"> தமிழ்ச் சமூக வரலாற்றையும் பண்பாட்டு வரலாற்றையும் அறிமுகப்படுத்துதல் - பண்பாட்டுச் சிறப்பின் தனித்துவத்தை அறிமுகம் செய்தல் - வரலாற்றின் போக்கினையும் இடையீடுகளையும் இடையூறுகளையும் தெளிவுபடுத்துதல். 	<ul style="list-style-type: none"> தமிழக வரலாறு மற்றும் பண்பாடு பற்றிய புரிந்துணர்வு. 	national
7	இலக்கியம் - 3:சமயப் பாடல்களும் சிற்றிலக்கியங்களும்	TA304	<ul style="list-style-type: none"> தமிழின் வளமான சமய இலக்கிய மரபை அறிமுகப்படுத்துதல் - பல்சமய நோக்கு, செல்நெறி ஆகியவற்றைப் புரிந்துணர உதவுதல் - சிற்றிலக்கிய மரபை அறிமுகப்படுத்துதல் - சிற்றிலக்கியங்களின் பன்மைத்துவத்தை அறிமுகம் செய்தல். 	<ul style="list-style-type: none"> பல்சமயக் கடவுட் கோட்பாடு பற்றிய அறிமுகம் - சமயப் பொறைமை. 	global
8	இலக்கணம் - 3: யாப்பருங்கலக்காரிகை	TA305	<ul style="list-style-type: none"> தமிழ் யாப்பு மரபை அறிமுகப் படுத்துதல் - யாப்பிலக்கண அறிமுகம் செய்தல். 	<ul style="list-style-type: none"> யாப்பு பற்றிய அறிவு - பாட்டு இயற்றும் திறன் பெறல். 	national

9	சார்புப் பாடம் - 2: பயன்பாட்டுத் தமிழ்	TA306	<ul style="list-style-type: none"> கடிதங்கள் வரைதல், விளம்பரம், மெய்ப்புத் திருத்தல் அறிமுகப் படுத்துதல் - ஊடகங்களின் பங்கேற்பதற்கான அறிமுகம் தருதல். 	<ul style="list-style-type: none"> தமிழைப் பிழையின்றிக் கையாளும் திறனும் ஊடகப் பயன்படுத்தலில் சரியா புரிதலும். 	global
10	சிறப்புப்பாடம் : இலக்கியம் 4 - காப்பியங்கள்	TA404	<ul style="list-style-type: none"> காப்பியத்திற்கான தோற்றப் பின்னணி, சமயக் கொள்கை, பொதுமைப் பண்பு, கதைக்கரு, மரபு, இலக்கிய நயம் முதலியவற்றை அறிந்து கொள்ளல். 	<ul style="list-style-type: none"> தமிழின் வளமான காப்பிய மரபினை அறிந்து கொள்ளல் 	global
11	இலக்கணம் - 4 தண்டியலங்காரம்	TA405	<ul style="list-style-type: none"> அணிவகை, பா இயற்றுவதில் அணியின் தேவை, தமிழ் வடமொழி தொடர்பு, முதலியவற்றை அறிந்து கொள்ளல். 	<ul style="list-style-type: none"> அணிகளின் வகைகளை அறிதல், இலக்கியத்தில் அணிகளின் பயன்பாட்டைப் புரிந்துகொள்ளல் 	national
12	பாட நோக்கம் சார்புபாடம் - 2: கணினிக்கலை	TA406	<ul style="list-style-type: none"> கணினிக் கலையினைத் தமிழ் மொழியின் வாயிலாக அறிமுகப்படுத்துதல், தமிழ் வழியாக கணினியை இயக்கும் திறன் பெறுதல் 	<ul style="list-style-type: none"> கணினி நுட்பங்களைத் தமிழ் வழியாக அறிதல். 	global

13	துறை சாரா விருப்பப் பாடம் - 1 (ஆளு): தமிழ் இலக்கியம் ஓர் அறிமுகம்	NTA504	<ul style="list-style-type: none"> தமிழ் இலக்கியங்களை அறிமுகப்படுத்திக் கொள்வதன் வாயிலாகப் போட்டித் தேர்வுக்குத் தயாராதல். 	<ul style="list-style-type: none"> போட்டித்தேர்வுகளை எதிர்கொள்ளும் திறன் பெறல். 	national
14	இலக்கியம் 6 – சங்க இலக்கியம் (அகம் - புறம்)	TA606	<ul style="list-style-type: none"> தமிழின் திணை மரபை அறிமுகப்படுத்துதல் - அகத்திணை, புறத்திணை இலக்கியங்களை அறிமுகப்படுத்துதல் 	<ul style="list-style-type: none"> தமிழின் திணை மரபை அறிதல் - அகத்திணை புறத்திணை இலக்கியங்களை அறிதல் 	global
15	இலக்கணம் - நம்பியகப் பொருள்	TA607	<ul style="list-style-type: none"> பழந்தமிழரின் அகப்பொருள் ஒழுக்கம், திணைப்பாகுபாடு, காலம், களவுக்காலத்தும் கற்புக்காலத்தும் மேற்கொண்ட செயற்பாடுகள், சமூக கட்டமைப்புப் போன்றவற்றை அறிந்து கொள்ளல் 	<ul style="list-style-type: none"> பழந்தமிழரின் அகப்பொருள் ஒழுக்கம், திணைப்பாகுபாடு, காலம், களவுக்காலத்தும் கற்புக்காலத்தும் மேற்கொண்ட செயற்பாடுகள், சமூக கட்டமைப்புப் போன்றவற்றை அறிதல் 	global
16	சிறப்புப் பாடம்: திராவிட மொழிகளின் ஒப்பிலக்கணம்	TA606	<ul style="list-style-type: none"> திராவிட மொழிகள் - அவற்றின் இயல்புகள் - ஒருங்கிணைப்பு ஆகியவற்றை அறிமுகப்படுத்துதல். 	<ul style="list-style-type: none"> திராவிட மொழிகளைப் பற்றி அறிதல் 	global

17	சிறப்புப் பாடம்: அச்ச ஊடகம்	TA607	<ul style="list-style-type: none"> • அச்ச ஊடகத்தின் வருகை - பயன் - இன்றியமையாமை - தமிழில் இதழியல் வரலாறும் வளர்ச்சியும் ஆகியவற்றை அறிமுகப்படுத்துதல் 	<ul style="list-style-type: none"> • தமிழ் இதழியல் வரலாற்றை அறிதலின் வாயிலாக ஊடகத்தின் வலிமையை உணர்தல் 	national
18	கிறித்துவத் தமிழ் இலக்கியம்	TA608	<ul style="list-style-type: none"> • மேனாட்டுக் கிறித்துவர்கள், தமிழ்நாட்டுக் கிறித்துவர்கள், அவர் அறிமுகப்படுத்தி புதிய இலக்கிய வகைகள், தமிழ் மொழி சீர்த்திருத்தம், தமிழ் மொழி சிறப்புகளை உலகறிய செய்தமை போன்றவற்றை அறிந்து கொள்ளல். 	<ul style="list-style-type: none"> • கிறித்தவர்கள் தமிழுக்கு ஆற்றிய தொண்டினை அறிதல் 	global
19	தமிழ் இலக்கிய வரலாறு - 2	TA610	<ul style="list-style-type: none"> • தமிழ் இலக்கியங்களின் காலம் படிநிலை வளர்ச்சி வகைபாடு பொருள் வடிவம் முதலியவற்றுடன் தமிழ் இலக்கணப் பனுவல்களை அறிந்து கொள்ளல் 	<ul style="list-style-type: none"> • தமிழ் இலக்கிய வரலாற்றையும் வளர்ச்சிப்போக்கையும் அறிதல் 	national

20	துறை சாரா விருப்பப்பாடம் - 2 (ஆங்கிலம்):தமிழ் மொழியின் வளர்ச்சிப் போக்குகள்	NTA602	<ul style="list-style-type: none">மாணவர்களுக்குத் தொல்காப்பியம் முதல் சமகாலம் வரையிலான இலக்கிய, இலக்கணப் பணுவல்களை அறிமுகப்படுத்துவது, அதன் வளர்ச்சிப் போக்குகளையும் நோக்குகளையும் உணர்த்துதல், போட்டித் தேர்வுகளை எதிர்கொள்ளும் வகையில் உருவாக்குதல்.	போட்டித் தேர்வுகளை எதிர்கொள்ளல்	national
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PG AND RESEARCH DEPARTMENT OF MANAGEMENT STUDIES

MPHIL SYLLABUS

Effective from **2018-2019**

Outcome Based Education (OBE)

SACRED HEART COLLEGE (AUTONOMOUS)

TIRUPATTUR – DT - 635601

PROGRAMME OUTCOMES (PO)

PO1	Demonstrate intense knowledge in their discipline
PO2	Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice
PO3	Develop expertise in their field of study through projects and research activities
PO4	Prepare themselves to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization
PO5	Develop social and ethical responsibility in the transfer and management of knowledge

PROGRAMME SPECIFIC OUTCOMES (PSO)

PSO1	Management graduates will have ability to identify, formulate and analyse the problems relating to marketing, finance, human resource, operations management and hospital management
PSO2	Management graduates will be trained in the area of interpersonal skills and implement, use appropriate techniques, management skills and facilitating optimal solution

PSO3	Developing industry – ready managers with proper learning, training, research and consultancy, set up business enterprise and enhance diversified growth of entrepreneurship
PSO4	Emanate creative leadership, technical skills, passions and learning from its every corner to cast its rays towards empowering the rural youth to excel in their specialized domain using innovative technology
PSO5	Nurturing competent professionals with business and management acumen, who shall hold high degree of human values, social and ethical sensitivity in their professional and personal lives

Course Objectives and Outcome- MPhil

Sl.No	Subject	Course code	Course Objectives	Course Outcomes	Course relevance
1	Research Methodology	MPM101	Evaluate the Effectiveness of Different Sampling Techniques in Improving Research Representativeness. Investigate the Reliability and Validity of Quantitative Measurement Tools in Social Science Research	Students will demonstrate a comprehensive understanding of various research designs, including experimental, quasi-experimental, and non-experimental designs. Students will acquire a	International

				<p>solid foundation in statistical methods commonly used in research, including descriptive statistics, inferential statistics, and multivariate analysis.</p>	
2	Skill Set for Management Teaching	MPM102	<p>Develop Effective Classroom Management Techniques.</p> <p>Enhance Instructional Design and Delivery Skills</p>	<p>Participants will demonstrate the ability to effectively manage and facilitate management classes, creating an inclusive and participatory learning environment.</p> <p>Participants will showcase expertise in designing and implementing innovative instructional methods suitable for management education, such as case-based learning,</p>	International level

				simulations, and real-world projects.	
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Name of the Programme: MBA

Programme Outcomes

PO1	Demonstrate intense knowledge in their discipline
PO2	Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice
PO3	Develop expertise in their field of study through projects and research activities
PO4	Prepare themselves to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization
PO5	Develop social and ethical responsibility in the transfer and management of knowledge

Programme Specific Outcomes

PSO1	Management graduates will have ability to identify, formulate and analyse the problems relating to marketing, finance, human resource, operations management and hospital management
PSO2	Management graduates will be trained in the area of interpersonal skills and implement, use appropriate techniques, management skills and facilitating optimal solution
PSO3	Developing industry – ready managers with proper learning, training, research and consultancy, set up business enterprise and enhance diversified growth of entrepreneurship
PSO4	Emanate creative leadership, technical skills, passions and learning from its every corner to cast its rays towards empowering the rural youth to excel in their specialized domain using innovative technology

PSO5	Nurturing competent professionals with business and management acumen, who shall hold high degree of human values, social and ethical sensitivity in their professional and personal lives
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S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
S No	Organizational Behaviour & Management Process	MBA130T	<ul style="list-style-type: none"> To enable students to understand specific theories related to organizational behaviour and principles of management. To evaluate methods of motivating and rewarding individuals and groups and integrate individual, group and management level concepts. 	<ul style="list-style-type: none"> Students are expected to develop the ability to understand managerial / organizational situations. They will know the framework for managing individual and group performance. 	local
1	Economics for Management	MBA131T	<ul style="list-style-type: none"> To help students to develop a basic understanding on economic principles and concepts. To identify economic trends and current business scenario that affects individual firms and 	<ul style="list-style-type: none"> Students are expected to become familiar with both principles of micro and macroeconomics. They would also become familiar with application of these principles to appreciate the functioning 	Regional

			industry.	of both product and input markets as well as the economy.	
2	Total Quality Management	MBA132T	<ul style="list-style-type: none"> • To develop an understanding on product quality characteristics and service quality characteristics. • To learn the key steps in the quality control. 	<ul style="list-style-type: none"> • Quality management philosophies and tools to facilitate continuous improvement and ensure customer delight are learnt by students. • Makes the students understand the quality management process in today's dynamic corporate world. 	local
3	Accounting for Management	MBA133T	<ul style="list-style-type: none"> • To make the students get exposed to the various accounting systems, accounting control and linking the accounting system to the management decision making. • To create an awareness of the importance and usefulness of the accounting function. 	<ul style="list-style-type: none"> • Enables the students to learn the basic functions, principles and concepts of finance in management. • Possess a managerial outlook on accounts. 	National

4	Advanced Business Statistics for Management	MBA134T	<ul style="list-style-type: none"> To impart the knowledge to analyze the data using statistical techniques, such as hypothesis testing and regression estimation. 	<ul style="list-style-type: none"> To facilitate objective solutions in business decision making under subjective conditions. 	local
5	Management Information System	MBA135T	<ul style="list-style-type: none"> To provide an awareness among the upcoming managers, to understand the Concepts and Applications for Decision Making. It identifies the various information systems solution for vertical and horizontal workflow of business operations. 	<ul style="list-style-type: none"> Development of the computing skills among the budding managers of the tomorrow's world. Gains knowledge on effective applications of information systems in business. 	Regional
6	English for Executive Communication	MBA136P	<ul style="list-style-type: none"> The objective of this paper is to introduce to the students to the basics of English. To enable learners to write in English precisely and effectively. 	<ul style="list-style-type: none"> The course will help the students to learn from the fundamentals of English. Helps them to learn higher level communication in the language. 	Local

7	Business Application Software	MBA137X	<ul style="list-style-type: none"> To Understand the Applications of Word, Excel and Power Point. 	<ul style="list-style-type: none"> Enhancement in the usage level of office tools. 	Local
8	Business Research Methods	MBA230T	<ul style="list-style-type: none"> To introduce to the students the basic concepts of Research in Business. To highlight the need for Research in the functional areas of management 	<ul style="list-style-type: none"> The course aims at equipping students with an understanding of the research process tools and techniques in order to facilitate managerial decision making. Students will learn to apply the principles of research methodology for the research design for the various mini and major projects of the MBA programme. 	Local
9	Marketing Management	MBA231T	<ul style="list-style-type: none"> To facilitate understanding of the conceptual framework of marketing and its applications in decision making under various environmental constraints. The course aims at making students understand concepts, philosophies, processes and techniques of 	<ul style="list-style-type: none"> Students will learn to analyze markets and design customer driven strategies. By reading text and relating the concepts through cases the student will understand the concepts of marketing management. 	Regional

			managing the marketing operations of a firm.		
10	Human Resource Management	MBA232T	<ul style="list-style-type: none"> • To provide basic knowledge of functional area of Human Resource Management. • To provide functional areas of Human Resource Management for all future managers whether or not their career orientation lies in human resources. 	<ul style="list-style-type: none"> • Students should be able to understand the basic HR concepts. • Students will be able to understand the process of recruitment, selection, performance appraisal, training & development, compensation and employee retention approaches and strategies. 	local
11	Financial Management	MBA233T	<ul style="list-style-type: none"> • To inculcate the basic concepts of mobilizing and utilizing the finance in an organization. • To enable the students to understand the application of financial management techniques in wealth maximization. 	<ul style="list-style-type: none"> • Provides support for decision making and enables managers to monitor their decisions for any potential financial implications and for lessons to be learned from experience and to adapt or react as needed. • Helps in understanding the use of resources efficiently, effectively and economically to focus on wealth maximization rather 	Regional

				than profit maximization.	
12	Corporate Legal Environment	MBA234T	<ul style="list-style-type: none"> • To provide the students with practical legal knowledge of general business law issues to become more effective business leaders. • This course is intended to make students understand various social, political, legal and economic in making managerial decisions. 	<ul style="list-style-type: none"> • Legal insight will be established in the business practices according to the situation of changing environment. • To integrate international law relating to Business laws in India 	National
13	Applied Operations Research for Management	MBA235T	<ul style="list-style-type: none"> • To impart the knowledge of quantitative methods used in linear programming problems, transportation problems, assignment problems, project management, game theory problems, replacement and maintenance. 	<ul style="list-style-type: none"> • Students will be tested on the application of Operations Research to business related problems. • To facilitate quantitative solutions in business decision making under conditions of certainty, risk and uncertainty. 	National

14	Production and Operations Management	MBA236T	<ul style="list-style-type: none"> • To make the students understand the decision making process in planning, scheduling, and control of production and operation functions. • To develop the skills of Operations Research Models in planning, Scheduling, Project and inventory management. 	<ul style="list-style-type: none"> • Students will be able to know decision making process in various levels production and operation management and be able to apply those techniques to improve productivity. • To enable the students to apply the techniques of quality management to improve the productivity. 	Regional
15	CORPORATE GOVERNANCE AND SOCIAL RESPONSIBILITY	MBA330T	<ul style="list-style-type: none"> • To familiarize the students with the understanding of issues and practices of corporate governance in the global and Indian context. • To realize the importance of social responsibility as the key response for organization. 	<ul style="list-style-type: none"> • Students will come to know about issues and practices of corporate governance in Global and Indian context. • Students understand the importance of social responsibility as a key enabler in the society. 	National
16	Export and Import Management	MBA331T	<ul style="list-style-type: none"> • To familiarize students with policy, procedures and documentation relating to foreign trade operations. • To enable the students to gain the knowledge and apply it in the respective business which can be helpful to them at future. 	<ul style="list-style-type: none"> • Helps in learning the Cross-cultural export and import management for successful operations. • Students learn to handle the export-import business. 	Global developmental

17	Digital Marketing	MBA332A	<ul style="list-style-type: none"> To learn the essentials of digital marketing in exploring content and connecting with customers. <p>The course aims to acquaint students with the process of marketing through Internet, Social Media and Mobile Marketing</p>	<ul style="list-style-type: none"> The student will be able to evaluate the risks involved in digital marketing. The strategies discussed will help students to attract and retain the online customers. 	Global developmental needs
18	Corporate Finance	MBA332B	<ul style="list-style-type: none"> To understand the Tact's & Techniques methods of corporate finance. To understand the role of financial manager as a decision maker is to be emphasized with a managerial focus. 	<ul style="list-style-type: none"> It assist the students to get exposure through application oriented problems and discussions <p>Helps to develop analytical skills in the corporate</p>	National
19	Project Management	MBA332C	<ul style="list-style-type: none"> To understand the concept of project and steps in project management and to enable the students to prepare business proposals. To enable the students to evaluate the technical feasibility, financial 	<ul style="list-style-type: none"> Understanding the key Project Management concepts and developing working competence in the use of a Project Management Software. Students learn to be effective as project 	

			viability, market acceptability and social desirability of projects and to be effective as project managers and as part of project teams.	managers and as part of project teams.	Regional
20	Counseling Skills for Managers	MBA332D	<ul style="list-style-type: none"> To develop basic skills among students to independently handle a wide range of employee counseling and performance counseling. To make them understand the uses counseling employees. 	<ul style="list-style-type: none"> Updating the current systems and practices of managing work force. Provides knowledge for the dealing with the issues relating to management of workforce 	Global developmental needs
21	Marketing of Hospital Services	MBA332E	<ul style="list-style-type: none"> To inculcate application of Marketing for service businesses from a managerial perspective. To understand and appreciate the concept of marketing the services in theory and apply in market. 	<ul style="list-style-type: none"> Enhance students in learning the concept of healthcare marketing towards promoting hospital services. Provides a managerial frame work of service marketing. 	Regional

22	Brand and product management	MBA333A	<ul style="list-style-type: none"> To impart in-depth knowledge to the students regarding the theory and practice of Brand and Product Management. <p>To understand the need to develop new products</p>	<ul style="list-style-type: none"> To successfully establish and sustain brands and lead to extensions. To give students a deeper understanding about the process of brand building in a competitive business scenario. 	National
23	Micro Finance	MBA333B	<ul style="list-style-type: none"> To enable students to comprehend the importance of micro finance. To understand the techniques involved in their evaluation. 	<ul style="list-style-type: none"> Students will possess good knowledge in micro finance management. Induce the minds of students to apply in the field of micro finance. 	Regional
24	Quality Management	MBA333C	<ul style="list-style-type: none"> To expose the multi-disciplinary students joining MBA to the Principles of Quality Management, to equip the students with an understanding for statistical Quality Control To develop in the students an understanding of Benchmarking, Total Quality Management and ISO – 9000 and other modern quality 	<ul style="list-style-type: none"> Students will understand the tools necessary to solve Quality management problems. Helps in learning the Quality perspectives in organization. 	Regional

			management methods and systems		
25	Participative Management	MBA333D	<ul style="list-style-type: none"> To provide inputs to the students on how to work in a dynamic and empowered environment. To help the students to learn the basic concepts of participative management 	<ul style="list-style-type: none"> Helps in exploring the contemporary knowledge relating to participative management. Students will gain the knowledge relating to human relation problems and their solutions. 	National
25	Health Insurance and Medical Tourism	MBA333E	<ul style="list-style-type: none"> To acquaint students to the concept of health insurance, product development and various health insurance products. To develop knowledge in the area of health sector reform with a special emphasis on Indian health sector related policies. 	<ul style="list-style-type: none"> Students learn the health insurance claim policies and the insurance products for medical tourism. Conceptualizing the importance and monitoring quality in health care with a special emphasis on tools for quality improvement. 	National
26	Customer Relationship Management	MBA334A	<ul style="list-style-type: none"> To make the students understand the organizational need, benefits and process of creating long term value for 	<ul style="list-style-type: none"> To use strategic customer acquisition and retention techniques in CRM. To get exposed in operating 	

			<p>individual customer.</p> <ul style="list-style-type: none"> To create awareness about formulation and implementation of CRM and to e-CRM and various CRM packages. 	technologies in CRM	National
27	Strategic Investment and Finance Decisions	MBA334B	<ul style="list-style-type: none"> To train students on how to assess the employee decision making necessary at higher levels of Investment and financial Management. To develop the analytical skill for the students and influence it in their job field. 	<ul style="list-style-type: none"> Helps to induce the student's knowledge in application oriented. The course manipulates the concepts in practical way. 	Global developmental needs
28	Logistics Management	MBA334C	<ul style="list-style-type: none"> To introduce process and functions of logistics system and to understand the major building blocks, functions, business process, performance metrics and decision making in supply chain network. <p>To provide an insight into the role of Internet Technologies in Logistics Management and to learn the need and importance of logistics in product flow</p>	<ul style="list-style-type: none"> To enable an efficient method of moving products with optimization of time and cost. Enables the students to gain knowledge of risks associated in Logistics management. 	Global developmental needs

29	Strategic Human Resource Management and Development	MBA334D	<ul style="list-style-type: none"> • To introduce to the students the emerging field of strategic human resource management. • To help the students to understand the nature of the changing global business environment and the role of HR. 	<ul style="list-style-type: none"> • Students gain knowledge over the subject. • Students develop appropriate skills for managing human work forces strategically. 	National
30	Patient Care Management	MBA334E	<ul style="list-style-type: none"> • To understand the processes and details related to effective patient care management and to further increase the satisfaction levels of patients. • To familiarize students on patients care management systems. 	<ul style="list-style-type: none"> • Students' will learn to facilitate managerial decision making in patient care management. • Developing skills in planning, building and managing patients care. 	National
31	Retail Management	MBA335A	<ul style="list-style-type: none"> • To equip the students with the fundamental framework of retail marketing. • To understand the various elements involved in the making of retail strategy including retail location strategy and store design strategies. 	<ul style="list-style-type: none"> • To manage the retail chains in India. • To understand the retail customer's behaviour in India. 	Regional

32	International Trade Finance	MBA335B	<ul style="list-style-type: none"> • To understand the international markets for payments and credit. • To understand the evaluation of international investments. 	<ul style="list-style-type: none"> • Enable the students to gain the knowledge and apply where it is to be influenced. • Helps to know the practices of international trade finance. 	Global developmental needs
33	Enterprise Resource Planning (ERP)	MBA335C	<ul style="list-style-type: none"> • To make the students to participate in planning and implementation of advanced enterprise wide systems and technologies. • To expose the students to the technical aspects of ERP systems, particularly to those that help in the process of infrastructure planning, selection, implementation, pitfalls, and administration of these systems 	<ul style="list-style-type: none"> • Enables the Knowledge of ERP implementation cycle. • Develops the awareness of core and extended modules of ERP. 	National
34	Knowledge Management and Occupational Testing	MBA335D	<ul style="list-style-type: none"> • The objective of the course is to prepare HR managers to participate in the organizational knowledge management efforts and facilitate management of knowledge. • To develop a perspective 	<ul style="list-style-type: none"> • Provides a theoretical background for supplementing the understanding knowledge management and psychological assessment. • Helps to learn to interpret test profiles and explore 	

			about the intricacies and ethics of use of psychological tests.	patterns in interpretation from several tests.	Regional
35	Hospital Architecture Planning	MBA335E	<ul style="list-style-type: none"> • To expose the students to planning and operation of hospitals in a detailed manner which will include all facets of hospital planning activities covering every department that is involved both in clinical care as well as supportive services. • To Prepare Project Management for hospital and other organizations. 	<ul style="list-style-type: none"> • Students will be Equipped with an understanding and to learn the planning of a full-fledged hospital. • Ensure the students' knowledge about hospital planning and Architecture. 	Local
36	Soft Skills	MBA337P	<ul style="list-style-type: none"> • Understand the concept of employability skills and applications in the organization. • To lay foundation for developing the skills towards employment. 	<ul style="list-style-type: none"> • Students will come to know about employability skill in Global and Indian context. • Provides an understanding about the various aspects of skill development in an organization. 	National

37	Strategic Management	MBA430T	<ul style="list-style-type: none"> • To impart to the students the basic concepts of Strategic Management process. • To focus on how firms formulate, implement and evaluate corporate business strategies and to learn to use various tools. 	<ul style="list-style-type: none"> • Students will be able to know basic concept of strategic management process, the way corporate business strategies are formulated, implemented and evaluated. • Students come to know the various strategic tools included in the process 	Global developmental needs
38	International Business Management	MBA431T	<ul style="list-style-type: none"> • To introduce students to the world of global business and to expose them to the realities of doing business internationally. • To familiarize students with the competitiveness of global industry and the various theoretical frameworks available. 	<ul style="list-style-type: none"> • Students will come to know about the world of global business, the competitions that they ought to face and the various theoretical frame works that are available. • Develops an appreciation of business issues and their influence on International business decision making. 	Global developmental needs
39	Rural Marketing	MBA432A	<ul style="list-style-type: none"> • To provide conceptual understanding on the Rural Marketing. • To create awareness about the applicability of the concepts, techniques and processes of marketing in rural context. 	<ul style="list-style-type: none"> • Perspectives of rural marketing and the knowledge of the emerging managerial initiatives. • To know the relevant frameworks in rural marketing, institutions engaged in rural marketing 	Regional

40	Banking and Insurance Management	MBA432B	<ul style="list-style-type: none"> • To impart knowledge of various functional areas and risk management in banking and insurance sector. • To bring out relevant information of banking & insurance and its application. 	<ul style="list-style-type: none"> • It nurtures the information about the management of banking and insurance. • Enhance with managing skills in banking and insurance fields. 	National
41	Inventory Management	MBA432C	<ul style="list-style-type: none"> • To provide students with an appreciation of the crucial role of Inventory and Materials Management in the efficiency, competitiveness, and profitability of a business organization. • To introduce the student to the formulation and application of methods and models for Inventory Management. 	<ul style="list-style-type: none"> • Enables to monitor inventory levels and projected item availability and to perform basic warehousing operations including receiving, putting away, picking and shipping. • Students learn to analyze and develop inventory management policies under deterministic and stochastic environments. 	Regional

42	Talent Management	MBA432D	<ul style="list-style-type: none"> • To enable the students to understand the importance of Talent Management. • To impart the students the application of Talent Management 	<ul style="list-style-type: none"> • Helps students to gain knowledge in talent management practices. • Improvement in the Skills needed for the talent management and performance management. 	National
43	Logistics for Health Care Services	MBA432E	<ul style="list-style-type: none"> • To understand the processes and details related to Inventory Control and Purchase Management (ICPM) in Healthcare Industry. • To examine the strategic function of logistics Management in the Modern Corporation. 	<ul style="list-style-type: none"> • Provides learning the supply chain management in hospitals. • Creates awareness among the students with basic concepts of logistics for health care services. 	Global developmental needs
44	Advertising and sales promotion	MBA433A	<ul style="list-style-type: none"> • To acquaint the students develop an effective Advertising program. • Appreciate from a client's side perspective as well as an agency. 	<ul style="list-style-type: none"> • Insight into the importance of advertising and sales promotion campaigns. • To plan the objective setting in relation to consumer decision making processes. 	National
45	Strategic Cost Management and Control	MBA433B	<ul style="list-style-type: none"> • To acquaint the students with concepts and various aspects of cost management from strategic perspective. • To induce the students mind and skill to practice 	<ul style="list-style-type: none"> • To gain knowledge about the strategic cost management • Learn to control and manage various cost 	National

			and apply where it is to be used.	management practices in the organization	
46	Information Technology in Supply Chain Management	MBA433C	<ul style="list-style-type: none"> • To appreciate the role of IT in supply chain. • To understand data mining in supply chain and to analyze IT practices in supply chain. 	<ul style="list-style-type: none"> • Create capability to analyze, design and improve the supply chain in an organization. • It provides an opportunity for managers to plan, analyze and design information system solutions for various functionalities of the organization 	Global developmental needs
47	Organization Development and Change Management	MBA433D	<ul style="list-style-type: none"> • To impart the students an overview of organizational change. • To help the students to gain knowledge on change management and OD. 	<ul style="list-style-type: none"> • Teaches the students how to facilitate continuous improvement in organization. • Familiarizes the students with the process of organization development and change and its importance. 	Regional
48	Risk and Disaster Management	MBA433E	<ul style="list-style-type: none"> • To familiarize the students and to identify the areas of safety and risk and managing of the same. • To acquaint the students 	<ul style="list-style-type: none"> • Enhance students in learning the hospital administrators in the area of disaster and safety management. 	

			with the basic concepts of risk in hospitals towards service assurance.	<ul style="list-style-type: none"> The course provides students with an understanding of quality and patient safety 	Global developmental needs
49	Consumer Behavior	MBA434A	<ul style="list-style-type: none"> To understand the importance of consumer behavior in Marketing, its models and types. To equip the students with various intrapersonal and interpersonal determinants of consumer behavior. 	<ul style="list-style-type: none"> The student will understand the influences on customer choice and the process of human decision making in a marketing context. To understand the consumer behaviour in making marketing plans. 	Global developmental needs
50	Security Analysis and Portfolio Management	MBA434B	<ul style="list-style-type: none"> To understand the techniques of diversifying the risk in financial investments. To have a reasonable knowledge of Indian capital market operations and investment opportunities. 	<ul style="list-style-type: none"> Helps to gain the knowledge and apply it in practically in the organization. Students get exposure and use it in business at future. 	Global developmental needs
51	Materials and Stores Management	MBA434C	<ul style="list-style-type: none"> To understand how material management should be considered for profitability and how to establish the best methods of inventory analysis and create performance 	<ul style="list-style-type: none"> Student gains knowledge on effective utilization of materials in manufacturing and service organization Understanding the concepts and principles materials and store management. 	

			<p>measures.</p> <ul style="list-style-type: none"> To appreciate the role of store management and forecasting and to analyze the management aspects of health and safety in work 		Regional
52	Compensation Management	MBA434D	<ul style="list-style-type: none"> To impart to the students the basic concepts of performance and compensation management. To help the students to be familiar with wage and salary administration. 	<ul style="list-style-type: none"> Helps students to relate between compensation and competencies of employees. Develops the basic knowledge on compensation payments. 	National
53	Management of Hospital Services	MBA434E	<ul style="list-style-type: none"> To enable the students gain insights into various aspects like importance, functions, policies and procedures, equipping, controlling, co-ordination, communication, staffing, reporting and documentation of both clinical and non-clinical services in a hospital To introduce the management concepts and principles of hospital 	<ul style="list-style-type: none"> Students are expected to develop the ability to understand and manage hospital services. Evaluation of various decisions of the hospital services. 	Global developmental needs

			services		
54	Services Marketing	MBA435A	<ul style="list-style-type: none"> • To make the students understand the uniqueness of services marketing • To identify and analyze the various components of the services mix. 	<ul style="list-style-type: none"> • Students are expected to develop the ability to understand and manage hospital services. • Evaluation of various decisions of the hospital services. 	Global developmental needs
55	Services Marketing	MBA435A	<ul style="list-style-type: none"> • To make the students understand the uniqueness of services marketing • To identify and analyze the various components of the services mix. 	<ul style="list-style-type: none"> • To understand the important of Services and its applications in Marketing. <p>To understand the essential components of a service quality.</p>	Global developmental needs
56	Mergers and Acquisitions	MBA435B	<ul style="list-style-type: none"> • To enable student to understand regulatory framework for mergers and acquisitions. • To know and observe the process involved in mergers and acquisitions and the available takeover defenses. 	<ul style="list-style-type: none"> • Student will be equipped with the nuances involved in mergers and acquisition process and the techniques required handling post-merger. • It will be enable them to obtain the knowledge and apply wherever it is required. 	Regional

57	Total Productivity Management	MBA435C	<ul style="list-style-type: none"> To make the students conversant with the tools of TPM which would be useful in coordinating the activities of productivity system by proper models and improvement techniques. 	<ul style="list-style-type: none"> To know the concept of productivity and its models To analyze organizational performance 	Global developmental needs
58	Training for Effective Performance	MBA435D	<ul style="list-style-type: none"> To make the students understand the concept of training, its need and importance. To enable the students to cope up with the learning process and the training need assessment. 	<ul style="list-style-type: none"> Development of managerial outlook on the subject. Brings out the importance of training and development in organization. 	Global developmental needs
59	Hospital Waste Management	MBA435E	<ul style="list-style-type: none"> To familiarize the learner with the importance, techniques and the procedures involved in the management of Hospital Waste. To identify key sources, typical quantities generated, composition, and properties of solid and hazardous wastes. 	<ul style="list-style-type: none"> Students' learn to manage biomedical waste and to prevent a general exposure to harmful effects. To familiarize the students with basic concepts of Hospital waste management. 	National

60	Employability Skills	MBA437X	<ul style="list-style-type: none"> • Identify the knowledge and skills required for obtaining and keeping employment. • Course work will emphasize individual skill assessments, interpersonal communication skills, workplace responsibilities, teamwork skills, safety issues, and personal management skills for the workplace. 	<ul style="list-style-type: none"> • To help students explore their values and career choices through individual skill assessments • To make realistic employment choices and to identify the steps necessary to achieve a goal 	National
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Name of the Programme: BBA

Programme Outcomes at Undergraduate Level

PO1: Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment

PO2: Pursue higher learning programmes and become entrepreneurs

PO3: Recognize moral and ethical values and be socially responsible citizens in the society

PO4: Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.

PO5: Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings

PO6: Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc

PO7: Demonstrate communication skills both oral and written in personal and academic pursuits

Programme Specific Outcomes (PSOs):

PSO1: Improve knowledge on the executive functions of a corporate manager and enable to fit into the global Scenario

PSO2: Develop Critical thinking and decision-making skills to make better decisions in the organization.

PSO3: Identifies business Problem solving skills to provide better solutions

PSO4: Students will build proficiency in their area of specialization

PSO5: Demonstrate ethical leadership and team work skills required to be successful managers and executive in establishments

PSO6: Students acquire practical and project work exposure

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Fundamentals of Management	B106	<ul style="list-style-type: none"> The objective of this course is to expose the students to the theories of management, organizational theory, and the practice of management in contemporary organizations from a conceptual, analytical and pragmatic perspective. 	<ul style="list-style-type: none"> The students should be able to apply the concepts of management to various kinds of organizations. 	Global developmental needs
2	Fundamentals of Organization	B107	<ul style="list-style-type: none"> To impart to the students an understanding of business concepts with a view to prepare those to face emerging challenge of managing business. 	<ul style="list-style-type: none"> To understand the basic concepts in commerce, trade and industry To understand modern business practices, forms, procedures and functioning of various business organizations 	National needs
3	Basic Accounting for Managers	B206	<ul style="list-style-type: none"> To Provide an in depth understanding of the Accounting Principles 	<ul style="list-style-type: none"> The students should be able to apply all accounting concepts in various real life situations. 	Global developmental needs

4	Banking & Insurance	B207	<ul style="list-style-type: none"> Understand the role of Banking and Insurance sector in the changing environment 	<ul style="list-style-type: none"> To know about the Banking Functions & Insurance Policies 	National needs
5	Principles of Human Resource Management	B313	<ul style="list-style-type: none"> This subject provides the platform to the students of management to appreciate the critical managerial functions, processes and tasks of HRM in an organization. To appreciate the methods and mechanics to bring out the best in people directing their energies towards corporate goals with personal satisfaction. 	<ul style="list-style-type: none"> To know about the recruitment procedure, performance appraisal, grievance redress measures etc. 	Global developmental needs
6	Principles of Marketing	B314	<ul style="list-style-type: none"> To understand the conceptual foundations of Marketing Management as a functional area of business. To understand the application of marketing concepts in making strategic decisions 	<ul style="list-style-type: none"> To be familiar with Mix Strategies 	Global developmental needs
7	Cost Accounting	B315	<ul style="list-style-type: none"> To Provide a thorough understanding of the theory and practice of cost for decision making 	<ul style="list-style-type: none"> To gain a working knowledge of the principles and practices of cost accounting 	National needs

8	Economics for Management	B316	<ul style="list-style-type: none"> This course is intended to provide a basic foundation on the principles of managerial economics and to demonstrate the application of economic theory to business decisions. 	<ul style="list-style-type: none"> The students will be in a position to elicit the importance of Economics in the current business scenario 	Global developmental needs
9	Business Practical - III	PB302	<ul style="list-style-type: none"> To familiarize students with various communication methods that exists in business and to train them for smooth transition from campus to corporate. 		Local needs
10	Legal Aspects of Business (Allied)	B317	<ul style="list-style-type: none"> To give an exposure to important commercial laws, the knowledge, that is essential for an understanding of the legal implications of the general activities of a modern business organization. To understand the legal frame work related to contract 	<ul style="list-style-type: none"> To develop the ability to apply theory in real life situation 	National needs
11	Research Methods	B415	<ul style="list-style-type: none"> To understand the concept of research and to have an insight on mode of doing research 	<ul style="list-style-type: none"> Students can integrate the research concepts and tools to make the managerial decision problems 	Global developmental needs

12	Production Management	B416	<ul style="list-style-type: none"> To make the students understand the decision making process in planning, scheduling and control of production and operation functions. 	<ul style="list-style-type: none"> To be able to locate facilities, to design layout and to plan production with efficient methods. 	Regional needs
13	Financial Management	B417	<ul style="list-style-type: none"> To familiarize oneself with the techniques used in financial management. 	<ul style="list-style-type: none"> Knowledge about capital structure, cost of capital, impact of dividend decisions in the corporate world 	National needs
14	Modern Industrial Relations and Labour Laws	B418	<ul style="list-style-type: none"> Students are to be acquainted with the industrial relations frame work in our country. Further, the importance of the maintenance of industrial peace and effort to reduce the incidence of strikes, lockout and industrial strike are to be emphasised. 	<ul style="list-style-type: none"> Students are to be acquainted with the industrial relations frame work in our country. Further, the importance of the maintenance of industrial peace and effort to reduce the incidence of strikes, lockout and industrial strike are to be emphasised. 	National needs
15	Basic Research Project	B420	<ul style="list-style-type: none"> To understand the concept of research and to have an insight on mode of doing research 	<ul style="list-style-type: none"> Student can integrate the research concepts and tools to make the managerial decision problems 	Regional needs

16	Organizational Behaviour (Allied)	B421	<ul style="list-style-type: none"> This course will enable students to describe specific theories related to Perception, Group and Organizational Change. They can demonstrate effective team work behaviors. It will help them evaluate methods of motivating and rewarding individuals and group and integrate individual, group and organizational level concepts 	<ul style="list-style-type: none"> After the completion of this course the student shall be able to understand the nature, scope importance of Organizational Behaviour. The importance of Group Behaviour, Personality and how conflicts can be resolved 	Global developmental needs
17	Accounting For Managers	B512	<ul style="list-style-type: none"> To provide an understanding of the theory and practice of management accounting decision making 	<ul style="list-style-type: none"> To gain a working knowledge of the principle and practices of management accounting 	National needs
18	Project	B516J			Regional needs
19	Business Environment	B513	<ul style="list-style-type: none"> Provide an understanding of the role of business in society. To relate the Impact of Environment on Business in an integrative manner 	<ul style="list-style-type: none"> To know about the culture, constitution, MRTP act 	Global developmental needs

20	Consumer Behaviour (Elective)	B514A	<ul style="list-style-type: none"> To impart to the students an understanding the importance of consumer behaviour in marketing, its models and influence 	<ul style="list-style-type: none"> To equip the learners in various influence of consumer behaviour 	Local needs
21	Services Marketing (Elective)	B514C	<ul style="list-style-type: none"> To understand the role of Service Marketing in the Society To make the students understand the uniqueness of Services Marketing 	To know about the Marketing of Services, Services sector contribution in the area of marketing	National needs
22	Sales & Distribution Management (Skill)	B515A	<ul style="list-style-type: none"> The purpose of this paper is to acquaint the student with the concepts which are helpful in developing a sound sales and distribution policy and in organising and managing sales force and marketing channels. 	<ul style="list-style-type: none"> To know about the sales and distribution management policies 	Global developmental needs
24	Export Management (Skill)	B515B	<ul style="list-style-type: none"> To make the students well aware about the formalities associated with export trade. To make the students aware of the external environmental factors having a bearing on the export trade. 	<ul style="list-style-type: none"> To make the students aware of the export stimulation efforts of the government and the opportunities available to exporters to make good business. 	Global developmental needs

25	Project Management (Skill)	B515C	<ul style="list-style-type: none"> The purpose of this paper is to acquaint the student with the concepts which are helpful in developing a projects 	<ul style="list-style-type: none"> To know about the project management procedures 	Regional needs
26	Brand and Product Management (Self-Study)		<ul style="list-style-type: none"> To impart in depth knowledge to the students regarding the theory and practice of Brand and Product Management 	<ul style="list-style-type: none"> To successfully establish and sustain brand and lead to extensions 	Local needs
27	Integrated Marketing Communication (Self-Study)		<ul style="list-style-type: none"> Understand the basic aspects of Advertisement & Sales Promotion 	<ul style="list-style-type: none"> Knowledge about Advertisement, Media, Execution of Advertisement, Sales Promotion, Campaign etc 	Global developmental needs
27	Management Concepts (Non Major Elective)	NBB503	<ul style="list-style-type: none"> To expose the students to the concepts of Business Management 		Global developmental needs
29	Strategic Management	B616	<ul style="list-style-type: none"> This course is to help students to integrate their knowledge of the functional areas of business into a holistic view of the firm and thereby determine and execute proper business level and corporate strategies 	<ul style="list-style-type: none"> Specific emphasis will be placed on identifying key drivers and issues that serve as the inputs to developing a strategy; moreover, students will learn to assess the impact on various strategic decisions on the organizations wide array of stakeholders. 	Regional needs

30	Entrepreneurial Development	B617	<ul style="list-style-type: none"> To introduce basis of Entrepreneurship 	<ul style="list-style-type: none"> To familiar with concepts and process of Entrepreneurship 	National needs
31	Financial Services (Elective)	B618A	<ul style="list-style-type: none"> To understand the role of financial institutions and Stock exchanges 	<ul style="list-style-type: none"> To know about the general understandings of Financial Institutions 	Global developmental needs
32	Logistics & Supply Chain Management (Elective)	B618B	<ul style="list-style-type: none"> To understand the role of logistic and supply chain management in the modern society To make the students understand the uniqueness of logistic and supply chain management 	<ul style="list-style-type: none"> To know about the general understandings of Logistic and supply chain management 	Global developmental needs
33	Total Quality Management (Elective)	B618C	<ul style="list-style-type: none"> The objective of this course is to cover not only Quality Management concepts 	<ul style="list-style-type: none"> To give students an understanding of the tools necessary to solve Quality management problems. 	Regional needs
34	Training & Development (Skill)	B619A	<ul style="list-style-type: none"> The purpose of this paper is to provide and in-depth understanding of the role of Training in the HRD 	<ul style="list-style-type: none"> Enable the course participants to manage the Training systems and processes. 	Local needs

35	Customer Relationship Management (Skill)	B619B	<ul style="list-style-type: none"> The objective of this course is to enable the students to understand the importance of satisfying the customer in today's competitive world 	<ul style="list-style-type: none"> Students can learn the relationship with the customer 	Regional needs
36	Business to Business Marketing (skill)	B619C	<ul style="list-style-type: none"> The Course attempts to expose the various concepts of Industrial marketing to students who have had a foundation course in marketing 	<ul style="list-style-type: none"> This would enable the students to become familiar with the peculiarities of Industrial marketing and be able to apply the concepts and practices Industrial marketing to real life situations. 	Global developmental needs
37	Business Communication (Self-Study)		<ul style="list-style-type: none"> Understand the critical and important role of Business Letters 	<ul style="list-style-type: none"> Knowledge about Trade Letter, Export Letter, Letters of Application and Report Writing 	Global developmental needs
38	Event Management (Self-Study)		<ul style="list-style-type: none"> To enable the students to understand the essentials of planning an event To study the concept and significance of event management 	<ul style="list-style-type: none"> Knowledge about organizing the event 	National needs
39	Organizational Behaviour (Elective)	NBB603	<ul style="list-style-type: none"> To establish knowledge in the areas of Personality, Perception and attitudes. 	<ul style="list-style-type: none"> After the completion of this course the student shall be able to understand the nature, scope and importance of organizational psychology 	Global developmental needs

Name of the Programme: M.Phil – Social Work

Programme Outcomes at M.Phil level

M.Phil Scholars will:

- Learn theories and models of Social Work
- Develop skills to theorize and conceptualize research outcomes.
- Enhance research skills through research methodology.
- Recognize moral and ethical values and be socially responsible citizens in the society.
- Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems of society with research.
- Demonstrate communication skills both oral and written in personal and academic pursuits

Programme Specific Outcomes

- Acquire skills to carryout research and effectively use its results for development impact.
- Pursue Ph.D. to be suitable for teaching and higher positions
- Recognize their future roles as teachers and researchers to enhance the knowledge.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	<p style="text-align: center;">Research Methodology For Social Work</p>		<ul style="list-style-type: none"> • To provide the students with knowledge of social work research methodology and statistics to conceptualize and execute a research study relevant in the discipline of social work • To equip the students with the necessary skills in applying research and statistical methods in social work research and practice. 	<ul style="list-style-type: none"> • The students will have the ability to plan and organize social researches in Research Institutes and Organisations. • The students will have ability to apply research and statistical methods in social work research and practice. 	<p style="text-align: center;">Global</p>
2	<p style="text-align: center;">Social Work Theories And Practice</p>		<ul style="list-style-type: none"> • Provide the students with advance theoretical knowledge, theoretical perspectives in the discipline of social work • Facilitate opportunities for the students to articulate personal and professional values and equip with skills required for practice trans-disciplinary and international settings 	<ul style="list-style-type: none"> • Students have clarity in concepts and theories. • Students are capable to articulate personal and professional values and equip with skills required for practice trans-disciplinary and international settings. 	<p style="text-align: center;">Global</p>

Name of the Programme: MSW

Programme Outcomes Postgraduate level

CO's files filled with Course relevance for the years 2017-18 and 2021-22

Undergraduates will be able to	
PO1	Social Work Practices Students learn social work values, principles, and techniques in the field of social work. They are able to associate with various communities, groups and diverse populations. Students understand the need, objectives, ethics and history of Social Work Practices.
PO2	Methods of Social Work Students are taught the primary and secondary methods of Social Work. Foundation content in this area includes the knowledge base (theory, research & practice) for the application and the professional practice of Social Work. Social Work students gain exposure in the field of Social Case Work, Social Group Work and Community Organization. Students gain firsthand experience in the application of Social Action, Social Welfare Administration and Social Work Research.
PO3	Field Work Exposure Students at an average spend 28 days every semester. This connects them with the organizations and Industries they would like to work in the future. Summer Block Field Training of 26 days is also provided to enrich students on various aspects in the field of Social Work. This exposure bridges the gap between class room theory and field work practices.
PO4	Human Resource Management This programme prepares students to build careers in the HR departments of industries, hospitals, NGOs and other organizations. They are exposed to various aspects on the administration of labour laws, disciplinary procedures, organizational behavior and human resource development. Students are taught to hone their skills on various aspects pertaining in the field of HRM.
PO5	Youth Development Students pertaining to the specialization of youth development acquire knowledge on policy formulations, importance of youth-adult relationships, and the benefits and challenges to successful practices in the field.

P06	<p>Community Development Social Work students in the field of community development deal with intervention in the communities to solve the community problems. Students address Many of the community problems like social injustice, poverty, inadequate housing, poor nutrition, lack of health, lack of medical services, unemployment, pollution, exploitation, bonded labour system</p>
P07	<p>Social Research A strong grounding on the methodologies of Social Work Research enable students to explore, study, ascertain and address various issues via scientific studies across various specializations in the field of Social Work. Student's carry out vivid research using different research designs, sampling techniques and correlate their research findings on addressing different issues.</p>
P08	<p>Theater Skills Students learn various traditional folk lore, drama and dances (Parai Attam, Kummi Attam, Tappu Attam and Kovil Attam) etc. The various aspects addressed here draw to the grass roots of tradition in sensitizing people via skits, drama and folk lore on various prevalent issues.</p>
P09	<p>Communication Skill All employers look for job candidates with strong communication skills. Students are taught the primary aspects of communication which include:-Listening, Speaking, Reading and Writing Skills. Group Discussions, Extempore and the aspects of Verbal and Non Verbal Communication techniques are addressed.</p>
P10	<p>Employability Skills Students in the field of Social Work gain skills and capabilities that make them more likely to gain employment and be successful in their chosen occupations as they navigate their way through a dynamic labour market</p>
P11	<p>SPSS & NVivo Software in the field of quantitative and qualitative data are gaining more importance nowadays. Students in the discipline of social work are taught the practical use of the software via free versions. Students compute their research data via the SPSS & NVivo</p>
P12	<p>Ethics Students are taught to recognize different value systems including their own, understanding moral values, decisions and social responsibility. Students learn the need for informed consent, ethical procedures and factors governing Social Work Practices</p>
P13	<p>Environment and Sustainability Social Work Students understand the issues with regard to the environment and sustainability. Grow Green, Go Green is one such initiative undertaken by the student in creating an environmental friendly environment.</p>

Programme Specific Outcomes at Undergraduate Level

PSO1	Introduction to the various aspects of Social Work Profession.
PSO2	Understand the methods of Social Work Practice with Individuals.
PSO3	Carry out Social Work Practices with various Groups.
PSO4	Recognize the aspects of Sociology for Social Work Practice
PSO5	Comprehend various Psychological procedures for Social Work Practice
PSO6	Reach the community via Social Work Practices with various Communities
PSO7	Understand the factors, principles, objectives and labour laws governing Human Resource Management
PSO8	Identify various theories, practices and methods of Medical & Psychiatric Social Work.
PSO9	Recognize the importance of Social Welfare Administration
PSO10	Understand the various Labour Legislation and Labour Welfare nomenclatures governing Human Resource Management in a more detailed and specific manner.
PSO11	Students also take up specific training on Transactional Analysis and its implications.
PSO12	Social Work Research & Statistics are taught to students. They incorporate various need based studies. Research Projects are also carried out by students and they collect data using different designs in Social Work Research.
PSO13	Students are taught the importance and practice of Rural & Urban Community Development, Rural and Urban Governance
PSO14	Students learn the important aspects of Industrial Relations, Human Resource Management in various Service Sectors , industries and manufacturing units.
PSO15	Youth Development, Strategies for youth Development and its priority are taught via the implication of various methods, current trends and governing policies.
PSO16	Students are given practical exposure on the application of various software packages which include SPSS & NVivo

Name of Department: MSW

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	INTRODUCTION TO SOCIAL WORK PROFESSION	MSW111T	<ul style="list-style-type: none"> - to gain knowledge about the profession of Social Work - Understand the different fields of Social Work - Get exposed to the historical growth and development of Social Work 	<p><i>The students will...</i></p> <ul style="list-style-type: none"> - Gain knowledge about the profession of Social Work - Understand the different fields of Social Work - Get exposed to the historical growth and development of Social Work 	Global developmental needs
2	SOCIAL WORK PRACTICE WITH INDIVIDUALS	MSW112T	<ul style="list-style-type: none"> - To gain knowledge about the primary method of social work practice with individuals - Understand the techniques and approaches of social work practice with individuals - Acquire the skill of working with individuals 	<ul style="list-style-type: none"> - Gain knowledge about the primary method of social work practice with individuals - Understand the techniques and approaches of social work practice with individuals - Acquire the skill of working with individuals 	Global developmental needs
3	SOCIAL WORK PRACTICE WITH GROUPS	MSW113T	<ul style="list-style-type: none"> - To gain knowledge about the primary method of social work practice with groups - Understand the techniques and approaches of social work practice with groups - Acquire the skill of 	<ul style="list-style-type: none"> - Gain knowledge about the primary method of social work practice with groups - Understand the techniques and approaches of social work practice with groups - Acquire the skill of working with groups 	Global developmental needs

			working with groups		
4	SOCIOLOGY FOR SOCIAL WORK PRACTICE	: MSW115T	<ul style="list-style-type: none"> - Gain basic knowledge on Sociology - Understand the behavior of human beings - To understand the role of social workers in dealing with social problems. 	<ul style="list-style-type: none"> - Gain basic knowledge on Sociology - Understand the behavior of human beings - To understand the role of social workers in dealing with social problems. 	Global developmental needs
5	THEATRE SKILLS - (SKILL PAPER -SK 1)	MSW116T	<ul style="list-style-type: none"> • To gain better understanding theatre fundamentals • Have Personality development through theatre • Have the ability to Create Alternative thoughts and Alternative Aesthetics 	<ul style="list-style-type: none"> • Gain better understanding theatre fundamentals • Have Personality development through theatre • Have the ability to Create Alternative thoughts and Alternative Aesthetics 	National Developmental Needs
6	CONCURRENT FIELD WORK – I (Main Core)	MSW117F	<ul style="list-style-type: none"> - To get exposure with regard to the various settings of social work - To undergo a group living experience and to understand the living conditions of people - To acquire the skill in street theatre and folk lore 	<ul style="list-style-type: none"> - Got exposure with regard to the various settings of social work - Underwent a group living experience and to understand the living conditions of people - Acquired the skill in street theatre and folk lore 	Global developmental needs

7	SOCIAL WORK PRACTICE WITH COMMUNITIES (Main Core-4)	<u>MSW211T</u>	<ul style="list-style-type: none"> - To gain knowledge about the primary method of social work practice with communities - To understand the techniques and approaches of social work practice with communities - To acquire the skill of working with communities 	<ul style="list-style-type: none"> - Gained knowledge about the primary method of social work practice with communities - Understood the techniques and approaches of social work practice with communities - Acquired the skill of working with communities 	Global Developmental Needs
8	HUMAN RESOURCE MANAGEMENT (Main Core-5)	<u>MSW212T</u>	<ul style="list-style-type: none"> - To gain knowledge about the management of human resources - To understand the programmes and activities of management of human resources - To acquire the skills of working with organized and un organized human resources 	<ul style="list-style-type: none"> - Gain knowledge about the management of human resources - Understand the programmes and activities of management of human resources - Acquire the skills of working with organized and un organized human resources 	Global Developmental Needs

9	MEDICAL AND PSYCHIATRIC SOCIAL WORK (Main Core-6)	MSW213T	<ul style="list-style-type: none"> - To identify the issues related to health, diseases and health care services by the government and private - Understand the concepts 'mental health' and 'mental illness' and understand the signs and symptoms, etiology, diagnosis and treatment of mental health problems - Gain skills to cater to services for the mentally ill 	<ul style="list-style-type: none"> - Identify the issues related to health, diseases and health care services by the government and private - Understand the concepts 'mental health' and 'mental illness' and understand the signs and symptoms, etiology, diagnosis and treatment of mental health problems - Gain skills to cater to services for the mentally ill 	Global Developmental Needs
10	CONCURRENT FIELD WORK – II	MSW217F	<ul style="list-style-type: none"> - To practice the primary methods of Social Work in different settings - Understand the applicability of the methods and techniques of Social Work in the fields of social work - Enhance their skills of Social Work practice 	<ul style="list-style-type: none"> - Practice the primary methods of Social Work in different settings - Understand the applicability of the methods and techniques of Social Work in the fields of social work - Enhance their skills of Social Work practice 	Global Developmental Needs

11	BLOCK FIELD WORK (Required)	MSW218F	<ul style="list-style-type: none"> - To gain experience in a social work field by being in an open or closed setting - Understand the techniques and approaches adopted by the organization - Apply the knowledge gained, in the field of social work 	<ul style="list-style-type: none"> - Gain experience in a social work field by being in an open or closed setting - Understand the techniques and approaches adopted by the organization - Apply the knowledge gained, in the field of social work 	Global Developmental Needs
12	TRANSACTIONAL ANALYSIS (Certificate Course-1)		<ul style="list-style-type: none"> - To Gain knowledge about the concepts related to transaction analysis - Understand the self and others - Acquire the skills of communication and problem solving 	<ul style="list-style-type: none"> - Gain knowledge about the concepts related to transaction analysis - Understand the self and others - Acquire the skills of communication and problem solving 	Global Developmental Needs
13	RURAL AND URBAN GOVERNANCE	MSW313A	<ul style="list-style-type: none"> - To gain knowledge about rural and urban governance - Understand the functions and activities of local self-governments - Acquire the skills of working with and through local self-governments 	<ul style="list-style-type: none"> - Gain knowledge about rural and urban governance - Understand the functions and activities of local self-governments - Acquire the skills of working with and through local self-governments 	Global Developmental Needs

14	HUMAN RESOURCE MANAGEMENT IN SERVICE SECTOR	MSW313B	<ul style="list-style-type: none"> - To gain knowledge about the human resource Management in service sector - Understand the functions and activities of human resource practices - Acquire the skills of working in service sector 	<ul style="list-style-type: none"> - Gain knowledge about the human resource Management in service sector - Understand the functions and activities of human resource practices - Acquire the skills of working in service sector 	Global Developmental Needs
15	STRATEGIES FOR YOUTH DEVELOPMENT	MSW313C	<ul style="list-style-type: none"> - To understand the different strategies by which youth development could be achieved • Gain knowledge of government and private interventions in the development of youth • Acquire skills in designing capacity building programmes. 	<ul style="list-style-type: none"> • Understand the different strategies by which youth development could be achieved • Gain knowledge of government and private interventions in the development of youth • Acquire skills in designing capacity building programmes. 	Global Developmental Needs
16	DATA PROCESSING & ANALYSIS SKILL (SPSS & NVivo) Skill Paper–SK 3	MSW316S	<ul style="list-style-type: none"> - To gain knowledge on SPSS and NVivo - Gain Skills and Methods to use the statistical software. - Gain experience in using SPSS & NVivo in data processing and analysis 	<ul style="list-style-type: none"> - Gain knowledge on SPSS and NVivo - Gain Skills and Methods to use the statistical software. - Gain experience in using SPSS & NVivo in data processing and analysis. 	Global Developmental Needs

17	RESEARCH PROJECT –I	MSW318J	<ul style="list-style-type: none"> - To gain knowledge and skills developing a proposal for undertaking a research. - Acquire knowledge on problem formulation and review of literature. - Gain knowledge on designing the methodology and prepare tools for data collection. 	<ul style="list-style-type: none"> - Gain knowledge and skills developing a proposal for undertaking a research. - Acquire knowledge on problem formulation and review of literature. - Gain knowledge on designing the methodology and prepare tools for data collection. 	Global Developmental Needs
18	QUALITATIVE RESEARCH IN SOCIAL WORK (Main Elective-1)	MSW314A	<ul style="list-style-type: none"> - To understand the concept and scope of qualitative research - Gain knowledge on the process and approaches of qualitative research - Acquire skills for data collection and documentation - Gain skills in data analysis and management 	<ul style="list-style-type: none"> - Understand the concept and scope of qualitative research - Gain knowledge on the process and approaches of qualitative research - Acquire skills for data collection and documentation - Gain skills in data analysis and management 	Global Developmental Needs
19	HOSPITAL ADMINISTRATION (Main Elective-1)	MSW314B	<ul style="list-style-type: none"> - To gain basic knowledge on Hospital Administration - Understand the functions of Hospital - Acquire the skill for administering Hospitals. 	<ul style="list-style-type: none"> - Gain basic knowledge on Hospital Administration - Understand the functions of Hospital - Acquire the skill for administering Hospitals. 	National Developmental Needs

20	THERAPEUTIC INTERVENTIONS IN SOCIAL WORK (Main Elective-1)	MSW314C	<ul style="list-style-type: none"> • To understand the nature, goals and prerequisites of psychopathology • Acquire knowledge about the different schools and techniques in psychotherapy. • Gain knowledge about the application of therapies as an intervention in Social Work 	<ul style="list-style-type: none"> • Understand the nature, goals and prerequisites of psychopathology • Acquire knowledge about the different schools and techniques in psychotherapy. • Gain knowledge about the application of therapies as an intervention in Social Work 	Global developmental needs
21	CORPORATE SOCIAL RESPONSIBILITY (Main Elective-2)	MSW315A	<ul style="list-style-type: none"> - To gain knowledge about Corporate Social Responsibility - Understand the functions and activities of Social Audit - Acquire the skills of promoting and working in CSR programmes 	<ul style="list-style-type: none"> - Gain knowledge about Corporate Social Responsibility - Understand the functions and activities of Social Audit - Acquire the skills of promoting and working in CSR programmes 	Global developmental needs
22	HOTEL FRONT OFFICE MANAGEMENT	MSW315B	<ul style="list-style-type: none"> - To enhance the employability skill and knowledge of students on hotel management. - To facilitate students to understand the functions of front office - To enable student with right skill for front office management. 	<ul style="list-style-type: none"> - Enhanced employability skill and knowledge of students on hotel management. - Facilitated students to understand the functions of front office - Enabled student with right skill for front office management. 	Global Developmental Needs

23	DISASTER MANAGEMENT	MSW315C	<ul style="list-style-type: none"> • To understand the dynamic factors of disasters and their impact at an individual and societal level. • Deal with disaster preparedness, crisis management, risk reduction and rehabilitation and understand how they are connected. • Identify the role of different agencies in Disaster Management. 	<ul style="list-style-type: none"> • Understand the dynamic factors of disasters and their impact at an individual and societal level. • Deal with disaster preparedness, crisis management, risk reduction and rehabilitation and understand how they are connected. • Identify the role of different agencies in Disaster Management. 	Global Developmental Needs
24	CONCURRENT FIELD WORK – III	MSW317F	<ul style="list-style-type: none"> - To gain experience by applying the theoretical knowledge in the field - Understand the functions and activities of field placement organization - Acquire of the skills of applying the class learning into practice 	<ul style="list-style-type: none"> - Gain experience by applying the theoretical knowledge in the field - Understand the functions and activities of field placement organization - Acquire of the skills of applying the class learning into practice 	Global Developmental Needs

25	PSYCHOMETRIC & TESTING TOOLS		<ul style="list-style-type: none"> - To gain knowledge about psychological assessment and purposes - Acquire skills about intelligence, aptitude and interest assessments - Explore various types of assessment in personality, emotions, health and will learn the administration of such tests - Gain assessment skills in the areas of family and career 	<ul style="list-style-type: none"> - Gain knowledge about psychological assessment and purposes - Acquire skills about intelligence, aptitude and interest assessments - Explore various types of assessment in personality, emotions, health and will learn the administration of such tests - Gain assessment skills in the areas of family and career 	Global Developmental Needs
26	HUMAN RIGHTS AND SOCIAL LEGISLATION	<u>MSW411T</u>	<ul style="list-style-type: none"> - To gain knowledge about human rights and social legislations - Understand the different social legislations - Acquire the skills of applying the human rights and social legislation 	<ul style="list-style-type: none"> - Gain knowledge about human rights and social legislations - Understand the different social legislations - Acquire the skills of applying the human rights and social legislation 	Global Developmental Needs
27	DEVELOPMENT STRATEGIES	<u>MSW412A</u>	<ul style="list-style-type: none"> - To gain knowledge about development strategies - Understand the functions and activities of different developmental strategies - Acquire the skills of using the developmental strategies in different sectors 	<ul style="list-style-type: none"> - Gain knowledge about development strategies - Understand the functions and activities of different developmental strategies - Acquire the skills of using the developmental strategies in different sectors 	Global Developmental Needs

28	ORGANISATIONAL BEHAVIOUR	MSW412B	<ul style="list-style-type: none"> - To gain knowledge about organizational behaviour - Understand the functions and activities of organizational behavior - Acquire the skills of working with organized sectors and human resources 	<ul style="list-style-type: none"> - Gain knowledge about organizational behaviour - Understand the functions and activities of organizational behavior - Acquire the skills of working with organized sectors and human resources 	Global Developmental Needs
29	NGO MANAGEMENT	MSW412C	<ul style="list-style-type: none"> - To gain knowledge about establishing and managing a nongovernmental organization - Understand the functions and activities of a nongovernmental organization - Acquire the skill of working with nongovernmental organization 	<ul style="list-style-type: none"> - Gain knowledge about establishing and managing a nongovernmental organization - Understand the functions and activities of a nongovernmental organization - Acquire the skill of working with nongovernmental organization 	National Developmental Needs
30	LIVELIHOOD AND SOCIAL AUDIT	MSW413A	<ul style="list-style-type: none"> • To understand the concept, need, importance and principles of rural livelihood and social audit. • Gain knowledge on rural livelihood and the various methods involved in social auditing • Acquire skills to practice social accounts and audit. 	<ul style="list-style-type: none"> • Understand the concept, need, importance and principles of rural livelihood and social audit. • Gain knowledge on rural livelihood and the various methods involved in social auditing • Acquire skills to practice social accounts and audit. 	National Developmental Needs

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31	HUMAN RESOURCE DEVELOPMENT	MSW413B	<ul style="list-style-type: none"> - To gain knowledge about human resource development - Understand the approaches and activities of human resource development - Acquire the skills of developing human resources in different sectors 	<ul style="list-style-type: none"> - Gain knowledge about human resource development - Understand the approaches and activities of human resource development - Acquire the skills of developing human resources in different sectors 	National Developmental Needs
32	COUNSELING & CAREER GUIDANCE	MSW413C	<ul style="list-style-type: none"> - To gain knowledge about counseling and career guidance - Understand the methods and steps of counseling and guidance - Acquire the skills of extending counseling services to the needy 	<ul style="list-style-type: none"> - Gain knowledge about counseling and career guidance - Understand the methods and steps of counseling and guidance - Acquire the skills of extending counseling services to the needy 	National Developmental Needs

33	EMPLOYABILITY SKILLS (Skill Paper-SK 4)	MSW416S	<ul style="list-style-type: none"> - To gain the knowledge Dimension of Employability Skills and Career Planning Skill - Resume Writing & Interview Skills - Planning, Organizing Skill and Team Work Skill 	<ul style="list-style-type: none"> - Knowledge Dimension of Employability Skills and Career Planning Skill - Resume Writing & Interview Skills - Planning, Organizing Skill and Team Work Skill - 	Regional Developmental Needs
34	RESEARCH PROJECT –II	MSW418J	<ul style="list-style-type: none"> - To gain knowledge in designing and implementing a research methodology. - Gain skills in applying research software to process and analyze the data. - Acquire skills to interpret data and derive results and discussions - Understand the process of preparing a research project. - Acquire the skills of undertaking a research project 	<ul style="list-style-type: none"> - Gain knowledge in designing and implementing a research methodology. - Gain skills in applying research software to process and analyze the data. - Acquire skills to interpret data and derive results and discussions - Understand the process of preparing a research project. - Acquire the skills of undertaking a research project 	Local Developmental Needs

35	PROJECT MONITORING AND EVALUATION (Main Elective-3)	MSW414A	<ul style="list-style-type: none"> - To gain the knowledge about monitoring and evaluation systems and their use in project cycle management - Learn methods and skills to carry out monitoring using logframe matrix - Knowledge to plan and carry out evaluation studies and measure the results of the project 	<ul style="list-style-type: none"> - Knowledge about monitoring and evaluation systems and their use in project cycle management - Learn methods and skills to carry out monitoring using logframe matrix - Knowledge to plan and carry out evaluation studies and measure the results of the project 	Global Developmental Needs
36	SKILL MATRIX AND COMPETENCY MAPPING (Main Elective -3)	MSW414B	<ul style="list-style-type: none"> - To gain the knowledge on skill matrix and competency mapping - To gain the ability to apply it in the context of the organizational development 	<ul style="list-style-type: none"> - Gained the knowledge on skill matrix and competency mapping - Gained the ability to apply it in the context of the organizational development 	Global Developmental Needs
37	SOCIAL WORK WITH FAMILIES AND CHILDREN (Main Elective-3)	MSW414C	<ul style="list-style-type: none"> - To gain knowledge on functions, interaction and issues concerning adults and children in Indian families - Gain knowledge and skills in family intervention - Understand the needs of the children and programmes for children 	<ul style="list-style-type: none"> - Gain knowledge on functions, interaction and issues concerning adults and children in Indian families - Gain knowledge and skills in family intervention - Understand the needs of the children and programmes for children 	Local Developmental Needs

38	ENVIRONMENTAL SOCIAL WORK (Main Elective 4)	MSW415A	<ul style="list-style-type: none"> • To help the students to learn basic facts about Ecology, Environment and Energy resources. • To increase the knowledge on various issues on Environment and the roles of Movements for the Environment Protection. • To provide an understanding roles and responsibilities of Social Workers to protect the nature. 	<ul style="list-style-type: none"> • Helped the students to learn basic facts about Ecology, Environment and Energy resources. • To increase the knowledge on various issues on Environment and the roles of Movements for the Environment Protection. • To provide an understanding roles and responsibilities of Social Workers to protect the nature. - 	Global Developmental Needs
39	PERFORMANCE MANAGEMENT (Main Elective-4)	MSW415B	<ul style="list-style-type: none"> - To help the students to learn basic facts about performance management and performance plan. - To increase the knowledge on the importance of feedback in improving performance. - To provide an understanding of the role of employee's performance appraisals. 	<ul style="list-style-type: none"> - Helped the students to learn basic facts about performance management and performance plan. - To increase the knowledge on the importance of feedback in improving performance. - To provide an understanding of the role of employee's performance appraisals. 	Global Developmental Needs

40	SOCIAL ENTREPRENEURSHIP (Main Elective-4)	MSW415C	<ul style="list-style-type: none"> - To gain knowledge about Social Entrepreneurship - To understand and acquire the skills for entrepreneurship - Acquire the skills of applying the skills to run a successful entrepreneurship 	<ul style="list-style-type: none"> - Gain knowledge about Social Entrepreneurship - To understand and acquire the skills for entrepreneurship - Acquire the skills of applying the skills to run a successful entrepreneurship 	Global Developmental Needs
41	CONCURRENT FIELD WORK – IV	MSW417F	<ul style="list-style-type: none"> - Gain experience by applying the theoretical knowledge in the field - Understand the functions and activities of field placement organization - Acquire of the skills of applying the class learning into practice 	<ul style="list-style-type: none"> - Gain experience by applying the theoretical knowledge in the field - Understand the functions and activities of field placement organization - Acquire of the skills of applying the class learning into practice - 	National Developmental Needs
42	BLOCK FIELD WORK – II	MSW419F	<ul style="list-style-type: none"> - To gain experience in a social work field by being in an open or closed setting - Understand the techniques and approaches adopted by the organization - Apply the knowledge gained, in the field of social work 	<ul style="list-style-type: none"> - Gain experience in a social work field by being in an open or closed setting - Understand the techniques and approaches adopted by the organization - Apply the knowledge gained, in the field of social work - 	National Developmental Needs

Name of the Programme: M.Sc.Computer Science

Programme Outcomes at Postgraduate Level

Postgraduates will be able to:

- **PO1:** Demonstrate intense knowledge in their discipline
- **PO2:** Exhibit specialised skills to plan, analyse and draw conclusions related to their respective field of study in theory and in practice
- **PO3:** Develop expertise in their field of study through projects and research activities
- **PO4:** Prepare themselves to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialisation
- **PO5:** Develop social and ethical responsibility in the transfer and management of knowledge

Programme Specific Outcomes

On successful completion of this programme, students should be able to:

- **PSO 1:** Acquire fundamental knowledge in problem-solving and in-depth knowledge in computer science to implement solutions using appropriate algorithms of varying complexity.
- **PSO 2:** Apply the knowledge gained during the program to identify, formulate and solve complex real-life problems faced in industries and R&D with an orientation to lifelong learning.
- **PSO 3:** Ability to develop technical skills needed to be an influential academician or an entrepreneur, or in a software concern.
- **PSO 4:** Apply the knowledge of ethical and management principles required to work in a team and lead a team.

- **PSO 5:** Develop software to cater to the needs of the organization, nation and region

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	ADVANCED JAVA PROGRAMMING		<ul style="list-style-type: none"> • To introduce programming with Applet and AWT. • An overview of database access and details for managing information using the JDBC API. • Examine the use of networking and collections. • Learn how to program Servlet and JSP. • To understand the web programming concepts in the perspective of Client and Server. 	<p>Upon completion of the course, students will be able to:</p> <ul style="list-style-type: none"> • Develop Applet Programming using various techniques • Develop applications using Abstract Window Toolkit and Events • Update and retrieve the data from the databases using JDBC-ODBC • Develop server side programs in the form of Servlets • Build up Java Applications using collections and JSP Tags. 	global developmental needs

2	PYTHON PROGRAMMING		<ul style="list-style-type: none"> • To know the basics of algorithmic problem solving • To read and write simple Python programs. • To develop Python programs with conditionals and loops. • To define Python functions and call them. • To use Python data structures – lists, tuples, dictionaries. • To do input/output with files in Python. 	<p>Upon completion of the course, students will be able to:</p> <ul style="list-style-type: none"> • Develop algorithmic solutions to simple computational problems • Read, write, execute by hand simple Python programs. • Structure simple Python programs for solving problems. • Decompose a Python program into functions. • Represent compound data using Python lists, tuples and dictionaries. • Read and write data from/to files in Python Programs. 	global developmental needs
3	OPEN SOURCE TECHNOLOGIES		<ul style="list-style-type: none"> • To learn designing webpage using HTML & CSS • To understand the concept of Database • To learn Server side scripting language • To understand the need of AJAX • To introduce applications 	<p>Upon completion of the course, students will be able to:</p> <ul style="list-style-type: none"> • Design webpages using HTML & CSS • Know the purpose and usage of a Database • Develop applications using Server side scripting language • Incorporate AJAX in 	global developmental needs

			using PHP with MYSQL	<p>Web applications</p> <ul style="list-style-type: none"> • Develop applications using PHP with MYSQL 	
4	WEB SERVICES (ELECTIVE – I:)		<ul style="list-style-type: none"> • To examine fundamental XML technology • To understand the use of JSON • To gain an understanding about the role of web services in commercial applications • To learn the emerging standard protocols like SOAP, WSDL and UDDI. • To introduce the role of web services in CMS 	<p>On completion of this course students are able to:</p> <ul style="list-style-type: none"> • Understand the use of web services in B2C and B2B applications. • Understand the design principles and application of SOAP and REST based web services. • Design collaborating web services according to a specification. • Implement an application that uses multiple web services in a realistic business scenario. <p>Use industry standard open source tools such as Apache, Tomcat and Eclipse to build, test, deploy and execute web services and web applications that consume them.</p>	global developmental needs

5	b. DATABASE ADMINISTRATION (ELECTIVE-I :)		<ul style="list-style-type: none"> • Learn the basics of Database and its components • Impart clarity on the security and performance optimization • Learn the support components available for better database administration • To introduce the handling of a database <p>Automate many db techniques and risk free database maintenance</p>	<p>On completion of this course students are able to:</p> <ul style="list-style-type: none"> • Know the concept of a Database and its components • Feel confident when handling the database as part of an application development • Analyse the DBMS requirements for specific scenarios • Install, configure, optimize and tune the performance of a DBMS; • Design and implement security, back-up and recovery measures 	global developmental needs
6	C. DECISION SUPPORT SYSTEM (ELECTIVE – I:)		<ul style="list-style-type: none"> • Get an overview of decision support systems. • Get Familiarize on group decision support systems • Learn about knowledge management • Study about Intelligent DSS • Get familiarize on building decision support systems 	<p>On completion of this course students are able to:</p> <ul style="list-style-type: none"> • Recognize the relationship between business information needs and decision making • Appraise the general nature and range of decision support systems 	global developmental needs

				<ul style="list-style-type: none"> • Appraise issues related to the development of DSS • Select appropriate modelling techniques • Analyse, design and implement a DSS 	
7	BUSINESS COMMUNICATION		<ul style="list-style-type: none"> • To understand the purpose and meaning of communication. • To gain knowledge on the different modes of communication. • To acquire the ability to communicate effectively and professionally. • To Use ICT technology for Communication. • To acquaint the etiquettes in Communication. 	<p>On completion of this course students are able to:</p> <ul style="list-style-type: none"> • Recognize the need of communication. • Get knowledge on the different types of communication. • Obtain the ability to communicate effectively and professionally. • Able to use the ICT technology for Communication • Knows the etiquettes in Communication 	global developmental needs
8	PRINCIPLES OF COMPILER DESIGN		<ul style="list-style-type: none"> • To know the basic concepts of compilers. • To explore the phases of a compiler • To know how the source program is executed in the compiler. 	<p>On successful completion of the course students will be able to:</p> <ul style="list-style-type: none"> • Specify and analyse the lexical, syntactic and semantic structures of advanced language features • Separate the lexical, 	global developmental needs

			<ul style="list-style-type: none"> • To bring in the types of grammar • To create a new compiler 	<p>syntactic and semantic analysis into meaningful phases for a compiler to undertake language translation</p> <ul style="list-style-type: none"> • Write a scanner, parser, and semantic analyser without the aid of automatic generators • Turn fully processed source code for a novel language into machine code for a novel computer 	
9	ENTERPRISE JAVA PROGRAMMING		<ul style="list-style-type: none"> • To expose the knowledge of MVC and Java server faces • To provide the knowledge and skills required to develop web applications using the MVC framework provided by Apache Struts • To Develop Enterprise web application using EJB. • To understand and implement the object-relation mapping using Hibernate • To explore the knowledge 	<p>Upon successful completion of the course students will be able to:</p> <ul style="list-style-type: none"> • Work with JSP, JSF and Servlet using MVC approach. • Develop the web applications using the MVC framework provided by Apache Struts • Develop Enterprise web application using EJB. • Implement the Object-Relation Mapping technique using Hibernate 	global developmental needs

			of Aspect Oriented Programming using Spring and Spring MVC.	<ul style="list-style-type: none"> Gets knowledge of Aspect Oriented Programming using Spring and Spring MVC. 	
10	DESKTOP APPLICATION USING C#.NET		<ul style="list-style-type: none"> To know the differences between desktop and web application. To construct classes, methods, and accessor and instantiate objects. To create and manipulate GUI components in C#. To code solutions and compile C# projects within the .NET framework. To build own desktop application with Database 	<p>After the completion of the course the students will be able:</p> <ul style="list-style-type: none"> To know the differences between desktop application and web application. To construct classes, methods, and access modifier and instantiate objects. To create and manipulate GUI components in C# for windows application. To code solutions and compile C# projects within the .NET framework. To build the desktop application with Database. 	global developmental needs

11	CRYPTOGRAPHY AND NETWORK SECURITY		<ul style="list-style-type: none"> • To bring in Classical Encryption techniques • To introduce the fundamental principles of access control models and techniques, authentication and secure system design. • Build a strong understanding of different cryptographic protocols and techniques • Learn methods for authentication, access control, intrusion detection and prevention. • Identify and mitigate software security vulnerabilities in existing systems. 	<p>At the end of the course the students will be able to do following:</p> <ul style="list-style-type: none"> • Understand cryptography and network security concepts and application • Apply security principles to system design • Identify and investigate network security threat • Analyze and design network security protocols • Conduct research in network security 	global developmental needs
12	A. OBJECT ORIENTED ANALYSIS AND DESIGN (ELECTIVE-II:)		<ul style="list-style-type: none"> • To understand the fundamental concepts of UML diagrams. • To draw diagrams with project documentation. • To analyze the requirements given by stake holder • To design the project with 	<p>After the course, students should:</p> <ul style="list-style-type: none"> • be able to use an object-oriented method for analysis and design • be able to analyse information systems in real-world settings and to conduct methods such as interviews and 	global developmental needs

			<p>examples.</p> <ul style="list-style-type: none"> • To understand the Software Development Process 	<p>observations</p> <ul style="list-style-type: none"> • have a general understanding of a variety of approaches and perspectives of systems development, and to evaluate other IS development methods and techniques • know techniques aimed to achieve the objective and expected results of a systems development process • know different types of prototyping • know how to use UML for notation 	
13	<p>B. DATA COMMUNICATION AND NETWORKS (ELECTIVE- II)</p>		<ul style="list-style-type: none"> • To understand the wireless sensor nodes, networks and tools. • To build concepts regarding the fundamental principles of distributed systems. • To introduce the sensor network platforms and tools • To brief about Adhoc Networks 	<p>After completing the course students will be able to:</p> <ul style="list-style-type: none"> • Understand basic wireless network technology and its architecture • Understand and explain Data Communications System and its components. • Identify the different 	<p>global developmental needs</p>

			To learn the Routing Protocols	<p>types of network topologies and protocols.</p> <ul style="list-style-type: none"> • Understand and building the skills of subnetting and routing mechanisms. • Familiar to the sensor network platforms and tools. 	
14	C. SOFTWARE PROJECT MANAGEMENT (ELECTIVE-II)		<ul style="list-style-type: none"> • To provide sound knowledge in Project Management. • To understand the importance of requirement gathering • To explore different models in Software Development • To know the workflow of a Project • To identify various actors in the activity 	<p>Upon completion of the course students will be able to:</p> <ul style="list-style-type: none"> • Understand the activities during the project scheduling of any software application. • Learn the risk management activities and the resource allocation for the projects. • Apply the software estimation and recent quality standards for evaluation of the softwareProjects. • Acquire knowledge and skills needed for the construction of highly 	local developmental needs

				<p>reliable software project.</p> <ul style="list-style-type: none"> • Able to create reliable, replicable cost estimation that links to the requirements of project planning and managing. 	
15	Quantitative Aptitude		<ul style="list-style-type: none"> • To demonstrate various principles involved in solving mathematical problems based on numbers • To compute and compare ratio related problems • To calculate the distance for trains, boats and the concept of annuity and interest. • To count the number days, month, years and time based on calendar and clock problems. • To work with selecting and arranging the given object using Permutation and combination. 	<p>Upon completion of the course, the students will be able to:</p> <ul style="list-style-type: none"> • Understand the principles involved in solving mathematical problems based on numbers • Work out ratio related problems, Time and work, pipes and distance • Compute the distance for trains, boats and the concept of annuity and interest. • Count the number of days, month, years and time based on calendar and clock problems. • Work with selection and arrangement of the given object using Permutation 	local developmental needs

			<ul style="list-style-type: none"> To solve logical reasoning problems. 	<p>and combination.</p> <ul style="list-style-type: none"> Solve the logical reasoning problems. 	
16	INTERNET OF THINGS		<ul style="list-style-type: none"> To introduce the vision and IoT. To Understand IoT Market perspective. To explicate Data and Knowledge Management and use of Devices in IoT Technology. To Understand State of the Art – IoT Architecture. To know Real World IoT Design Constraints, Industrial Automation and Commercial Building Automation in IoT. 	<p>Upon Completion of the course, the students should be able to:</p> <ul style="list-style-type: none"> Understand the vision of IoT from a global context. Determine the Market perspective of IoT. Use of Devices, Gateways and Data Management in IoT. Building state of the art architecture in IoT. Application of IoT in Industrial and Commercial Building Automation and RealWorld 	global developmental needs

				Design Constraints.	
17	DISTRIBUTED OPERATING SYSTEMS		<ul style="list-style-type: none"> • To understand the fundamental concepts of operating systems • To understand the need for distributed systems. • To get acquainted with the design principles of distributed operating systems. • To explore the concept of synchronization • To handle the process in distributed environment 	<p>After the completion of the syllabus students will be able:</p> <ul style="list-style-type: none"> • To understand the fundamental concepts of operating systems. • To understand the need for distributed systems and distributed operating system. • To get acquainted with the design principles of distributed operating systems. • To explore the concept of synchronization of various process the system. • To handle the process in distributed environment. 	global developmental needs

18	WEB APPLICATION USING ASP.NET		<ul style="list-style-type: none"> • To understand the difference between desktop and dynamic web applications. • To understand the ASP.NET web application execution model. • To create and modify multi-page Web Form applications • To demonstrate features like flow control, data access and data binding • To validate forms with in an application. 	<p>After the completion of the course students will be able:</p> <ul style="list-style-type: none"> • To understand the concept of web applications working process. • To understand the ASP.NET web application execution model. • To create and modify multi-page Web Form applications. • To demonstrate features like flow control, data access and data binding. • To validate forms with in an application. 	global developmental needs
19	MOBILE APPLICATIONS		<ul style="list-style-type: none"> • To impart the basis of mobile application and development environment • To learn HTML5 • To use CSS & JavaScript in Mobile • To develop simple and professional application • To prepare for the job opportunity in mobile application development 	<p>After the completion of the syllabus the student will be able to:</p> <ul style="list-style-type: none"> • Know about the mobile application development environment • Develop interface and design using HTML5 • Use the techniques of CSS & JavaScript in Mobile Applications • Develop a simple as well 	global developmental needs

				<p>as a professional application</p> <p>Be ready for the job opportunity in mobile application development</p>	
20	CLOUD COMPUTING (ELECTIVE – III:)		<ul style="list-style-type: none"> • To introduce the broad perceptive of cloud architecture and model. • To understand the concept of Virtualization and design of cloud Services • To be familiar with the lead players in cloud. • To understand the features of cloud simulator • To apply different cloud programming model as per need. • To learn to design the trusted cloud Computing system 	<p>After learning the course the students should be able to</p> <ul style="list-style-type: none"> • Understand the computing paradigm and cloud computing • Understand the architecture of cloud computing • Understand and use the service models and deployments • Work on any real cloud service • Understand the service management and security of cloud 	global developmental needs
21	SEMANTIC WEB (ELECTIVE - III)		<ul style="list-style-type: none"> • To understand the features, rationale, and advantages of Semantic Web technology. • To learn the concepts of graph-based RDF model, 	<p>Upon the completion of the syllabus the student will be able to:</p> <ul style="list-style-type: none"> • Know semantic web technologies and the use of XML. • Describe the web resource RDF 	global developmental needs

			<p>XML syntax-based RDF model, and RDF Schema</p> <ul style="list-style-type: none"> • To impart knowledge on OWL. • To obtain the Reasoning logic of Monotonic and Nonmonotonic rules <p>To apply semantic web in the applications of Ontology</p>	<ul style="list-style-type: none"> • Understand web ontology language OWL and its approach. • Find out the relationships, logics and the rules of the languages • Develop semantic web with the help of Ontology Engineering 	
22	C. DATA SCIENCE (ELECTIVE – III:)		<ul style="list-style-type: none"> • To know the fundamental algorithmic ideas to process data. • To learn to apply hypotheses and data into actionable predictions. • To document and transfer the results and effectively communicate the findings using visualization techniques. • To handle data with R • To employ the Map reduce technique 	<p>At the conclusion of the course, students should be able to:</p> <ul style="list-style-type: none"> • Describe what Data Science is and the skill sets needed to be a data scientist. • Identify probability distributions commonly used as foundations for statistical modeling. • Use R to carry out basic statistical modeling and analysis. • Use APIs and other tools to scrap the Web and collect data. • Apply EDA and the Data Science process in a case study. 	global developmental needs

23	SOFT SKILLS		<p>Today's world is all about relationship, communication and presenting oneself, one's ideas and the company in the most positive and impactful way. This course intends to enable students to achieve excellence in both personal and professional life.</p>	<p>After completion of the course the students will be able to:</p> <ul style="list-style-type: none"> • Develop effective communication skills (spoken and written). • Develop effective presentation skills. • Become self-confident individuals by mastering interpersonal skills, team management skills, and leadership skills. • Develop broad career plans, evaluate the employment market, identify the organizations to get good placement, match the job requirements and skill sets. • Take part effectively in various selection procedures adopted by the recruiters 	<p>local developmental needs</p>
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24	DESIGN AND ANALYSIS OF ALGORITHMS		<ul style="list-style-type: none"> • To understand the basic knowledge of algorithm design and its implementation. • To learn the key techniques of Divide-and-Conquer and Greedy Method. • To recognize the concept of Dynamic Programming and its algorithms • To familiarize with Backtracking algorithms. • To understand Branch and Bound techniques for designing and analyzing algorithms. 	<p>Upon completion of the course, the students will be able to:</p> <ul style="list-style-type: none"> • Prove the correctness and analyze the running time of • Understand the basic knowledge of algorithm design and its implementation. • Learn the key techniques of Divide-and-Conquer and Greedy Method. • Recognize the concept of Dynamic Programming and its algorithms • Familiarize with Backtracking algorithms. • Understand Branch and Bound techniques for designing and analyzing algorithms. 	global developmental needs
25	SOFTWARE TESTING AND QUALITY ASSURANCE		<ul style="list-style-type: none"> • To introduce various approaches, techniques, technologies, and methodologies used in software testing and quality assurance. • To understand the role of testing in applications • To learn to design the test 	<p>After completing the course, students will be able to</p> <ul style="list-style-type: none"> • research the state-of-the-art, and apply their findings to software testing and quality assurance; • analyze different approaches to software 	global developmental needs

			<p>cases</p> <ul style="list-style-type: none"> • To know the different levels of testing • To study the state-of-the-art of software testing and quality assurance. 	<p>testing and quality assurance, and select optimal solutions for different situations and projects;</p> <ul style="list-style-type: none"> • conduct independent research in software testing and quality assurance and apply that knowledge in their future research and practice; <p>evaluate the work of peers constructively by following proven methods of peer-review, and by using the principles of research ethics.</p>	
26	A. BIG DATA ANALYTICS (ELECTIVE- IV)		<ul style="list-style-type: none"> • To understand the needs for Big Data and its environments. • To learn the basic requirements of Big Data Technologies. • To expose the knowledge of MapReduce programming framework (Hadoop). • To be familiar with with NoSQL DB's Cassandra and MongoDB • To understand Hive and Pig technologies for 	<ul style="list-style-type: none"> • Gain knowledge of various Big data analytics and its Technologies • Study about various NoSQL databases and management techniques • Work with NoSQL databases such as MongoDB and Cassandra • Design Big data queries using Hive and Pig. 	global developmental needs

			analyzing the Big Data.		
27	B. MACHINE LEARNING (ELECTIVE – IV)		<ul style="list-style-type: none"> • To introduce several fundamental concepts and methods for machine learning • To familiarize the basic learning algorithms and techniques and their applications • To learn to analyze and handle large data sets. • To emphasis the basic concepts of probability and statistics. • To know the types of learning methods 	<p>By the end of the course, students should be able to:</p> <ul style="list-style-type: none"> • Understand the learning methods for data analysis. • Recognize a wide variety of learning algorithms. • Knows how to apply a variety of learning algorithms to data. • Realize how to perform evaluation of learning algorithms and model selection. 	global developmental needs
28	C. SECURITY SYSTEMS (ELECTIVE – IV)		<ul style="list-style-type: none"> • To understand the concept of network security practices • To know about system security and web security • To impart knowledge on wireless network security <p>To explore the types of cyber</p>	<p>After completion of the syllabus the student will be able to:</p> <ul style="list-style-type: none"> • Identify and describe the common types of security threats are risks to the Computer Systems and the nature of common Information 	global developmental needs

			crimes	<p>hazards.</p> <ul style="list-style-type: none"> • Identify the potential threats to confidentiality, integrity and availability of Computer Systems. • Describe the working of standard security mechanisms and applied to the external and internal network. • Define cryptography, describe the elements of the encryption process and select best algorithm to encrypt data and protocols to achieve Computer Security. • Apply accepted security policies, procedures are necessary to secure Operating Systems and applications. 	
29	RESEARCH PAPER		<ul style="list-style-type: none"> • To enable the students to choose an area of specialization. • To help the students to focus on current research in computer science. • To understand the 		regional developmental needs

			research areas by collecting and reading research papers, analyzing Qualitative and quantitative aspects by a survey or implementation.		
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Name of the Programme: B.Sc Computer Science

Programme Outcomes at Undergraduate Level

- PO1: Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment
- PO2: Pursue higher learning programmes and become entrepreneurs
- PO3: Recognize moral and ethical values and be socially responsible citizens in the society
- PO4: Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.
- PO5: Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings
- PO6: Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.
- PO7: Demonstrate communication skills both oral and written in personal and academic pursuits

PROGRAMME SPECIFIC OUTCOMES

After completing this program the student will be able to

- PSO 1: Acquire knowledge of computing, mathematics, and basic sciences that may be relevant and appropriate to the domain
- PSO 2: Analyse a problem, identify and define the computing requirements, design, implement, and evaluate computer-based system, process, component, or program
- PSO 3: Apply Software Development Life Cycle principles to build Software Products and to become a IT professional.
- PSO 4: Become an Entrepreneur and Communicate effectively to accomplish a common goal
- PSO 5: Analyse the local and global impact of computing on individuals, organizations, and society

- PSO 6: Pursue higher studies in the Computer Science domain and to engage in continuous professional development.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	DIGITAL COMPUTER FUNDAMENTALS	CS117	<ul style="list-style-type: none"> • To explore the Number System, Number Conversion from one Base to another Base and Complements. • To understand the Logic Gates, Boolean Algebra and to design the Logical Circuits. • To simplify the Boolean Functions using K-Map Method and • To Learn Combinational, Sequential Circuits and Flip-Flops. 	<ul style="list-style-type: none"> • Perform conversions among different number systems, to be familiar with basic logic gates, understand Boolean algebra and simplify simple Boolean functions by using basic Boolean properties Design of combinational circuits such as MUX, DEMUX, Encoder and Decoder etc. • Understand the design of sequential Circuits such as Flip-Flops, Registers, and Counters. 	Global developmental needs
2	WEB DESIGN CONCEPTS	CS118	<ul style="list-style-type: none"> • To provide a comprehensive overview of the two largest Web technologies, Hyper Text Markup Language (HTML) and Cascading Style. • To learn through hands-on, 	<ul style="list-style-type: none"> • Able to learn how to combine basic HTML elements to create Web pages. • Understand the use of HTML tags and tag attributes to control a Web page's appearance. • Capable to learn how to 	Global developmental needs

			<p>practical instruction that will assist the students to tackle the real-world problems they face in building websites today—with a specific focus on HTML5 and CSS3.</p>	<p>add absolute URLs, relative URLs, and named anchors to Web pages.</p> <ul style="list-style-type: none"> • Gain a good understanding of using tables and frames as navigational aids on a Web site. • Able to control appearance webpages by applying style sheet. 	
3	Computer organization and Architecture	CS218	<ul style="list-style-type: none"> • To understand the basics of Computer Organization. • To know the relationship between computer instruction and the Machine code execution. • Identify the addressing mode of Instructions. • To recognize the need of interface between CPU and Input / Output devices. • To think critically, independently, and quantitatively about Computer Memory. 	<ul style="list-style-type: none"> • Study basic computer organization, design and micro-operations. • Understanding of CPU functioning and computer arithmetic. • To Explain how data is represented, manipulated and stored within computer system. • Able to understand how the Input/ Output devices communicate with the computer • Learning various methods and techniques of memory organization. 	Global developmental needs

4	Programing with C	CS219	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Write clear, elementary C programs. <input type="checkbox"/> Code with C arithmetic, increment, decrement, assignment, relational, equality and logical operators. <input type="checkbox"/> Code C control structures and use built-in data types. <input type="checkbox"/> Use standard library functions and user-defined function definitions in C. <input type="checkbox"/> Understand and manipulate arrays, pointers and structures in C. <input type="checkbox"/> Create and use text and data files. 	<ul style="list-style-type: none"> <input type="checkbox"/> To learn processing techniques required for c programming. <input type="checkbox"/> Able to write, compile and debug programs in C language. <input type="checkbox"/> Use different data types in C language. <input type="checkbox"/> Able to design C programs involving decision structures, loops and functions. <input type="checkbox"/> Will be able to differentiate the use of call by value and call by reference in C function. <input type="checkbox"/> Understand the dynamics of memory by the use of pointers. 	Global developmental needs

5	OBJECT ORIENTED PROGRAMMING WITH C++	CS319	<ul style="list-style-type: none"> <input type="checkbox"/> To understand object oriented programming and advanced C++ concepts. <input type="checkbox"/> To understand the various functions and arguments in object oriented programming. <input type="checkbox"/> To understand the classes and objects in C++. <input type="checkbox"/> To be familiar with inheritance and polymorphisms. <input type="checkbox"/> To be able to understand the concepts files and exception handling. 	<p>Upon completion of this course, the students should be able:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Understand object oriented programming and advanced C++ concepts. <input type="checkbox"/> Understand the various functions and arguments in object oriented programming. <input type="checkbox"/> Understand the classes and objects in C++. <input type="checkbox"/> Familiarize with inheritance and polymorphisms. <input type="checkbox"/> Understand the concepts files and exception handling. 	Global developmental needs

6	<p style="text-align: center;">DATA STRUCTURES AND ALGORITHMS</p>	CS320	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • Understand and implement 1D, 2D and Multi dimensional Array. • Understand the concept of Linked List and implementation of Linked List. • Understand Stack, Queue and its implementation using Arrays & Pointers. • Understand Tree and implement the traversal of Binary Tree and Binary Search Tree. • Understand sorting, searching algorithms and its implementation. • Understand the terminologies of Graph and implementing traversal of Graph using BFS and DFS. 	<ul style="list-style-type: none"> • Access the choice of data structure & algorithm method impact the performance of program. • Solve problems based upon different data structure & also write programs. 	<p>Global developmental needs</p>
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7	COMPUTER GRAPHICS	CS419	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • Understand the Role and importance of Algorithms like Line drawing Algorithm, Circle drawing Algorithm, Character generating Algorithm. • Understand 2D and 3D Transformations. • Understand various Clipping Algorithms like point clipping, line clipping and polygon clipping. • Understand the importance of the User Dialogue and various input functions. • Understand the Visible Surface Detection Methods. 	<ul style="list-style-type: none"> • To provide comprehensive introduction about computer graphics system, design and two dimensional transformations. • To make the students familiar with techniques of clipping, three dimensional graphics and three dimensional transformations. • Prepares the students for activities involving in design, development and testing of modeling, rendering, shading and animation. 	<p>Global developmental needs</p>
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8	RELATIONAL DATABASE MANAGEMENT SYSTEMS	CS420	<ul style="list-style-type: none"> □ To understand the basic concepts, organization of a databases and to impart basic knowledge on relational database using SQL and PL/SQL. 	<ul style="list-style-type: none"> □ Gain a good understanding of the architecture functioning of database management systems as well as associated tools and techniques, principles of data modeling using entity relationship and develop a good database design and normalization techniques to normalize a database. □ Understand the use of structured query language & PL/SQL its syntax, working and its scope, database. □ Acquire a good understanding of database systems concepts and to be in a position to use and design databases for different applications. 	Global developmental needs
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9	PROGRAMMING WITH JAVA	CS534	<ul style="list-style-type: none"> • To acquire the programming skills in core java applications. • To learn the art of GUI programming with Applet. • To write interface with Applet Controls. • To understand the Layouts of Applets. • To establish database connectivity. • To learn the Interaction between AWT control and Data Base. 	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • Understand the concept of OOP as well as the purpose and usage principles of inheritance, polymorphism, encapsulation and method overloading. • Identify classes, objects, members of a class and the relationships among them needed for a specific problem. • Create Java application programs using sound OOP practices (e.g., interfaces and APIs) and proper program structuring (e.g., by using access control identifies, and create user define package 	<p>Global developmental needs</p>
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				<p>for specific task,(reusability concepts) error exception handling)</p> <ul style="list-style-type: none"> • Develop programs using the Java standard class library. • Develop software in the Java programming language, (using applet, AWT controls, and JDBC) 	
10	UNIX and shell programing	CS535	<ul style="list-style-type: none"> • State the major components and describe the architecture of the UNIX operating system. • To learn and understand UNIX commands. • State how the shell functions at the user interface and command line interpreter. <p>Create structured shell programming with flow control</p>	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • Understand the basic Unix command • Understand the concepts piping and redirections. • Create a shell script using VI editor. <p>Able to develop using shell script to solve simple application problem</p>	Global developmental needs

			constructs		
11	OPERATING SYSTEMS	CS536	<ul style="list-style-type: none"> • To acquire the principles of Operating System, Process, its Description, Uniprocessor and Multiprocessor and its Scheduling Techniques. • To understand the concept of Mutual Exclusion, Deadlock and its detection, prevention & avoidance. • To learn the various Main Memory and Virtual Memory Management techniques. • To explore the Organization and Management of I/O, Disk and File Managements. 	<ul style="list-style-type: none"> • To make students able to learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system. • To provide students knowledge of memory management schemes and I/O handling algorithms. • At the end of the course, students will be able to implement various algorithms required for management, scheduling, allocation and communication 	Global developmental needs

				<p>used in operating system.</p> <ul style="list-style-type: none"> • Able to compare & constant various scheduling algorithm. 	
12	PROGRAMMING WITH PHP	CS537	<ul style="list-style-type: none"> <input type="checkbox"/> To learn about PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages <input type="checkbox"/> To Understand File handling concepts <input type="checkbox"/> Understanding PHP code to connect, access, and update a MySQL database <input type="checkbox"/> Understanding PHP using XML 	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Understand process of executing a PHP-based Script on a webserver. <input type="checkbox"/> Understand basic PHP syntax for variables use and standard language constructs, such as conditional and loops. <input type="checkbox"/> Storing data in arrays. <input type="checkbox"/> Using PHP built-in functions and creating custom functions <input type="checkbox"/> Understanding POST and GET in form submission. <input type="checkbox"/> How to receive and process form 	Global developmental needs

				<p>submission data.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Reading and writing cookies. <input type="checkbox"/> Create a database in phpMyAdmin Read and process data in a MySQL database. 	
13	SOFTWARE ENGINEERING (ELECTIVE – I:)	CS538	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • Understand the principles of large scale software systems, and the processes that are used to build them. <input type="checkbox"/> Acquire ability to the software-development process, Using PHP built-in functions and creating custom functions <input type="checkbox"/> Understanding POST and GET in form submission. <input type="checkbox"/> How to receive and process form submission data. <input type="checkbox"/> Reading and writing 	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • Plan and deliver an effective software engineering process, based on knowledge of widely used development lifecycle models. • Employ group working skills including general organization, planning and time management and inter-group negotiation. • Capture, document and analyze requirements. 	Global developmental needs

cookies.

- Create a database in phpMyAdmin Read and process data in a MySQL database.
- including requirements analysis, design, programming, testing and maintenance.
- Understand the Communication issues in large, complex software projects.
- Understand purpose and importance of the project management from the perspective of planning, tracking and completion of project.

- Translate a requirements specification into an implementable design, following a structured and organized process.
- Make effective use of UML, along with design strategies such as defining a software architecture, separation of concerns and design patterns.
- Formulate a testing strategy for a software system, employing techniques such as unit testing, test driven development and functional testing.
- Evaluate the quality of the requirements, analysis and design

				work done during the module.	
14	MICROPROCESSOR AND ITS APPLICATIONS	CS627	<ul style="list-style-type: none"> • To Understand the basic architecture of the Microprocessor • To learn the instruction sets of the processor • To write applications in assembly level language program • To study the input/output interfaces of the processor <p>To use interrupts in programming</p>	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • To familiarize with the assembly level language programming • Introduction to 8 bit Microprocessors and Introduction to 16 bit Microprocessors. • The student will be able to analyze, specify, design, write and test assembly language programs of moderate complexity. • Identify different types of memory and describe how each is used. 	Global developmental needs

				<ul style="list-style-type: none"> • Identify instruction, addressing modes and syntax. • Describe the key characteristics of a microprocessor programming model. • List microprocessor instruction groups and classify machine instructions accordingly. • Determine the use of Input/output interfaces in MPU. • Describe how interrupts are used in MPV with its types. 	
15	Web Development using XML	CS628	<ul style="list-style-type: none"> <input type="checkbox"/> To know how to represent data over the Web using XML. <input type="checkbox"/> Understanding of the XML Document Object Model. <input type="checkbox"/> Understanding xml DTD and its uses. <input type="checkbox"/> Understanding xml schema and its uses. 	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe how namespaces are used in XML. <input type="checkbox"/> Follow XML syntax rules. <input type="checkbox"/> Validate XML using DTD. 	Global developmental needs

			<ul style="list-style-type: none"> <input type="checkbox"/> Understanding JSON and its uses. 	<ul style="list-style-type: none"> <input type="checkbox"/> Construct XSLT style sheets for transforming HTML. <input type="checkbox"/> Construct XPath expressions for use within XSLT style sheet templates. <input type="checkbox"/> Be able to write the schema for the given XML documents in both DTD and XML Schema languages. <input type="checkbox"/> Be able to parse XML documents by using DOM. 	
16	Mobile Apps – Android Development	CS629	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> To develop a mobile application. <p>To understand the concept of SQLite</p>	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the platforms upon which the Android operating System will run. <input type="checkbox"/> Create a simple application that runs under the Android operating system. <input type="checkbox"/> Access and work with the Android file system. <input type="checkbox"/> Create an application that uses multimedia 	Global developmental needs

				<p>under the Android operating system.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Access and work with database under the Android operating system. 	
17	PROGRAMMING WITH R	CS630	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> To understand the fundamentals of R and able to use Basic Programming Concepts. <input type="checkbox"/> To understand the concepts of vectors and performing operations on ComplexData Types. <input type="checkbox"/> To understand the various R functions and strings, concepts of data frame and reshaping in R Programming. <input type="checkbox"/> To become more popular in charts and graphs and to understand the Mean, 	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Master the use of the R interactive environment <input type="checkbox"/> Expand R by installing R packages <input type="checkbox"/> Read Structured Data into R from various sources <input type="checkbox"/> Understand the different data types and data structures in R <input type="checkbox"/> Understand how to use dates in R <input type="checkbox"/> Use R for mathematical operations, user-defined R functions <input type="checkbox"/> Use control statements, loop 	Global developmental needs

			Median and Mode in R statistics.	<p>constructs in R, Manipulate strings in R</p> <ul style="list-style-type: none"> □ Understand the statistical methods. 	
18	COMPUTER NETWORKS (ELECTIVE - II)	CS631	<ul style="list-style-type: none"> • To learn the basic concepts of Computer Networks. 	<ul style="list-style-type: none"> • To explain how communication works in computer networks and to understand the basic terminology of computer networks • To explain the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack. To understand design issues in Network Security and to understand security threats, security services and mechanisms to counter it. 	Global developmental needs

19	JavaScript	CS01C	<ul style="list-style-type: none"> • Understanding of the basics of java script. • Understanding java script arrays and objects. • Understanding java script with HTML forms. • Understanding of the basics of JQuery. • Understanding of the basics of AJAX. 	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • The most fundamental concepts and syntax in programming JavaScript. • To know about data types, functions, loops, and control flow. <p>Build projects with JavaScript that includes HTML and CSS</p>	Global developmental needs
20	Python Programming	CS02C	<ul style="list-style-type: none"> • To learn program and programming paradigms brought in by Python with a focus on File Handling and Regular Expressions. 	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • To know the fundamental concepts of programming. • Understands the introduction of computing using Python • Understand the built-in objects of Python. • Create programs that perform various tasks, including text and file 	Global developmental needs

				manipulation, internet scripting, data structures, testing, and practical problem solving with examples.	
21	CONTENT MANAGEMENT SYSTEM	CS03C	<ul style="list-style-type: none"> • To understand the page structure of WordPress. • To working with templates in Joomla. • To creating static web pages in Drupal. 	<p>Upon completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • To understand the page structure of WordPress. • To working with templates in Joomla. • To creating static web pages in Drupal. 	Global developmental needs

FORMAT – I

M.Phil. Chemistry–Syllabus

The following details should be given before syllabus of each programme (M.Phil.)

Vision To educate and empower young students in the field of Chemistry and its allied subjects in order to create intellectuals with integrity, responsibility and vision towards the furtherance of knowledge and wisdom

Mission

Name of the Programme Master of Philosophy

M.Phil. M.Phil. Chemistry

Programme Outcomes *Master of philosophy will be able to:*

PO1 Demonstrate advanced research skills, including the ability to design and conduct experiments, critically analyse literature, and interpret results.

PO2 Attain a comprehensive understanding of advanced theoretical and practical aspects of chemistry within the chosen research area.

PO3 Develop strong critical thinking and analytical skills for evaluating scientific literature and experimental data.

PO4 Communicate research findings effectively through clear and coherent written reports as well as oral presentations.

PO5 Make a meaningful contribution to scientific knowledge through the completions and dissemination of original research in peer – reviewed journals and conferences.

Programme Specific Outcomes

Master of philosophy in Chemistry are supposed to

PSO1 Acquire specialized knowledge and expertise in a focused area of chemistry through advanced coursework and research activities.

PSO2 Demonstrate mastery in experimental techniques, data analysis, and critical evaluation of scientific literature within the chosen research domain.

PSO3 Contribute the advancement of scientific knowledge by conducting independent and original research that addresses significant questions in chemistry.

PSO4 Exhibit effective communication skills by presenting research findings in clear, concise written reports and articulate oral presentations.

PSO5 Cultivate a deep sense of ethical conduct in research, emphasizing integrity and responsibility in all aspects of scientific inquiry.

Sacred Heart College(Autonomous), Tirupattur

Name of the Programme: M.Sc. Chemistry

Programme Outcomes at Postgraduate Level

Programme will be able to:

1. Demonstrate intense knowledge in their discipline
2. Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice
3. Develop expertise in their field of study through projects and research activities
4. Prepare themselves to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization
5. Develop social and ethical responsibility in the transfer and management of knowledge

Programme Specific Outcomes

1. Understanding comprehensively the various principles and theories in the domain of Chemistry and learn to apply it in the field of production, formulation and research.
2. Summarize, compare and contrast the structures, properties, types and applications of chemical entities by understanding the stereochemistry, structures, reactivity etc
3. Learn to solve equations and to correlate the various concepts and facts about chemical systems and their behavior and arrive at proper conclusions and inferences.
4. To evaluate, criticize and defend the theories, concepts and methods / processes and suggest the modification of the same.
5. To formulate / create - methods / processes / designs in the field of Chemistry with improved efficacy and performance through carrying out individual research projects

6. Acquire adequate skills to design and synthesize new organic drug molecules to cater to the needs of pharma and other industries and to impart industrial training to become entrepreneurs and towards establishing green/sustainable practices

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Organic Chemistry – I	CH712	<ul style="list-style-type: none"> To understand the substitution in aromatic and aliphatic reactions. To learn the kinetic and non-kinetic methods of determining organic reaction mechanism. 	<ul style="list-style-type: none"> Substitution reactions in aromatic and aliphatic substrates can be understood by the students through test and models The fundamental principles in determining organic reaction mechanism and identifying the kinetic and non kinetic methods in the organic reactions were also learned by them. 	Regional developmental needs
2	Inorganic Chemistry – I	CH713	<ul style="list-style-type: none"> To impart the knowledge about the structure of materials and their significance. To understand the theories of coordination complexes and their importance. To learn the use of Inorganic Compounds in Biological systems 	<ul style="list-style-type: none"> The knowledge of structures of materials and their significance were imparted to the students through models The theories of coordination complexes and their importance were learned by them 	Regional developmental needs
3	Physical Chemistry – I	CH714	<ul style="list-style-type: none"> To study the partial molar property, fugacity and its significance. To study theories and basic concepts of Chemical kinetics - mechanism of acid, base and enzyme catalysed reaction. To understand the chemical 	<ul style="list-style-type: none"> The significance of fugacity, and partial molar properties were studied by the students The concept of chemical kinetics and its theory were also studied by them The chemical applications of group theory was also understood by them 	National developmental needs

			applications of group theory.	through the online courses like NPTEL	
4	Inorganic Photochemistry (Elective I)	CH715A	<ul style="list-style-type: none"> To provide the students with basic information on matter radiation interactions and their consequences excited state formation modes, photophysical and photochemical deactivation pathways, and application of theoretical knowledge. Students are equipped with the knowledge on composition, molecular and electronic structures of inorganic compounds. Students will know to identify and quantify the course of photophysical and photochemical processes. 	<ul style="list-style-type: none"> Theoretical knowledge on matter radiations, interactions, excited state formation modes, photo physical, and photochemical deactivation pathways were learned by the students Molecular composition, and electronic structures of inorganic compounds were also learned by them The photo physical and photo chemical process will be identified and quantified by the students 	Regional developmental needs
5	Heterocyclic Chemistry (Elective-II)	CH715 B	<ul style="list-style-type: none"> To learn the nature and reactions of heterocyclic compounds To understand the classification and significance of heterocyclic compounds 	<ul style="list-style-type: none"> The reactions of heterocyclic compounds and its nature were learned The classifications of heterocyclic compounds and its significance were understood 	National developmental needs
6	Material Science (Elective – III)	CH715C	<ul style="list-style-type: none"> To Study enzyme catalysis and kinetics of complex reactions. To study the fundamentals and applications of classical mechanics and quantum chemistry To learn the fundamentals and applications of statistical 	<ul style="list-style-type: none"> Different types of materials and their preparation and properties were learned Introduction about nanomaterials were also learned 	Regional developmental needs

			thermodynamics.		
7	Organic Chemistry – II	CH813	<ul style="list-style-type: none"> To understand the addition, elimination, reduction and oxidation reaction mechanisms To learn the concept of bonding, structure and reactivity of organic molecules 	<ul style="list-style-type: none"> Advanced concept of bonding, structure and reactivity of organic molecules was understood by them through test and models Fundamental principles of addition, elimination, reduction and oxidation reaction mechanisms were also understood by them 	National developmental needs
8	Inorganic Chemistry – II	CH814	<ul style="list-style-type: none"> To study the concept of coordination Chemistry, stability of the complexes and stereochemistry of complexes. To study about structure and bonding in coordination complexes. 	<ul style="list-style-type: none"> The concept of coordination chemistry, stability of the complexes and stereochemistry of the complexes were studied by the students through models Structure and bonding in coordination complexes were also studied by them 	Regional developmental needs
9	Physical Chemistry – II	CH815	<ul style="list-style-type: none"> To Study enzyme catalysis and kinetics of complex reactions. To study the fundamentals and applications of classical mechanics and quantum chemistry To learn the fundamentals and applications of statistical thermodynamics. 	<ul style="list-style-type: none"> The enzyme catalysis and kinetics of complex reactions were studied The classical mechanics fundamentals and its applications were also studied by the students through online courses like NPTEL The fundamentals of statistical thermodynamics and its applications were also learned by them. 	National developmental needs

10	Polymer Chemistry (Elective - I)	CH816A	<ul style="list-style-type: none"> To gain knowledge in the preparation, properties, characterization and uses of polymers. To appreciate the role and applications of polymer substances. 	<ul style="list-style-type: none"> Knowledge of polymers, preparation, properties and characterization were gained Polymer substance role and its application were also learned by the students 	Global developmental needs
11	Green Chemistry Elective - II	CH816B	<ul style="list-style-type: none"> To know eco-friendly methods of synthesis. Understanding the synthesis of any type of organic compounds with the revolution of Green Chemistry. 	<ul style="list-style-type: none"> Eco-friendly synthesis method was learned Synthesis of any type of organic compounds with the revolution of green chemistry was also understood. 	Global developmental needs
12	Bio - Organic Chemistry Elective – III	CH816C	<ul style="list-style-type: none"> To learn the separation of an organic compound from the mixture and identify them using various chemical tests. To enable the student to learn the methods of preparation for some organic compounds. 	<ul style="list-style-type: none"> Then importance of biomolecules was understood by the students The techniques involved in the extraction and methods of determination of the structure of natural products were also understood by them through the test and models 	National developmental needs
13	Organic Chemistry Practical – I	PCH 810	<ul style="list-style-type: none"> To learn the separation of an organic compound from the mixture and identify them using various chemical tests. To enable the student to learn the methods of preparation for some organic compounds. 		National developmental needs

13	Inorganic Chemistry Practicals – I	PCH811	<ul style="list-style-type: none"> To learn the basic principles of qualitative analysis of an inorganic mixture To understand and apply the principles of complexometric titrations 		National developmental needs
14	Physical Chemistry Practicals	PCH812	<ul style="list-style-type: none"> To learn various physical and electrochemical methods to perform chemical measurements 		Regional developmental needs
15	Organic Chemistry – III	CH 914	<ul style="list-style-type: none"> To learn photochemical reactions, pericyclic reactions and their importance. To learn the synthetic application of Organometallic compounds. 	<ul style="list-style-type: none"> Importance of photochemical and pericyclic reactions was learned by them through test and models Organometallic compounds and its synthetic applications were also learned by them 	National developmental needs
16	Inorganic Chemistry – III	CH 915	<ul style="list-style-type: none"> To understand the structural aspects and applications of Organometallic compounds. To study the electron transfer processes and substitution reactions in Coordination complexes To study the fundamentals of nuclear chemistry. 	<ul style="list-style-type: none"> Organometallic compounds applications and structural aspects were understood by the students through models Substitution reactions in coordination complexes and the electron transfer process were also studied. 	Regional developmental needs
17	Physical Chemistry – III	CH 916	<ul style="list-style-type: none"> To study the ionic conductance, Electrode - Electrolytic interface, electrochemical kinetics, over potential, corrosions and fuel cells To appreciate the applications of 	<ul style="list-style-type: none"> The ionic conductance, electrode-electrolyte interface, electrochemical kinetics, over potential, corrosions and fuel cells were studied by the students 	Global developmental needs

			<p>quantum chemistry. To Study the principles, Experimental methods and kinetics studies of photochemical reactions</p>	<ul style="list-style-type: none"> Quantum chemistry, photo chemistry and its experimental and kinetic behaviour were also studied by them through online courses like NPTEL and university of cambridge 	
18	Elective - I Analytical Chemistry	CH 917 A	<ul style="list-style-type: none"> To study the different types of molecular spectroscopy and NMR spectroscopy and its applications To study the analytical techniques, instrumentation and applications. 	<ul style="list-style-type: none"> Applications of NMR spectroscopy and different types of molecular spectroscopy were studied by the students using available literature packages The analytical techniques, instrumentation and applications were also studied by them 	National developmental needs
19	Elective - II Pharmaceutical Chemistry	CH 917 B	<ul style="list-style-type: none"> To understand the composition and the kinetics of drugs To know the different types of drugs and its composition 	<ul style="list-style-type: none"> The importance of chemistry in the pharmaceutical industry and its terminology were learned by the students About antibiotics, vitamins, antipyretics, analgesics, anti-inflammatory agents, alkaloids and hematological agents were also learned by them 	Regional developmental needs
20	Elective - III Research Methodology	CH 917 C	<ul style="list-style-type: none"> To understand the modern techniques used in the research To get the idea about the thesis and paper writing in the research area 	<ul style="list-style-type: none"> The research methods, survey of literature and data analysis were understood by the students Thesis writing method was also learned by them through the available packages 	Global developmental needs

21	Modern Organic Chemistry	CH 1011	<ul style="list-style-type: none"> To know modern synthetic methods and synthetic strategies. This help in planning the synthesis of any types of organic compounds. To learn the synthesis and bio-synthesis of heterocyclic products 	<ul style="list-style-type: none"> Any types of organic compounds synthesis were learned by the students, through modern synthetic methods and strategies. Synthesis and bio-synthesis of heterocyclic products were also learned by the students 	National developmental needs
22	Advanced Inorganic Chemistry	CH 1012	<ul style="list-style-type: none"> To study about the basic concepts of Inorganic spectroscopy To understand the role and applications of inorganic spectroscopy To learn the fundamentals concepts of Nanomaterials 	<ul style="list-style-type: none"> Inorganic spectroscopy's basic concepts and its role in determining metal complexes were studied by the students using the packages available in the literatures The fundamental concepts of nanomaterials were also studied by them 	National developmental needs
23	Spectroscopy	CH 1013	<ul style="list-style-type: none"> To understand the concepts of spectral techniques To apply these techniques for the quantitative and structural analysis of organic compounds 	<ul style="list-style-type: none"> The concept of spectral techniques were understood The quantitative and structural analysis of organic compounds was also learned by them through available literature packages 	Regional developmental needs
24	Reagents in Organic Chemistry (SSP – 2Credits)				Regional developmental needs
25	Chemical Sciences for CSIR-UGC – NET/JRF/ GATE (SSP – 2 Credits)				National developmental needs

26	Advanced Analytical Techniques: SEP		<ul style="list-style-type: none"> To learn the advanced instrumental techniques To interpret the spectra of different spectroscopy 		Regional developmental needs
27	Organic Chemistry Practical – II	PCH 1010	<ul style="list-style-type: none"> To learn practical skills about the estimation of some organic compounds using chemical procedures 		National developmental needs
28	Inorganic Chemistry Practical – II	PCH 1011	<ul style="list-style-type: none"> To learn the methods and techniques to estimate inorganic metals. 		National developmental needs
29	Physical Chemistry Practical- II	PCH 1012	<ul style="list-style-type: none"> To understand the principles that govern the basic electrochemical experiments To learn the physical methods used in determination of parameters such as pH, conductance and EMF etc. 		National developmental needs

Sacred Heart College(Autonomous), Tirupattur

Name of the Programme : B Sc - Chemistry

Programme Outcomes at Undergraduate Level

Undergraduates will be able to:

- PO1: Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment
- PO2: Pursue higher learning programmes and become entrepreneurs
- PO3: Recognize moral and ethical values and be socially responsible citizens in the society
- PO4: Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.
- PO5: Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings
- PO6: Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.
- PO7: Demonstrate communication skills both oral and written in personal and academic pursuits

Programme Specific Outcome (PSO) For UG-Chemistry

Undergraduates in Chemistry are supposed to

- PSO1: Describe the fundamentals and theories in different domains of chemistry which enables them for higher studies.
- PSO2: Have basic knowledge in few fundamental concepts in mathematics and physics.
- PSO3: Have capacity to understand and solve common problems and issues arise related to chemistry.

- PSO4: Get adequate skills to devise methods to analyse chemicals both qualitatively and quantitatively.
- PSO5: Have a thorough knowledge on the impact of chemicals on environmental pollution and develop methods to control them.
- PSO6: Handle different kinds of Chemicals and instruments in laboratories and industries safely.
- PSO7: Develop skills to synthesise organic molecules propose reaction mechanism, characterise, categorise common chemicals.
- PSO8: Gain potential as entrepreneurs to plan a manufacturing unit and as a service provider.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	General Chemistry –I	CH114	<ul style="list-style-type: none"> • To understand the basic atomic structure of elements and their periodic properties • To learn about the fundamental properties of organic compounds • To have a good foundation about the bonding concepts and quantum chemistry 	<ul style="list-style-type: none"> • Understanding of atomic structure and principles behind periodic classification of elements • Identify periodic trends and properties of elements • Identify different electronic effects in organic reactions • Design synthetics methods for the preparation of alkanes and alkenes; understand their chemical properties • Understand ionic bonding and identify bonding and shapes using VSEPR theory 	Local developmental needs
2	General Chemistry – II	CH115	<ul style="list-style-type: none"> • To have a sound knowledge about the basic laboratory hygiene and safety • To know the analytical measurements and units with their significance. • To have an understanding of chemistry of gases and aromatic 	<ul style="list-style-type: none"> • Practice laboratory hygiene and safety • Identify the type of volumetric analysis and also identify the principle behind each method • Understand kinetic theory of gases • Understanding of synthesis and reactions of aromatic hydrocarbons 	Regional developmental needs

			compounds		
3	General Chemistry – III	CH214	<ul style="list-style-type: none"> To learn about the fundamental properties of organic compounds. To understand the important laws of thermodynamics and their implications in chemical systems. To understand the shapes and structures of molecules. 	<ul style="list-style-type: none"> Design synthetic methods for the preparation of aryl halides, alcohols, phenols and ethers and understand their properties List out the properties of liquid state and different methods to assess them Identify the importance of the Fundamentals of thermodynamics: First Law Apply VBT and MOT theory to simple molecules 	Regional developmental needs
4	General Chemistry – IV	CH215	<ul style="list-style-type: none"> To understand the basic atomic structure of elements and their periodic properties. To learn the reactions shown by some important organic compounds. To learn the fundamentals of thermochemistry and thermodynamics 	<ul style="list-style-type: none"> Evaluate the properties of alkali and alkaline earth metals Design synthetic methods for the preparation of alkyl halides, aldehydes and ketones and understand their properties Apply the first law to evaluate thermodynamics properties of reactions Explain the need for second law and the importance of entropy 	National developmental needs
5	Volumetric Analysis	PCH208	<ul style="list-style-type: none"> To learn the methods to estimate chemical substances through various volumetric procedures To appreciate the merits and limitations of each type of analysis 		Local developmental needs

			and acquiring knowledge about the implementation of these procedures for specific ions/species		
6	Allied Chemistry - I (Biochemistry)	ACH109B	<ul style="list-style-type: none"> To understand the basics of chemistry. To learn the role of chemistry in biochemistry 	<ul style="list-style-type: none"> List out the theory governing organic analysis and outline the principles and applications of nuclear chemistry Outline the principle behind chemical kinetics Explain the action of simple drugs and anesthetics Explain the chemistry of body fluids 	Regional developmental needs
7	Allied Chemistry - II (Biochemistry)	ACH209B	<ul style="list-style-type: none"> To understand the basics of chemistry. To learn the role of chemistry in biochemistry 	<ul style="list-style-type: none"> Explain the different separation methods List the applications of nuclear chemistry in biochemistry Identify different types of biomolecules (Carbohydrates, proteins, nucleic acids and vitamins) and lists their chemistry 	Local developmental needs
8	Allied Chemistry Lab Work	PACH208B	<ul style="list-style-type: none"> To learn the basics of analysis involved in estimating the amount of substances. To acquire the practical knowledge about the analysis of organic compounds 		Local developmental needs

9	Organic Chemistry –I	CH 314	<ul style="list-style-type: none"> • To understand the structure, reaction mechanisms of carboxylic acids. • To understand rearrangements in organic reaction mechanisms • To study organo metallic compounds 	<ul style="list-style-type: none"> • Design synthetic methods for the preparation of carboxylic acids, amines and diazonium salts, alkynes and cycloalkanes • Identify different molecular rearrangements and the basis for such behavior with mechanism • Sketch synthetic strategy using organometallic compounds 	Global developmental needs
10	Analytical Chemistry–I	CH 315	<ul style="list-style-type: none"> • To learn the basic principles and applications of important analytical techniques • To develop a sound knowledge in chemistry involved in an analysis 	<ul style="list-style-type: none"> • Identify the suitable methods for separation; explain chemical analysis of compounds • Outline the principle behind gravimetric analysis, radioanalytical techniques, mass spectrometry and list out their applications • Outline the principle behind X-ray and photoelectron spectroscopy 	National developmental needs
11	Inorganic Chemistry – I	CH 414	<ul style="list-style-type: none"> ○ To study the chemistry of main groups elements ○ To understand the variation in the periodic behavior 	<ul style="list-style-type: none"> • Identify the chemistry of p-block elements (Group 13,14,15,16 and 17) and noble gases • Explain the periodic trends, chemical reactivity and physical properties of p-block elements • List out important inorganic compounds of p-block elements, their synthesis and applications 	National developmental needs

12	Physical Chemistry – I	CH 415	<ul style="list-style-type: none"> • To learn the importance of Chemical potential and its significance • To understand the basic concepts of quantum chemistry and phase equilibria • To learn the concepts regarding chemical kinetics and apply them for kinetics related problems in photochemistry 	<ul style="list-style-type: none"> • Explain the significance Gibbs free energy and its applications in thermochemical reactions • Derive the phase rule and construct phase diagrams • List out the laws and the various properties of solutions and colloidal state 	National developmental needs
13	Qualitative Inorganic Analysis	PCH 407	<ul style="list-style-type: none"> • To enable the student to systematically identify the cations and anions present in an inorganic mixture • To know the appropriate chemical procedures and apply them to prepare some familiar complexes 		National developmental needs
14	Allied Chemistry – I	ACH 307 A	<ul style="list-style-type: none"> • To make the students understand the mathematical applications of Chemistry • To understand the fuel and water Chemistry 	<ul style="list-style-type: none"> • Explain different types of volumetric methods • Mathematical background behind the development of group theory and its applications in chemistry • Outline the principle behind chemical kinetics and electrochemistry • Understanding of chemistry of fuels and chemistry of water 	Regional developmental needs

15	Allied Chemistry - II (Mathematics)	ACH 408 A	<ul style="list-style-type: none"> To make the students understand the mathematical applications of chemistry To be familiar with chemistry in our surrounding 	<ul style="list-style-type: none"> List out the theory governing organic analysis and outline the principles and applications of nuclear chemistry Identify different types of biomolecules (Carbohydrates, proteins, nucleic acids and vitamins) Formulate the chemistry behind drugs List out the chemistry behind soil analysis 	Regional developmental needs
16	Allied Chemistry - I (Physics)	ACH 307 B	<ul style="list-style-type: none"> To make the students understand the physical applications of chemistry. To understand the chemistry of water 	<ul style="list-style-type: none"> List out the theory governing organic analysis and outline the principles and applications of nuclear chemistry Identify different types of biomolecules (Carbohydrates, proteins, nucleic acids and vitamins) Formulate the chemistry behind drugs List out the chemistry behind soil analysis 	Regional developmental needs
17	Allied Chemistry - II (Physics)	ACH 408 B	<ul style="list-style-type: none"> To make the students understand the physical applications of chemistry To understand the chemistry of soil. 	<ul style="list-style-type: none"> List out the theory governing organic analysis and outline the principles and applications of nuclear chemistry Outline the principle behind chemical kinetics and electrochemistry List out the chemistry behind soil analysis 	National developmental needs

18	Allied Chemistry Lab Work (Mathematics)	PACH407 A	<ul style="list-style-type: none"> To learn the basics of analysis involved in estimating the amount of substances. To acquire the practical knowledge about the analysis of organic compounds 		Local developmental needs
19	Allied Chemistry Lab Work (Physics)	PACH 407B	<ul style="list-style-type: none"> To learn the basics of analysis involved in estimating the amount of substances. To acquire the practical knowledge about the analysis of organic compounds 		Regional developmental needs
20	Allied Chemistry Lab Work (Biochemistry)	PACH208B	<ul style="list-style-type: none"> To learn the basics of analysis involved in estimating the amount of substances. To acquire the practical knowledge about the analysis of organic compounds 		Regional developmental needs
21	Organic Chemistry – II	CH 537	<ul style="list-style-type: none"> To learn the stereochemical factors that influence the chemical reactions To appreciate the importance and applications of photochemical reactions and understand the basic concepts of organic chemistry. 	<ul style="list-style-type: none"> Identify isomers, chiral centers, evaluate the type of isomers Identify the type of photochemical reaction and the type of pericyclic reaction Explain the properties and synthetic applications of heterocyclic compounds 	National developmental needs
22	Inorganic Chemistry - II	CH 538	<ul style="list-style-type: none"> To understand the periodic properties of transition elements. To learn the fundamentals of coordination compounds and their importance. To understand the role of elements 	<ul style="list-style-type: none"> Explain the general trends and properties of transition elements Explain the bonding and isomerism in coordination compounds Outline the different organometallic compounds and explain their 	National developmental needs

			in organo-metallic and bio-inorganic chemistry	synthetic applications	
23	Physical Chemistry – II	CH 539	<ul style="list-style-type: none"> • To understand the basic concepts of quantum chemistry and statistical thermodynamics • To learn the concepts regarding chemical kinetics and apply them for kinetics related problems in photochemistry 	<ul style="list-style-type: none"> • To understand the physical principles underlying in spontaneous and non spontaneous processes • To attempt to apply the concepts in to applications 	National developmental needs
24	Analytical Chemistry – II	CH 540	<ul style="list-style-type: none"> • To study the basics, principles and instrumentation of spectroscopy. • To learn the basics, principles of polarography and amperometry techniques. 	<ul style="list-style-type: none"> • To learn and understand the basic analytical techniques and their applications • To understand the basic principles that makes each analytical technique possible and useful 	Global developmental needs
25	Pharmaceutical Chemistry	CH 541 A	<ul style="list-style-type: none"> • To acquire a sound knowledge about the chemistry of drugs and their mechanism of action. • To learn about various types of diseases, their cause and cure through conventional and modern medicine. 		Regional developmental needs
26	Clinical Biochemistry	CH 541 B	<ul style="list-style-type: none"> • To understand the basics of clinical biochemistry • To learn the various techniques for the biofluid analysis. 		Local developmental needs

27	Bioinorganic Chemistry	CH 541 C	<ul style="list-style-type: none"> • To understand the scope of bioinorganic chemistry • To learn the chemistry of metelloporphyrin, metelloenzymes. • To know the significance of metals in medicine. 		Regional developmental needs
28	Applied Chemistry	CH 542 A	<ul style="list-style-type: none"> • To inculcate the latest sophisticated analytical techniques • To characterize the solid state materials which found applications in day-to-day life. 		Local developmental needs
29	Protein Chemistry	CH 542 B	<ul style="list-style-type: none"> • To learn the chemistry of Amino acids and proteins. • To learn the importance of enzymes and enzyme catalysis 		Regional developmental needs
30	Computers for Chemists	CH 542 C	<ul style="list-style-type: none"> • To enable the students to understand the basics of computers • To enable them to operate computers draw chemical structures using some chemistry software's • To make chemical calculations using computer programs. 		National developmental needs
31	Organic Chemistry – III	CH 633	<ul style="list-style-type: none"> • To learn the chemistry of biomolecules. • To understand the significance of biomolecules and natural products. 	<ul style="list-style-type: none"> • To get familiarized in the advanced concepts of organic chemistry in continuation with the fundamental concepts. 	National developmental needs

32	Inorganic Chemistry - III	CH 634	<ul style="list-style-type: none"> • To understand the chemistry of rare earths elements and their importance. • To learn the fundamental concepts of nuclear chemistry. • To understand the fundamentals of solid state chemistry and acids and bases. 	<ul style="list-style-type: none"> • To learn and understand the impact of certain inorganic chemical concepts and their applications 	National development needs
33	Physical Chemistry - III	CH 635	<ul style="list-style-type: none"> • To know the fundamentals theories that govern the electrolytic conductance in solids and solutions and apply them to solve problems related to it. • To learn about the acids and base equilibria • To know about the different types of electrochemical cells and their importance. 	<ul style="list-style-type: none"> • To understand and comprehend the utility of electrochemical and analytical instruments based of the physical chemistry concepts 	National developmental needs
34	Polymer Chemistry	CH 636 A	<ul style="list-style-type: none"> • To understand the mechanism of polymerization, various techniques of polymerization • To learn about the characterization of polymers by molecular weight, reactions and degradation of polymers. • To learn the applications and appreciate the recent developments of polymers. 	<ul style="list-style-type: none"> • To learn exclusively the usage of chemical principles in selected branches of chemistry that leads to employability and entrepreneurship. 	National developmental needs

35	Industrial and Environment Chemistry	CH 636 B	<ul style="list-style-type: none"> • To introduce the students about industrial extraction processes. • The pollution induced by the industrial development and the care towards the environment is focused. 		Regional developmental needs
36	Green Chemistry	CH 636 C	<ul style="list-style-type: none"> • To understand the environmental concern and shrinking resources • To learn the environmental friendly products and procedure. • To take a natural view of different chemical processes 		National developmental needs
37	Materials Chemistry	CH 636 D	<ul style="list-style-type: none"> • To understand the basic concepts of crystal structures and their characterization • To learn about different properties of solid state materials and their characteristic structural features 		Regional developmental needs
38	Inorganic Materials of Industrial Importance	CH 636 E	<ul style="list-style-type: none"> • To learn the principles of Nanotechnology • To understand the principles and properties of Inorganic materials of Industrial importance. • To study the significance and its applications of Inorganic materials of Industrial importance. 		National developmental needs
39	Reaction Mechanisms and Reagents in Organic Chemistry	CH 636 F	<ul style="list-style-type: none"> • To learn the basic types of organic reaction and their mechanisms. • To acquire sound knowledge about different types of reagents involved in organic synthesis. 		Regional developmental needs

40	Gravimetric Estimations and Organic Analysis	PCH 619	<ul style="list-style-type: none"> • To acquire sound practical knowledge in the gravimetric estimations. • To prepare the students for analysing various organic compounds through systematic analysis. • To enable the student to understand the principles behind the preparations of different organic compounds. 		Regional developmental needs
41	Physical Chemistry Experiments	PCH 620	<ul style="list-style-type: none"> • To understand about physical behaviour of compounds. • To impart sound practical knowledge in understanding the reaction pathways and calculations involved in them. 		Regional developmental needs

M.Sc. Physics

Programme Outcomes at Postgraduate Level

Programme will be able to:

1. Demonstrate intense knowledge in their discipline
2. Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice
3. Develop expertise in their field of study through projects and research activities
4. Prepare themselves to incorporate new technologies in their own discipline and demonstrate excellence in their area of specialization
5. Develop social and ethical responsibility in the transfer and management of knowledge

Programme Specific Outcomes

On completion of the M.Sc programme in Physics, the students will

1. Develop the ability to identify and analyze complex physics problems in classical mechanics, statistical mechanics, quantum mechanics, and electromagnetic theory using the laws and theorems of physics with appropriate mathematical tools and thereby preparing the students to face competitive exams like CSIR-NET/SET/GATE/JEST and other similar exams.
2. Develop an in-depth knowledge by understanding the basic concepts of specialized and/or interdisciplinary courses such as nuclear and particle physics, molecular spectroscopy, solid state physics, electronics and experimental physics such as crystal growth and nanoscience.
3. Acquire the ability to handle certain advanced scientific equipment's through hands on training in basic as well as advanced areas of physics such as condensed matter physics, optics & lasers, electronics, microprocessors & microcontrollers and programming in C.

4. Create skills required for identifying socially relevant research problems in theoretical and/or experimental physics, collection of relevant data, analyze and interpret data through a supervised project leading to knowledge enhancement in interdisciplinary areas of research and publish their findings in reputed international and national journals following research and publication ethics.
5. Gain an in-depth knowledge in physics to be able to teach it at university/college level and in school level and to apply their skills to develop innovative scientific solutions for industrial and social needs.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Mathematical Physics	P713	<ul style="list-style-type: none"> • To provide an insight into complex analysis, special functions, transform techniques which form the back bone of all higher physics and to apply these techniques to solve Physics problems. • To enable the students to understand the basic principles and importance of tensor analysis, group theory and appreciate their applications in the field of Physics 	<ul style="list-style-type: none"> • Use the complex derivatives function, use and operate analytic functions, demonstrate knowledge of integration in the complex plane, use the Cauchy integral theorem and formula, understand residues and their use in integration. • Gain a working knowledge of know elementary ideas in Gamma and Beta functions, series solutions and special functions, will be able to apply to solve problems in classical, statistical and quantum mechanics as well as electromagnetism • Evaluate the Fourier transform of a continuous function, and be familiar with its basic properties and convolution theorem and also learn Laplace transform, properties and special functions will help the students to critically analyze physical problems. • Understand Tensors and its importance in physics because they provide a concise mathematical framework for formulating and solving physics problems in areas such as elasticity, fluid mechanics, and general relativity. Similarly the basic ideas of 	global developmental needs

				Group Theory and the closely related representation theory have many important applications in physics, chemistry, and materials science.	
2	Classical Mechanics and Statistical Mechanics	P714	<ul style="list-style-type: none"> To introduce the classical formulation approaches like Lagrangian and Hamiltonian dynamics and to study their application in mechanical systems and solving of problems. To review the fundamental concepts of thermodynamics and to create an understanding of the principles of classical and quantum Statistical Mechanics and their applications 	<ul style="list-style-type: none"> Have a in-depth knowledge about Lagrangian and Hamiltonian dynamics Be able to applicate and solve problems in mechanical systems using Lagrangian and hamiltonian formulations Learn different statistical ensembles, their distribution functions, ranges of applicability and the corresponding thermodynamic potentials Acquire knowledge to calculate basic thermodynamical quantities: energy, specific heat, entropy, Helmholtz free energy, etc in classical and quantum statistical models. 	global developmental needs
3	Quantum Mechanics – I	P715	<ul style="list-style-type: none"> To provide an understanding of fundamental principles of quantum mechanics and to introduce the basic ideas of Dirac formalism, approximation methods in Quantum Mechanics. To make the students to understand the concept of angular momentum (both orbital and spin), the 	<ul style="list-style-type: none"> Gain knowledge of the development of quantum ideas. And learn the wave nature of matter, uncertainty principle, time dependent and independent Schrodinger of the wave functions, with its physical significance as well the general formalism of quantum mechanics. Understand the energy eigenvalues and eigenfunctions of certain simple potentials on the basis of Schrodinger method. Momentum representation and equations of motion. And also will learn the different types of symmetries and the related conversion laws. Understand the important approximation methods, the 	global developmental needs

			<p>commutation rules, identical particles wave functions, and Pauli's spin matrices.</p>	<p>variation, WKB, time independent perturbation methods and the application of these techniques.</p> <ul style="list-style-type: none"> • Understand the concept of angular momentum (both orbital and spin), the commutation rules, identical particles wave functions, and Pauli's spin matrices. 	
4	<p>Elective: Electronic Devices and Applications</p>	P716A	<ul style="list-style-type: none"> • To know the fixed function of combinational logical circuits and their implementation, to study the fundamentals and applications of sequential logic circuits and to introduce structures, physical operations and circuit applications of basic semiconductor devices and display devices. • To provide students a base for a further study of analog and digital electronics, to develop the ability to analyze and design electronic circuits and to grasp the basic ideas of op-amps and its applications. 	<ul style="list-style-type: none"> • Apply the concept of semiconductor physics • Apply the concepts of basic electronic devices to design various circuits • Analyze electronic circuits • Design, fabricate and test small electronic circuit. 	<p>national, developmental needs</p>

5	Elective: Energy and Environmental Physics	P716B	<ul style="list-style-type: none"> • To introduce the students to energy and its conversion, energy collection and utilization • To teach the students regarding energy crisis and to enlighten the students regarding environmental pollution 	<ul style="list-style-type: none"> • Gain knowledge about energy, energy harvesting and saving. • Be aware of various types of environmental pollution and will learn to control them 	Local developmental needs
6	Astrophysics	P716C	<ul style="list-style-type: none"> • To facilitate the students to understand and explore the heavenly bodies. • To make the students to understand the various telescopes to explore the heavenly bodies and to help the students to know the members of solar system 	<ul style="list-style-type: none"> • Be enabling to acquire the knowledge about heavenly bodies. • Make their observation in various telescopes to explore the heavenly bodies. • Understand the various members of solar system. 	National developmental needs
7	Electromagnetic Theory	P813	<ul style="list-style-type: none"> • To provide a clear and logical presentation of basics of electromagnetic theory. • To introduce the laws governing the distribution and propagation of electromagnetic fields created by static and dynamic charge distributions and their interaction with matter 	<ul style="list-style-type: none"> • Have a depth knowledge in electrostatics and magnetostatics. • Learn the Maxwell's equations and its applications. • Understand clearly electromagnetic signal propagation in various media. 	Global developmental needs

8	Quantum Mechanics-II	P814	<ul style="list-style-type: none"> • To introduce the physical concepts and mathematical formalism of scattering theory, time dependent perturbation theory, its applications, relativistic quantum mechanics, Dirac equation and quantum field theory. • To make the students to understand the concept of Quantum Field Theory by learning Relativistic Lagrangian and Hamiltonian of charged particle in an electromagnetic field and its formulations. Also learn Second K.G field, Maxwell's electromagnetic field, non-relativistic Schrödinger's field, Quantization of Dirac field and Interaction between fields. 	<ul style="list-style-type: none"> • Will learn and understand scattering phenomenon occurring in quantum mechanics. • Understand the concepts of time independent perturbation theory and its applications to physical situations. • Understand the founding principles of relativistic quantum mechanics and through the knowledge of Dirac equation and matrices and their role in the Lorentz transformations of Dirac spinors with the use of projection operators to filter spin and positive/negative energy solutions. • Understand the concept of Quantum Field Theory by learning Relativistic Lagrangian and Hamiltonian of charged particle in an electromagnetic field and its formulations. Also learn Second K.G field, Maxwell's electromagnetic field, non-relativistic Schrödinger's field, Quantization of Dirac field and Interaction between fields. 	national, developmental needs
9	Electronic Instrumentation Techniques	P815	<ul style="list-style-type: none"> • To expose the students to the principles and working of Transducers and Analog and Digital Instruments used in measurement of various physical quantities. • To make the students to 	<ul style="list-style-type: none"> • Understand the principles and working of Transducers and Analog and Digital Instruments used in measurement of various physical quantities. • Understand the working of electrical and magnetic measurement instruments. • Make their own observations with a variety of instruments. 	local, developmental needs

			<p>understand the working of electrical and magnetic measurement instruments and to provide basic knowledge about the working of Compositional analysis instruments and Bio-medical instruments.</p>	<ul style="list-style-type: none"> • Be able to acquire knowledge about the working of Compositional analysis instruments and Bio-medical instruments 	
10	<p>Elective: Microprocessor 8085 and Microcontroller 8051</p>	P816A	<ul style="list-style-type: none"> • To provide an understanding of the architecture and functioning of microprocessor 8085A and to the methods of interfacing I/O devices and memory to microprocessor. • To introduce 8085A programming and applications and the architecture and instruction sets of microcontroller 8051. 	<ul style="list-style-type: none"> • Gain knowledge of architecture and working of 8085 microprocessor and 8051Microcontroller. • Be able to write simple assembly language programs for 8085A microprocessor and 8051microcontroller • Understand the different applications of microprocessor and microcontroller. 	<p>Regional developm ental needs</p>
11	<p>Elective: Geophysics</p>	P816B	<ul style="list-style-type: none"> • To make the students to understand the physics and geology that form the basis for geophysical observation and measurement and to help the students to understand Earth structure and evolution. • To make the students to identify the physical processes governing the 	<ul style="list-style-type: none"> • Understand the physics and geology that form the basis for geophysical observation and measurement and identify the physical processes governing the behavior of common geophysical systems. • Be able to explain the principles of applying geophysical methods to societally relevant problems, including natural hazards, resource exploration and management, and environmental issues. • Make their own observations with a variety of geophysical instruments, and reduce, model, and interpret their data and uncertainties and be able to 	<p>National developm ental needs</p>

			behavior of common geophysical systems and to make their own observations with a variety of geophysical instruments, and reduce, model, and interpret their data and uncertainties.	interpret and evaluate the published literature and oral and poster presentations at national meetings.	
12	Elective: Biophysics	P816C	<ul style="list-style-type: none"> • To explore the fundamental background of physics behind the cellular and molecular structure and its dynamics • To provide an insight knowledge about the application of light and bio compatible nonmaterial in the field of bio physics. 	<ul style="list-style-type: none"> • Able to explain physics behind the dynamics, molecular structure of proteins, amino acids and conduction system. • Able to synthesis biocompatible based nanoparticles and bio polymers and to demonstrate the physiochemical techniques and instrumentation in biological application. 	Regional developmental needs
13	Self-Study Paper: Ultrasonics		<ul style="list-style-type: none"> • To impart the fundamental concepts of ultrasonics and its measurements and also make them to understand the influence of ultrasonic studies on molecular interactions • To learn non-destructive testing and its importance and to make them understand about ultrasound and its application in medical field. 	<ul style="list-style-type: none"> • Understand the fundamentals of ultrasonics and its measurements. • Understand and learn Molecular interaction studies between liquid mixtures by ultrasonic waves and understand the industrial application of ultrasonics. • Grasp the idea about clinical importance in Ophthalmology, Gynaecology and also in cardiovascular treatments applications. 	Regional developmental needs

14	General Experiments	PP807			Local developmental needs
15	Electronics Experiments	PP808			Local developmental needs
16	Solid State Physics	P912	<ul style="list-style-type: none"> • To provide an understanding of the basics of crystal physics, metals, semiconductors, superconductors and magnetism. • To familiarise the various theoretical models to study the properties of matter from a microscopic point of view. 	<ul style="list-style-type: none"> • Understand the crystal structure and binding. • Understand the concept of crystal physics, metals, semiconductors, superconductors and magnetism. • Learn about the properties of matter from a microscopic point of view. 	global developmental needs

17	Atomic and Molecular Spectroscopy	P913	<ul style="list-style-type: none"> • To provide a knowledge of interaction of electromagnetic radiation with atoms and molecules and systematically introduce to spectra and basic theoretical concepts in spectroscopic methods. • To expose to the fundamental principles of various spectroscopic techniques for structural applications 	<ul style="list-style-type: none"> • Understand different branches of spectroscopy and carry out experimental and theoretical studies on atoms and molecules with focus on the structure and dynamics • Apply the knowledge of spectroscopy in interdisciplinary subjects like chemistry, mathematics and biological systems. • Handle relevant experimental equipment and evaluate experimental results obtained. 	global developmental needs
18	C Programming and Research Methodology	P914	<ul style="list-style-type: none"> • To familiarize the student with the dimensions and methods of research, to enable the student to present a good research proposal and to familiarize the student with the nature of research and scientific writing • To empower the student with the knowledge and skills they need to undertake a research project, to present a conference paper and to write a scientific article and to analyze, interpret and evaluate scientific hypotheses and theories 	<ul style="list-style-type: none"> • Think critically and to use appropriate concepts to analyze qualitative problems involving the fundamental principles of physics • Use appropriate mathematical techniques and concepts to obtain quantitative solutions to problems in physics. • Develop programs using the basic elements like control statements, arrays and strings . 	national, developmental needs

			<p>using rigorous methods such as statistical and mathematical techniques.</p> <ul style="list-style-type: none"> To apply numerical methods in modern scientific computing, to familiar with numerical solution of integration, linear equations, ordinary differential equations etc and to impart adequate knowledge on the need of programming languages and problem solving techniques. 		
19	Elective: Nanoscience and Technology	P915A	<ul style="list-style-type: none"> To provide an introduction to nanomaterials, their synthesis, properties and applications. To introduce to various thin films deposition techniques and characterization techniques 	<ul style="list-style-type: none"> Gain knowledge about Nanomaterials and thin films. Acquire in depth knowledge about various characterization techniques which will in turn kindle his research interest. <p>Know some of the applications of Nanomaterials and thin films that are applicable in daytoday life</p>	local, developmental needs
20	Elective: Optical Physics	P915B	<ul style="list-style-type: none"> To introduce the students to the concepts of electromagnetic waves, lasers, optical fibres and optical devices. To make the students understand the applications of optics. 	<ul style="list-style-type: none"> Understand the concepts of optical Physics, particularly those of lasers, optical fibres and optical devices Understand and appreciate the various optical devices and their applications in different fields 	regional, developmental needs

21	Elective: Quantum Computational Physics	P915C	<ul style="list-style-type: none"> • To introduce modern methods of molecular modeling and culminating in electronic structure modeling. • To introduce formalism of quantum computation. 	<ul style="list-style-type: none"> • Have a conceptual understanding of quantum mechanics necessary for the description of molecules and atoms. • Be able to choose an appropriate method to solve quantum computational problems 	Global developm ental needs
22	Self-Study Paper: Communication Electronics		<ul style="list-style-type: none"> • To familiarize the basic antenna parameters, radiated power, radiation resistance, radiation efficiency, radiation pattern and to review the fundamentals of antenna theory. • To enable the students to understand the different types of communications and make them appreciate the flavor of physics in communication and to understand the concepts and techniques involved in communication by satellites. 	<ul style="list-style-type: none"> • Understand the function of antennas, different types of antennas and the radiation mechanism. • Demonstrate proficiency in the use of data and wireless communication networks, equipment and devices. • Analyze components associated with digital and analog electronic/communications systems. 	National developm ental needs

23	Materials Science	P1010	<ul style="list-style-type: none"> • To introduce the students to the concepts of Phase Diagrams and Solid Solutions. • To provide an understanding of Optical Properties, Dielectric Properties and Ferro Electric properties of materials and to impart knowledge about crystal defects and imperfections, Polymers, Ceramics and composites 	<ul style="list-style-type: none"> • Learn and understand the concept of Phase Diagrams, solid solutions and environmental degradation and they possess strong knowledge of crystal defects and elastic behaviors. • Develop the knowledge of polymers, ceramics, composites and understand the optical properties, Dielectric properties and ferro electric properties of materials 	Regional developmental needs
24	Nuclear and Particle Physics	P1011	<ul style="list-style-type: none"> • To provide brief introduction to the various nuclear models and the experimental data supporting the model. • To provide an introduction to nuclear interactions and nuclear reactions and to enhance the knowledge about various fundamental particles, their decay and weak interactions of quarks. 	<ul style="list-style-type: none"> • Be able to differentiate the different models of the nucleus and apply their idea in calculating the parameters theoretically. • Have strong physical reasoning and problem solving skill and able to find solutions to the problems related with nuclear physics • Be able to demonstrate the different types of nuclear reaction and its applications in daytoday life 	National developmental needs

25	Elective: Crystal Physics and Nonlinear Optics	P1012 A	<ul style="list-style-type: none"> • To provide fundamentals of growing crystals and theoretical background of nonlinearoptics. • To provide an eye opener for students keen in research activities particularly in experimental physics. 	<ul style="list-style-type: none"> • Understand the formation of nucleation and the different crystal growth techniques in the laboratory conditions. • Understand the various nonlinear optical phenomena and applications 	Global developm ental needs
26	Elective: Reactor Physics	P1012 B	<ul style="list-style-type: none"> • To introduce the concepts of nuclear energy, neutron diffusion and neutron moderation. • To provide an understanding of construction, kinetics, fuel used, precautions to be taken and applications of reactors. 		national developm ental needs

B. Sc. Physics

Programme Outcomes at Undergraduate Level

Undergraduates will be able to

PO1: Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment.

PO2: Pursue higher learning programmes and become entrepreneurs.

PO3: Recognize moral and ethical values and be socially responsible citizens in the society.

PO4: Apply analytical, technical, problem solving, critical thinking skills, and decision making skills in solving real life problems in one's life and in the society.

PO5: Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings.

PO6: Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.

PO7: Demonstrate communication skills both oral and written in personal and academic pursuits.

Program Specific Outcomes (PSOs) :

PSO1: Students will acquire a strong knowledge and deep understanding of core physics concepts, principles, theories and applications of selected topics in Physics.

PSO2: Students will acquire laboratory skills/practical skills. They will be able to handle optical, electrical and electronic instruments effectively to take measurements/observations. They will be able to construct electrical and electronic circuits, identify and rectify faults in circuits and study their performance.

PSO3: Students will develop analytical and scientific reasoning skills. They will be able to analyze the measurements/observations, construct logical arguments, draw valid conclusions and apply analytical skills to solve physics problems.

PSO4: Students will display a capacity for self management, teamwork, leadership and decision making. They will be able to discuss debate and communicate in a clear and logical way, in oral and written form.

PSO5: Students will develop self-confidence and self-reliance to face various competitive and professional examinations. Students will learn to respect and value social, cultural and personal diversity.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Mechanics	P111	<ul style="list-style-type: none"> To introduce the students to the concepts of vectors, resolution of vectors and vector operators. To provide an understanding of one dimensional and two dimensional motion of objects, impact of bodies and Rigid body dynamics. To impart a knowledge of Gravitation and related concepts. 	<p>On completion of the course the students will be able to</p> <ul style="list-style-type: none"> Acquire a knowledge of analyzing the motion of objects using fundamental laws of physics. Understand gravitational potential energy and analyze the variation of acceleration due to gravity 'g'. Solve simple problems involving the dynamic motions of objects. 	National

2	Properties of Matter	P112	<ul style="list-style-type: none"> • To impart the basic concepts of properties of matter to make the students to realize the concepts in day-to-day life. • To learn and comprehend the concepts of elasticity, Viscosity and surface tension. 	<ul style="list-style-type: none"> • Students understand the behavior and properties of solids and fluids. • Students gain the knowledge about Hydrostatics and hydrodynamics 	National
3	Heat and Thermodynamics	P210	<ul style="list-style-type: none"> • To comprehend and learn the concepts of heat and heat transmission • To introduce the students to the basic concepts of thermodynamics 	<ul style="list-style-type: none"> • Students will be able to understand calorimetry and the technique of calorimetry • Students will have a strong knowledge of heat transfer and the fundamental laws and principles of thermodynamics. • Learning Maxwell's law on the application to gas will help the students to understand the major concepts behind the kinetic molecular theory of gases 	National

4	Sound	P211	<ul style="list-style-type: none"> • To make the students to understand concepts of wave motion, vibrations and acoustics. • To distinguish between transverse and longitudinal waves. • To acquire knowledge on the concepts of production and detection of ultrasonic waves. 	<p>On completion of this course, students will be able to</p> <ul style="list-style-type: none"> • Describe several fundamental concepts concerning the nature of a sound wave. • Describe the characteristics of amplitude, wavelength and frequency for a sound wave. • Identify the cause and result of resonance and the basic vocabulary associated with resonance. 	National
5	Physics for Mathematics –I (Allied)	AP104	<ul style="list-style-type: none"> • To explain the concepts of work, energy, impulse, impact and momentum. • To study the basics of elasticity and its importance in beams. • To study the concepts of viscosity and surface tension and the various methods to determine the parameters experimentally. • To understand the concepts of interference, diffraction and polarization of light waves and their applications. • To study number systems and to simplify Boolean expression. 	<p>On successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Acquire basic knowledge about mechanics and properties of matter. • Familiarize the fundamental laws concerning, interference, diffraction, polarization. • Distinguish the propagation of sound waves. • Construct the logic gates and to solve the Boolean expression. 	National

6	Physics for Mathematics –II (Allied)	AP204	<ul style="list-style-type: none"> • To study different types of optical fibers and its applications • To understand the working principle of Lasers and their applications • To study atom models and production of x-rays • To study the process of radioactivity and its applications, working of accelerators. • To understand the concepts of wave mechanics, dualistic nature of light. 	<p>After the successful completion of this paper, the students will be able to,</p> <ul style="list-style-type: none"> • Discuss the production of x-rays as the inverse of the photo electric effect. • Describe the origin of sub-shells, shells and for atoms with two or more electrons. • Describe different types of optical fibers and its applications • Understand the working principle of Lasers and their applications • Explain the process of radioactivity and its applications, working of accelerators. • Understand the concepts of wave mechanics, dualistic nature of light. 	National
7	Electromagnetism	P312	<ul style="list-style-type: none"> • To introduce the students to the basic concepts of Electrostatics and Electricity • To explain the principle and working of Potentiometer and Carey Foster's Bridge • To provide an overview of the fundamental principles of Coulomb's law, Biot-Savart law 	<p>On the completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Explain and differentiate between electric field and electric potential • Illustrate the coulomb's law • Describe electromagnetic induction and related concepts and make calculations using 	Regional and National

			<p>and magneto statics.</p> <ul style="list-style-type: none"> To Expose the students to Maxwell's equations 	<p>faraday's laws.</p> <p>Describe the properties of Dia, Para and Ferro magnetic materials and identify the form of magnetism possessed by a material.</p>	
8	Optics	P313	<ul style="list-style-type: none"> Providing a broad overview of Aberration in lenses, Achromatic doublets, interference, diffraction and polarization Exposing the students to the principles and applications of LASER and MASER 	<p>On completion of this course, students will be able to</p> <ul style="list-style-type: none"> Understand the meaning of spherical aberration and Chromatic aberration and the methods of minimizing them. Explain the concepts of Diffraction, Interference and Polarization. Describe the fundamental operational principles of major types of LASER and MASER. 	National
9	Atomic Physics	P412	<ul style="list-style-type: none"> To make the students to understand the concepts of positive rays and X- rays and their applications. To study atom models and their importance. To acquire the knowledge about magneto optical properties of spectrum and photo electric 	<p>On successful completion of this course, students will be able to</p> <ul style="list-style-type: none"> Describe how positive rays and X-rays are formed. Discuss the production of x-rays as the inverse of the photo electric effect. Describe the origin of sub-shells, shells and multiplets for atoms 	Regional and National

			effect.	<p>with two or more electrons.</p> <ul style="list-style-type: none"> • Carry out experimental and theoretical studies on atoms, with focus on the structure and dynamics of atoms. 	
10	Spectroscopy	P413	<ul style="list-style-type: none"> • To provide a knowledge of interaction of electromagnetic radiation with atoms and molecules. • To expose to the various spectroscopic techniques and their usage. 	<ul style="list-style-type: none"> • Students will understand the fundamentals of electromagnetic radiations • Students will realize the importance of spectroscopy and spectrometers 	National
11	Physics for Chemistry –I (Allied)	AP308A	<ul style="list-style-type: none"> • To study the basics of elasticity and its importance in beams. • To study the concepts of viscosity and the various methods to determine the parameters experimentally. • To study the propagation of sound waves, the production of ultrasonic waves and its applications. • To distinguish the geometrical and physical optics. • To understand the concept of 	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Understand the properties of matter, sound and optics. • Understand the basic ideas behind electronic components and their functions. • Understand the concepts of various number conversions and constructions of different logic gates. 	Regional and National

			<p>basic electronics and to study the working of basic electronic devices.</p> <ul style="list-style-type: none"> • To study the various number systems and to simplify Boolean expression. 		
12	Physics for Chemistry –II (Allied)	AP408A	<ul style="list-style-type: none"> • To study vector atom model and to determine the method of critical potential • To study the production of X-rays and its applications • To study the basics of nuclear reactions, process of radioactivity and its applications • To understand the concepts of wave mechanics and dualistic nature of light • To study the basic ideas of electricity and magnetism • To study the different methods of preparing thin films, nanomaterials and their applications 	<p>By the end of this course, students should be able to:</p> <ul style="list-style-type: none"> • Understand the vector atom model and production of X-rays • Understand the basics of nuclear reactions, radioactivity and classification of elementary particles • Understand the concepts of wave mechanics and basics of electricity and magnetism • Understand the basic ideas behind Thin Films and Nano Materials 	Regional and National

13	Physics for Computer Science –I (Allied)	AP308B	<ul style="list-style-type: none"> • To make the students to explore physics in optics, electronics and electronic devices. • To make the student to understand the series and parallel circuits. • To make the student to understand LASER. 	<p>After the successful completion of this paper, the students will be able to,</p> <ul style="list-style-type: none"> • Explore the physics in optics and electronics devices. • Understand about LASER. • Understand circuit connections. 	Regional and National
14	Physics for Computer Science – II (Allied)	AP408B	<ul style="list-style-type: none"> • To impart the basic concepts of physics in electronics and to make the students to realize the concepts of electronics in day-to-day life • To make the student to understand the application of electronic devices • To make the student to know about the communication system 	<p>After the completion of the course, the students will be able to,</p> <ul style="list-style-type: none"> • Understand the concepts of physics in electronics • Realize the concepts of electronics in day-to-day life • Understand the application of electronic devices <p>Know much about the communication system</p>	Regional and National
15	Classical Mechanics and Statistical Physics	P534	<ul style="list-style-type: none"> • Providing in-depth knowledge in Lagrangian and Hamiltonian Principles and Central Force Motion. • Familiarizing the students with the Fundamentals of Statistical mechanics, Statistical distribution laws and their 	<p>On successful completion of this course, the students will be able to</p> <ul style="list-style-type: none"> • Understand and apply the Lagrange's equation of motion to simple physical systems and solve dynamical problems involving classical particles by using the Lagrangian and 	Regional and National

			applications.	<p>Hamiltonian formulation.</p> <ul style="list-style-type: none"> • Apply this knowledge to solve physical problems, including simple pendulum, compound pendulum, linear harmonic oscillator, rigid body rotation, Atwood's machine and planetary motion, • Develop the Maxwell–Boltzmann, Bose–Einstein and Fermi–Dirac distribution laws from first principles. 	
16	Basic Electronics	P535	<ul style="list-style-type: none"> • Providing an overview of the principles, operation and applications of diodes, BJT, FET, MOSFET and UJT. • Providing an overview of amplifiers, types of amplifier, feedback amplifiers and oscillators and their applications in different electronic fields. • Introducing the students to operational amplifiers and their linear and non-linear applications. 	<p>Upon completion of the course, the students will be able to</p> <ul style="list-style-type: none"> • Understand the implications of characteristics of PN junction diodes, Zener diodes, Transistors, FETs, MOSFETs and UJTs. • Describe the purpose of multistage amplifiers and operating characteristics of R-C coupled transistor amplifier. • Gain an understanding of operational amplifiers and their applications as integrators, differentiators, sign changers, summer and subtractor. • Describe the purpose and working of various transistor 	Regional and National

				oscillators and multivibrators.	
17	Solid State Physics	P536	<ul style="list-style-type: none"> • To provide an understanding of the basics of crystal physics, metals, semiconductors, magnetic materials, superconductors and dielectric materials. • To familiarise with the various theoretical models to study the properties of magnetic materials, superconductors. 	<ul style="list-style-type: none"> • Students will learn and understand the crystal structure and Bragg's law. • Understand the concept of band theory and classification of materials. • Students able to learn about the properties of superconductors and magnetic materials. 	National
18	Mathematical physics	P537	<ul style="list-style-type: none"> • To develop sensitivity towards various mathematical techniques in the minds of students which are useful in physics and engineering applications. • To impart the basic concepts of mathematics and to make the students to realize the 	<ul style="list-style-type: none"> • Students will understand the concept of vectors and will be able to resolve a vector in to components. • Students will understand that the importance and application of Dirac delta function. • Students will understand the 	National

			usage of mathematics in physics.	<p>primary use of Green's function to solve non-homogeneous boundary value problems.</p> <ul style="list-style-type: none"> • Students will understand the importance and applications of Fourier series. • Students will acquire the ability to solve higher order partial differential equations by the method of separation of variables. 	
19	Crystal Growth and Nanoscience (Elective)	P538A	<ul style="list-style-type: none"> • To provide an introduction to the relationship between nucleation and growth. • To expose to the various theories of crystal growth. • To familiarize solution growth and gel growth techniques. • To introduce to the rapidly developing field of nanoscience and technology with special focus on the methods of synthesis, characterization techniques and applications of nanomaterials with 	<ul style="list-style-type: none"> • The students will gain knowledge of different crystal growth techniques and the theories behind them. • The students will get to know about Nanomaterials and different methods of synthesizing Nanomaterials. • Students will gain a knowledge of different methods of characterizing the crystal samples and Nanomaterials. 	National

			interdisciplinary approach.		
20	Electronic Communication Systems (Elective)	P538B	<ul style="list-style-type: none"> To enable the students understand the different types of communications and make them appreciate the flavor of physics in communication. 	<ul style="list-style-type: none"> Students will be able to distinguish different sources and their applications in the field of communication. Students will be able to explain the different elements of Mobile, Microwave and Satellite communication systems. 	National
21	Renewable Energy and Energy Harvesting (Elective)	P538C	<ul style="list-style-type: none"> To make the students to understand the importance of renewable energy and energy harvesting for future fulfillment of energy for mankind. 	<ul style="list-style-type: none"> Students will acquire knowledge about the various alternative sources and its importance apart from the fossil fuels Students will be able to construct and demonstrate working of energy conversion systems. Students will implement the idea in energy harvesting, consumption and saving of energy in day today life. 	Regional and national

22	Applied Optics (Elective)	P539A	<ul style="list-style-type: none"> • To impart the basic concepts of nonlinear optics and its applications. • To understand the principle of optoelectronics and their applications. 	<ul style="list-style-type: none"> • Students can understand the behavior of materials in low and high intensity light. • Students will realize the construction and reconstruction of images in holography. • Students will understand the advance communication systems. 	Regional and national
23	8085 Microprocessor and its Applications (Elective)	PP1008	<ul style="list-style-type: none"> • To introduce the students to different number systems and to develop numerical skills. • To achieve general understanding of the fundamentals of microcomputers and microprocessor. • To familiarize students with instruction set and addressing modes of 8085 microprocessor. • To enable students to write assembly language programs and to know the interfacing applications. 	<p>On successful completion of this course, students will be able to</p> <ul style="list-style-type: none"> • Convert numbers from one number system to another • Define characteristics that distinguish 8085 microprocessor from others. • Identify different types of memory and describe how each is used. • To write assembly language programs for simple problems. 	Regional and national

24	Medical Physics (Elective)	P539C	<ul style="list-style-type: none"> • To explore the fundamentals of physics in the areas such as, Physiology, Radiation physics and medical imaging physics. • To provide an in-depth knowledge of radiation, its effects and radiation safety. 	<ul style="list-style-type: none"> • Students will be able to explain physics principles behind the various systems in a human body. • Students will be able to explain and analyse the interaction processes of different types of radiations with matter, their roles in medical imaging, radiation therapy and medical imaging. 	Regional and national
25	Astrophysics (Self Study Paper)	P540X	<ul style="list-style-type: none"> • Providing a broad view of heavenly bodies. • Improving the understanding of solar system and the astronomical instruments. 	<p>By the end of this course, the student will be able to</p> <ul style="list-style-type: none"> • Gain a qualitative knowledge of the Universe and its content. • Demonstrate familiarity with the principal observational properties of stars and planets. • Explain stellar evolution, including red giants, supernovas, neutron stars, white dwarfs and black holes. • Describe the features of objects in the solar system: sun, planets, moons, asteroids, comets, planetary interiors, atmospheres, etc. 	Regional and national

26	Repair and Maintenance of Household Appliances	NPH503	<ul style="list-style-type: none"> • To expose the students to the principles and working of home appliances. • To train the students in Repairing and Maintenance of home appliances. 	<ul style="list-style-type: none"> • At the end of the course the students will have • A knowledge of Importance of observing the safety precautions • The ability to test the continuity of electrical lines with multimeter • The ability to dismantle and reassemble an electric iron • The ability to install a ceiling fan and the regulator • The ability to check a fluorescent lamp chock, starter and install it 	Regional and national
27	Applied Electronics	P631	<ul style="list-style-type: none"> • To acquaint the students to the principles and working of logic gates, sequential circuits, combinational circuits, and Television. • To introduce the students to the principles involved in analog and digital communication. 	<p>After completing the course the student will be able to</p> <ul style="list-style-type: none"> • Use and explain the functionality of AND, NAND, OR, NOR, XOR, NOT gates • Use DeMorgan.'s Theorems to simplify a negated expression • Employ a Karnaugh Map to reduce Boolean expressions • Gain knowledge of fundamental digital design and systematic methods of analysing digital systems • Explain the concept of logic family to build digital circuits 	Regional and national

28	Nuclear Physics	P632	<ul style="list-style-type: none"> • To explore the basic properties of nucleus, nuclear models and the process of radioactivity. • To enable the students to acquire knowledge of the nuclear energy and its applications. 	<ul style="list-style-type: none"> • Students will be able to explain the fundamental concepts of different nuclear models and their predictions. • Students will develop a strong physical reasoning and problem solving skill and will be able to find solutions to the problems related with nuclear physics. • Students will understand the importance of Nuclear power 	National

29	Quantum Mechanics and Relativity	P633	<ul style="list-style-type: none"> • To make the students understand the basic concepts of Quantum Mechanics and fundamental postulates of Relativity • To enable the students acquire the problem solving ability and to apply the Schrödinger's wave equation for the situation of different physical problems. 	<p>On completion of this course students will be able to</p> <ul style="list-style-type: none"> • Understand the wave nature of matter and demonstrate an understanding of the nature of the quantum mechanical wave function and its basic properties. • Interpret the wave function and apply operators to it to obtain information about a particle's physical properties such as position, momentum and energy. • Understand the basic principles of quantum mechanics and operator formulation of quantum mechanics. • Explain the concepts of frame of reference and inertial frames and state the fundamental postulates of Special theory of relativity. 	National
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30	Electrical Circuits and Networks	P634S	<ul style="list-style-type: none"> • To develop a skill towards designing and trouble shooting of electrical circuits • To introduce them to the various circuit analysis theorems • To develop an understanding of single phase and three phase AC • To impart a knowledge of Transformers and Motors to the students 	<p>On completion of this course, students will be able to</p> <ul style="list-style-type: none"> • Locate, identify and rectify faults in simple electrical circuits • Use electrical instruments skillfully • Explain the effects of shorts and opens in series and parallel circuits • Analyse an electrical circuit with the help of circuit theorems 	National
31	Basic Instrumentation	P635S	<ul style="list-style-type: none"> • To develop knowledge of principles and working of Analog and Digital Instruments used in the measurement of various physical quantities. 	<p>On completion of the course, the students will be able to understand</p> <ul style="list-style-type: none"> • The working principle of electrical and optical instruments used in the measurement of various physical quantities. • The measurements with a variety of instruments. 	Regional and national
32	Physics Revisited (Self Study Paper)		<ul style="list-style-type: none"> • Enabling the students to revise the concepts of mechanics, oscillations, waves, Black body radiation, thermodynamics, statistical physics, Quantum numbers, semiconductor devices 	<p>By the end of this course, the students should be able to</p> <ul style="list-style-type: none"> • Recollect and explain the various physics concepts they have studied in their curriculum. 	Regional and national

			and their applications, this would help them to perform better in competitive examinations.		
33	Physics in Everyday Life (Elective)	NPH603	<ul style="list-style-type: none"> • To provide insights about how much of everyday life is governed by physics principles. • To create an interest towards science 	On successful completion, the students will be able to Demonstrate an understanding of how physics is applied to real life situations	Regional and national

Name of the Programme: M.Phil Mathematics

M.Phil Graduates will be able to:

PO1: Demonstrate intense knowledge in their discipline.

PO2: Exhibit specialized skills to plan, analyze and draw conclusions related to their respective field of study in theory and in practice.

PO3: Develop expertise in their field of study through their research activities.

PO4: Prepare themselves to incorporate new ideas in their own discipline and obtain excellence in their area of specialization.

PO5: Develop social and ethical responsibility in the transfer and management of knowledge.

Programme Specific Outcomes

PSO1: Solid Foundation in Knowledge: Master of Philosophy degree in Mathematics is the culmination of in-depth knowledge of core branches of mathematics, viz. Algebra, Analysis, Topology, Differential Equations and other specialization areas. Thus, this programme helps students in building a solid foundation for further higher studies and research in Mathematics.

PSO2: Competency in Skills: The skills and knowledge gained has intrinsic beauty, which leads to proficiency in analytical reasoning, critical understanding, analysis and synthesis in order to solve theoretical and practical problems. This can orient students towards applications of mathematics in other disciplines and moreover, can also be utilized in modelling and solving real life problems.

PSO 3: Problem Solving: Students undergoing this programme learn to distinguish between essential and irrelevant aspects of problems. This helps them to learn behave responsibly in a rapidly changing interdependent society.

PSO4: Interdisciplinary and Research Skills: 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.

PSO 5: Proficiency in Employments: This programme will help students to enhance their employability in teaching mathematics in Schools, Colleges and Universities, various other jobs in public and private enterprise.

PSO: 6: Develop the ability to learn mathematics independently.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Analysis and Differential Equations	MAR110	To impart the Research Level Knowledge of the concept of the L^p -space and Banach algebra of L^1 . To solve the system of differential equations and study the Stability Properties of Dynamical Systems.	<ul style="list-style-type: none"> ➤ Produce rigorous proofs of results that arise in the context of L^p – spaces, L^p- space Convex functions and Inequalities, Approximations by Continuous Functions, Fourier Transforms and Holomorphic Fourier Transforms. ➤ Prove a selection of theorems concerning Denjoy-Carleman theorem, Paley and Weiner theorem, the Inversion Theorem, the Plancherel theorem. ➤ Solve System of Differential Equations of first order using 	Global

				<p>Phase portraits and methods of Linear Algebra.</p> <ul style="list-style-type: none"> ➤ Solve and apply stability properties of Non Linear Differential Equations. 	
2	Algebra and Topology	MAR111	<p>To impart the nuances of the Research Level Knowledge of the concept of Rings and Ideals, Modules, Modules of Fractions, Primary decomposition, Noetherian and Artin Rings. To become familiar with Homotopy, Covering spaces, Geometry of Simplicial Complexes and Bary Centric Subdivisions.</p>	<ul style="list-style-type: none"> ➤ understand and illustrate the concepts of Rings and Modules, Primary Decomposition, Noetherian and Artin Rings. ➤ understand and illustrate the concepts of Algebraic Topology. 	Global

B.Sc. Mathematics

Undergraduates will be able to:

PO1: Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment

PO2: Pursue higher learning programmes and become entrepreneurs

PO3: Recognize moral and ethical values and be socially responsible citizens in the society

PO4: Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.

PO5: Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings

PO6: Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.

PO7: Demonstrate communication skills both oral and written in personal and academic pursuits.

Programme Specific Outcomes

PSO1: Solid Foundation in Knowledge: Bachelor Degree in Mathematics is the culmination of in-depth knowledge of many core branches of mathematics, viz. Algebra, Calculus, Geometry, Differential Equations, Mechanics, Real and Complex Analysis including some related areas like Numerical Methods, Mathematical modelling, Operation Research, Probability and Statistics. Thus, this programme helps students in building a solid foundation for further higher studies and research in Mathematics.

PSO2: Competency in Skills: The skills and knowledge gained has intrinsic beauty, which leads to proficiency in analytical reasoning, critical understanding, analysis and synthesis in order to solve theoretical and practical problems. This can orient students towards applications of mathematics in other disciplines and moreover, can also be utilized in modelling and solving real life problems.

PSO 3: Problem Solving: Students undergoing this programme learn to logically question assertions, to recognize patterns and to distinguish between essential and irrelevant aspects of problems. This helps them to learn behave responsibly in a rapidly changing interdependent society.

PSO4: Interdisciplinary and Research Skills: 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.

PSO 5: Proficiency in Employments: This programme will help students to enhance their employability for Government jobs, jobs in banking, insurance and investment sectors,data analysis jobs, and jobs in various other public and private enterprise

PSO: 6:Develop the ability to learn mathematics independently.

PSO: 7:Learn about applications of mathematics in other fields and gain experience inmathematical modeling with spreadsheet and Operations Research.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Differential Calculus	M114	To develop problem solving skills in Calculus and provide base for higher mathematics.	To understand the maxima and minima of the function, understand the consequences of mean value theorem for differentiable functions, verify the Euler's theorem of homogeneous function, finding the curvature and evolutes of the curve in Cartesian and Polar coordinates, finding the Envelopes and Asymptotes of the curve.	Global
2	Algebra and Trigonometry	M115	To solve various types of algebraic equations, derive trigonometric identities and find real imaginary parts of complex trigonometric expression.	To find summation of various series, understand the importance of real and complex roots of the equation, obtaining the roots of the equation by various methods, understand the expansion of Trigonometric function, understand the relation between circular and hyperbolic function.	Global
3	Integral Calculus	M212	To develop problem solving skills in Calculus and provide base for higher mathematics.	To understand the techniques to solve the integration of Rational function, understand the techniques to solve the integration of Trigonometry function, applying the Bernoulli's formula to get the solution of the integral of the function, understand the concept of double and triple integrals, evaluation of double and triple integral by Beta and Gamma function.	Global

4	Differential Equations	M213	To help the learners to solve standard types of ordinary and partial differential equations	To understand the genesis of ordinary as well as partial differential equations, to learn various techniques of getting exact solutions of certain solvable firstorder differential equations and linear differential equations of second order, to learn about solution of first order linear partial differential equations usingLagrange's method, to know how to solve second order linear partial differential equations withconstant coefficients, to formulate mathematical models in the form of ordinary differential equations and to get the solution of the problem, development of Fourier Cosine and Fourier Sine series.	Global
5	Vector Calculus	M313	To develop deep understanding of key concepts followed by problems of applied mathematics, which are essential tools of modern applied mathematics.	To understand the definition of Scalar and Vector point's functionsand find the directional derivative of a Scalar point function, find the solenoidal and irrotational of the vector point function, to evaluate the line integrals, surface integrals and volume integrals, inter-relationship among the line integral, surface integral and triple integral formulation, to verify Greens', Gauss and Stokes theorem.	Global

6	Solid Geometry and Fourier Series	M314	To make the students understand the basic concepts in two dimensional, three dimensional geometry, Fourier series and Fourier transforms and students should be able solve problems in these fields of study.	To relate between plane and straight line in 2d and 3d, to relate two dimensional, three dimensional geometry and solve problems in these areas, to analyze the uses of solid geometry in different scientific fields, to solve ODE using Laplace transforms, to do problems in Fourier transforms, to understand the definition of Fourier transform and its properties and convolution theorem and solving problem by Fourier transform.	Global
7	Numerical Methods	M413	To introduce the scientific computation techniques to the students.	To obtain numerical solution to algebraic and transcendental equation, to find numerical solutions of system of linear equations and to check the accuracy of the solution, to learn about various interpolating and extrapolating methods to find numerical solution, to understand the concept of numerical differentiation, to evaluate the integrals by using Trapezoidal and Simpson's formula.	Global

8	Algebraic Structures – I	M414	To acquire the knowledge of basic concept of some of the fundamental algebraic structures on Groups and Subgroups, Permutation Groups, Normal Subgroups and Factor Groups and Group Homomorphisms.	To learn about the fundamental concept of groups, subgroups and related theorems, to learn about the concept of cyclic and permutation group and its properties, to learn about the isomorphic theorem and Lagrange's theorem, to understand the concept of external direct products and its properties, to understand the concept of finite abelian group and properties of homomorphism .	Global
9	Real Analysis I	M534	To study the real number system, point set topology, limits and continuity, derivatives of real-valued functions.	To understand the basic properties of real number system such as least upper bound properties and Archimedean properties, to understand the concept of open set, closed set, connected sets, continuous set adherent points and accumulation points, to identify the continuity of a function, to learn famous theorems such as Bolzano's theorem and Fixed point theorem, to understand the concept of derivatives of real valued function and related theorems like Rolle's theorem, Mean value	Global

				theorem and Taylor's formula.	
10	Algebraic structures II	M535	To acquire the knowledge of basic concept of some of the fundamental algebraic structures on Rings and Integral Domains, Ideals, Factor Rings and Polynomials.	To analyze and demonstrate examples of ideals and factor rings, to learn the concepts of isomorphism and homomorphism for groups and rings, to understand the various canonical types of groups (including cyclic groups and groups of permutations) and canonical types of rings (including polynomial rings and modular rings).	Global
11	Mechanics	M536	To introduce the study of the motion of particles or bodies under the influence of forces and to provide a basic knowledge of behavior of objects in motion.	To know the fundamental concepts of Kinematics, To have a clear understanding of Forces on a rigid body, To know about frictional forces and their applications, To have proper understanding of Rectilinear motion under varying forces, To know about Simple Pendulum and Seconds Pendulum.	Global

12	Probability and Statistics	M537	To develop the statistical concepts and introduce the techniques of analysis and inference used for research in social and life sciences.	To understand the basic concepts of probability and various probabilities, knowledge related to concept of discrete and continuous random variable and their probability distribution, understand the concept of expectation and generating function and their properties, knowledge of important discrete and continuous distributions such as Binomial, Poisson, normal, uniform and gamma distribution, calculate the correlation coefficient, rank correlation and fitting of regression lines by least square method.	Global
13	Number Theory(SEC)	M545A	To study the divisibility, primes, congruence's and arithmetic functions in number theory.	To Know the basic concepts divisibility, primes, congruences and to solve simple problems in number theory.	Global
14	Mathematical Modeling(SEC)	M545B	To discuss the mathematical modeling through difference equations, differential equations, calculus of variations and dynamical programming.	To create mathematical models of empirical or theoretical phenomena in domains such as the physical, natural or social science, to take an analytical approach to problems in their future endeavours, assess and articulate what	Global

				type of modeling techniques are appropriate for a given physical system, make predictions of the behavior of a given physical system based on the analysis of its mathematical model, recognise the power of mathematical modelling and analysis and be able to apply their understanding to their further studies.	
15	Graph Theory(SEC)	M545C	To study the basic concepts of Graph Theory such as Trees, planarity, Coloring, directed graphs and know the applications to Travelling Salesman Problem, teleprinter's problem, maximum network flow and arborescence.	To appreciate the definition and basics of graphs along with types and their examples , understand the definition of a tree and types of tree, understand the notation of planaring and coloring of a graph, know the definition of directed graphs and types of digraphs, to relate the graph theory to the real world problem.	Global
16	Mathematics for Competitive Examinations-I	NMA504	To prepare the students for competitive examinations	To approach competitive examinations with less anxiety and fear.	National

17	Mathematical Aptitude –I Mathematical Competence Course	SSP	To prepare the Students for Competitive Examinations	Students face the competitive examinations with more Aptitude skills and techniques	National
18	Mathematical Modeling with Spreadsheet	CC	To prepare the students to work on spreadsheets	Students acquire skills on modelling techniques , to enhance the links between mathematics, technology and other sciences in order to enhance the power of mathematics for the simulation of physical phenomena with the help of mathematical modeling techniques with spreadsheet.	National
19	Linear Algebra	M636	To study the transformations, Matrices, Systems of Linear Equations, Determinants and Diagonalization in Vector Space.	Concept of dimension of a vector space, Linear transformation between vector spaces, finding a matrix representation for the linear transformation	Global
20	Real Analysis – II	M637	To study on infinite series, test of convergence, sequence of functions, uniform convergence and power series.	To understand many properties of the real line and that of sequence and infinite series, to apply the ratio, root, alternating series and various tests to determine convergence and absolute convergence of an infinite series of real numbers, to learn some of the properties of rearrangement of series, and its infinite products, to assimilate the notions of	Global

				point-wise and uniform convergence of a sequence of functions, to familiarize with the concept of power series and its related results.	
21	Complex Analysis		Upon completing this course the students will be able to use C-R equations to test for analyticity and compute a derivative, work with standard complex functions (mapping properties, derivatives), compute contour integrals using definition and Cauchy integral theorems, compute Taylor and Laurent series expansions of functions and apply the Residue theorem in the evaluation of integrals.	To understand the significance of differentiability and analyzing of complex function leading to the Cauchy-Riemann equations, to understand the concept of conformal mapping and cross ratio and fixed points of bilinear transformation, to learn the role of Cauchy theorem and Cauchy integral form in evaluation of contour integrals, apply Liouville's theorem in fundamental theorem of algebra , to learn Taylor and Laurent series expansion of analytic function, to classify the nature of singularities, poles and residues and application of Cauchy residue theorem.	Global
22	Resource Management Techniques	M639	To know the origin and development of Operations Research. To develop the skill of formulation of LPP and different techniques to solve it. To know the applications of	To assimilate the concepts involved in solving linear programming problems which are widely used in business operations, to incorporate mathematical techniques used in optimizing	Global

			<p>Transportation and Assignment problems. To study the optimizing problems in Game theory, Networking and Inventory control.</p>	<p>transportation and assignment problems, to be familiar with solving of job sequencing problems, to learn the basic concepts involved in maintaining inventory and controlling them effectively in business, to apply mathematical techniques to scheduling and networking of projects and calculating the probability of their completion in time.</p>	
23	<p>Mathematical Statistics</p>	<p>M640</p>	<p>To apply statistical techniques for interpreting and drawing conclusion for business problem.</p>	<p>To calculate the partial and multiple correlation coefficients for three variables, time series data, its applications to various field and components of time series, fitting of trend by moving average method, Measurement of seasonal indices by ratio and trend, ratio to moving average methods, concept of random sample from a distribution, sampling distribution of a static, standard error of important estimates sums, means and proportion, carry out one way and two way analysis of variance, testing of goodness of fit and test of independence.</p>	<p>Global</p>

24	Mathmeetical Competence Course	SSP	To train the students to acquire knowledge for appearing/ Preparing NBHM and all India PG entrance exams other competitive exams.	To have indepth knowledge on Analysis, Algebra, Calculus, Matrix and Vector Analysis for facing all competitive and entrance exams	National
25	Mathematical Aptitude - II	SSP	To prepare the Students for Competitive Examinations	Students face the competitive examinations with Aptitude skills and techniques	National
26	Mathematics for Competitive Examinations – II	NMA603	To prepare the students for competitive examinations	Students are well equipped to face all types of competitive examinations	National
27	Scilab for Competence Course	CC	To acquire the practical knowledge of solving matrix, polynomials and differential equations	Students learn to compete with more practical knowledge of solving problems in matrices using scilab, solving simple problems in ODE and PDE	National

SACRED HEART COLLEGE (AUTONOMOUS) TIRUPATTUR
DEPARTMENT OF COMMERCE

Name of the Programme: M Phil Commerce

Programme Relevance

The M Phil Commerce Programme includes the area of studies such as Finance, Marketing, Human Resource and other branches in Business Studies. This course prepares students to achieve methodological competencies in the selected field. The course curriculum comprised of classroom teaching, seminars, presentations, case studies etc. the students would teach knowledge skills such as Planning, Designing, Engaging, and interpreting data for problem-solving questions.

Programme Outcomes

- After finishing the programme, M Phil Commerce graduates may work in job roles such as Assistant Professors, School Teachers and Research Assistants in various projects.
- Learner will be competent to pursue Doctoral degree (PhD) in Commerce and Business Studies.

Programme Specific Outcomes

- The Curriculum will equip the learner to seek for higher disciplinary and methodological competencies in Business research.
- Learners will be able to do advance research courses like PhD in the field of Commerce and Business Studies.
- M Phil Graduates facilitate e- learning platforms with the ICT tools and it will be able to make scholars to be proficient with relevant technologies to teach Commerce.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	RESEARCH METHODOLOGY	COR110	<ul style="list-style-type: none"> • To introduce to the student the basic concept of Research Methodology. • To highlight the need for Research in the Social Science. • To equip the student with tools for doing Research. 	<ul style="list-style-type: none"> • Students will acquire basic skills in designing research studies and selecting appropriate methodologies. • They will be familiar with common data collection methods such as surveys, interviews, and observations, and understand their applications. • Students will gain basic knowledge of statistical analysis and its relevance in social science research. 	National
2	GENERAL SKILLS ON TEACHING AND LEARNING	COR111	<ul style="list-style-type: none"> • To enhance the employability of Student-Teachers by empowering them with soft Skills. • To help them understand method of instructions, class room management and Professional Development. 	<ul style="list-style-type: none"> • empowering student-teachers with soft skills, understanding methods of instruction, classroom management, and professional development 	National

Name of the Programme: M.Com

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	ADVANCED FINANCIAL ACCOUNTING	C722	<ul style="list-style-type: none"> • To discover knowledge on the admission and retirement of partners. • To differentiate the books of Old Firm and the New Firm on the basis of joint life policy. • To interpret the applications of Garner Vs Murray at that time of dissolution of firm. • To summarizing the accounting problems in relating to Amalgamation, absorption and reconstruction of companies • To construct and summarized the knowledge on liquidators final statement 	<ul style="list-style-type: none"> • Discover knowledge on new profit sharing ratio, revaluation of assets and liabilities, adjustment of goodwill at that time admission, retirement and death of partners. • Illustrate the calculation of deceased partners' share of profit and treatment of Joint Life Policy in the books of Old Firm and the New Firm. • Experiment the unrecorded Assets and Liabilities with the application of Garner Vs Murray at that time of dissolution of firm. • Summarizing the accounting problems in relating to Amalgamation, absorption and reconstruction of companies. • Construct and summarized the knowledge on various payments, calculation of liquidators remuneration and preparation of liquidators final statement 	National

2	STRATEGIC HUMAN RESOURCE MANAGEMENT	C723	<ul style="list-style-type: none"> • To demonstrate the Human Resource Outsourcing concept and the emerging issues in Human Resource Management. • To exhibit specialised knowledge on Business Strategy and Human Resource Planning. • To develop expertise in the field of new trends in Recruitment and different forms of Training in the Organisations. • To prepare themselves in understanding the techniques of Performance Appraisal and followed with its Reward System. • To inculcate the acquaintance on Mentoring programmes applied in the Organisations and also the concept of e-HRM 	<ul style="list-style-type: none"> • Enhance their knowledge on Human Resource Outsourcing and recent issues in Human Resource Management. • Construct the ideas relevant to business Strategies that are adopted in HRM, through the dimensions of Job Analysis. • Enumerate the different forms of recruitment systems in the commercial organisations especially through internal and external sources. • Interpret the various career growth opportunities in commercial industries, by understanding the performance appraisal and rewards systems. • Discover the recent developments in the HRM, like Mentoring Programmes, E-HRM, Human Resource Information System, etc. 	National
3	CONSUMER BEHAVIOR	C724	<ul style="list-style-type: none"> • To make a students to understand the different dimation of consumer behavior, • To help students learn various models of consumer behavior. • To illustrate the various models of consumerism. • To discover knowledge on group dynamics of consumer. 	<ul style="list-style-type: none"> • Understand the factors influencing consumer buying behaviour and consumer process. • Discover the knowledge of various buying behaviour models and how the models are inspiring the consumers. • Evolution of Consumerism, Consumer Exploitation in India , 	National

			<ul style="list-style-type: none"> To analyse Consumerism and to measure the customer satisfaction 	<p>Major Problems of Consumers Exploitation and the knowledge on consumer protection Act 1986.</p> <ul style="list-style-type: none"> Discover knowledge on the role of group members and how the group members plays vital role in promotion of new products. Analyse and strive to identify the customer satisfaction at various level 	
4	ADVANCED BUSINESS STATISTICS	C725	<ul style="list-style-type: none"> To Make the students to understand the correlation between variables. To Acquire knowledge in theory of probability To Educate the students to learn procedure for selecting sample and to importing knowledge on the testing of hypothesis. To test the goodness of fit and testing homogeneity of variables. To Enhance practical applications of testing equality of population variances 	<ul style="list-style-type: none"> Understand the basic concepts in Research in Social Sciences and business enquiry . Retrieving the theory of probability in Binominal and Poison Distribution. Analyze and develop the skills for scientific collection of data and determining the sample size for research. It creates awareness among students with regard to the various statistical tools and test of significance that are applied in social and business research Experimenting the one way and two way Analysis of Variance (ANOVA) for the applications of testing equality of population variance 	Global

5	ADVANCED MANAGEMENT THEORY	C726A	<ul style="list-style-type: none"> • To enable students to understand the global business environment. • To enhance the knowledge in information technology and its impact on management. • To emphasis the students understand the trends in outsourcing. • To build knowledge on strategic management • To explore the contemporary issues and ideas on Leadership 	<ul style="list-style-type: none"> • Explain the cultural ethical environment at global level and its effects of management practices of total quality management. • Discover knowledge in Web based and Internet based Business Operation • Exhibit the methods of outsourcing and global trends in Outsourcing • Apply knowledge on measuring effectiveness of strategy and knowledge management. • Evaluate the leadership for Global Business Operation and gender equity in organisations 	National
6	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	C726B	<ul style="list-style-type: none"> • To understand about the securities market and its governing authorities. • To enhance the understanding of Securities Market • To develop the knowledge about fundamental analysis • To impart the knowledge on Risk and Return Analysis and Theories (Arbitrage and CAPM) • To inculcate the depth understanding about the derivative market 	<ul style="list-style-type: none"> • Have an overview about the securities market and its governing authorities. • Give the enhanced knowledge about the securities market and related matters • Explain the various dimensions of fundamental analysis • Appreciate the testing of Risk and Return Analysis and Portfolio Theories • Comprehend the investment avenues in derivative markets 	National

7	BUSINESS ETHICS	C726C	<ul style="list-style-type: none"> • To introduce the meaning of personal ethics, business ethics, concepts of business ethics, benefits of business ethics, characteristics of business ethics and relationship between law and Moral standard. • To discuss the meaning, growth, scope and emerging challenges in human resource management and ethical issues in human resource management. • To understand the ethical issues in marketing strategy, marketing mix, consumerism and protection of consumers related welfares. • To learn ethical issues in financial marketing, financial service industries, frauds in banks, insurance sectors and non life insurance sector. <p>To teach meaning, importance and advantages of Corporate Social Responsibility and steps to attainment of CSR.</p>	<ul style="list-style-type: none"> • Students will remember the basic concepts, theories and characteristics of business ethics. • Students will understand the meaning, growth, scope and emerging challenges in human resource management and ethical issues in human resource management. • After studying these unit students analyze the ethical issues in marketing strategy, marketing mix, consumerism and protection of consumer related welfares. • The student will be able to analyze various ethical codes in corporate governance • Students will evaluate the ethical issues in financial marketing, financial service industry, frauds in banks, insurance sectors, non life insurance sector when they go for work and Students will create new methodologies/ strategy in solving ethical problems in business and business related ethical issues. 	National
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8	ACCOUNTING FOR MANAGERIAL DECISION MAKING	C823	<ul style="list-style-type: none"> • To enable students to acquire sound knowledge of concepts, methods and techniques of management accounting and to develop competence with their usage in managerial decision making control. • To analyse the operational efficiency by comparison of present ratio with those of the past working and also with those of other firms in the industry. • To ascertain various sources from where the funds were raised and the specific manner in which they were utilized between the dates of the two Balance Sheet. • To defend the importance of linking an organisations budget with its strategic plan. • To determine profitability at different level of production and sales. 	<ul style="list-style-type: none"> • Identify and describe factors that influence the effectiveness of decision making. • Validate or disprove the financing, investment and operating decisions of the firm. • Analyze the financial position of a company and to discuss the usefulness and format of the statement of cash flow • Understand how budget and variances are used to control operations. • Determine the structure of short run production based on the relation among total, average and marginal products. 	National
9	ADVANCED COST ACCOUNTING	C824	<ul style="list-style-type: none"> • To provide knowledge of Operation costing. • To make students to understand the Process Costing. • To enrich the various methods relating to job, service, batch and contract costing • To make clear about 	<ul style="list-style-type: none"> • Recall the knowledge of transport, hospital, power and hotel Operation costing. • Identifying and experimenting the process costing for normal, abnormal loss or gain. • Infer the various method methods of cost allocation to joint products and valuation of 	National

			<p>Reconciliation of cost and Financial Accounting.</p> <ul style="list-style-type: none"> To equip knowledge on Standard Costing and Variance Analysis 	<p>By-products.</p> <ul style="list-style-type: none"> Formulate reconciliation statement Reconciliation of cost and Memorandum reconciliation statement account. Evaluate Standard Costing and to make comparison between estimated cost and standards. 	
10	RESEARCH METHODOLOGY	C825	<ul style="list-style-type: none"> To develop an idea about various research designs and techniques To understand sampling techniques of research and its applications To emphasize the learners in the usage of appropriate tools of data collection in research To make the learners to understand the applications of SPSS To lay foundation to become familiar in style of preparing research report 	<ul style="list-style-type: none"> Explain the basic concepts in Research in Social Sciences and business enquiry Develop the skills for scientific collection of data and determining the sample size for research. Able to understand the application of appropriate tool for data collection and to test the validity and reliability of research tools Create awareness among students with regard to the various statistical tools and test of significance that are applied in social and business research Write a research report and dissertation 	Global developmental needs

11	QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS	C826	<ul style="list-style-type: none"> • To demonstrate the Linear Programming Problem with Mathematical Formulation, Graphical Method and Simplex Method. • To exhibit specialised knowledge on Transportation Problem with North West Corner, Least Cost and Vogel's Approximation Methods. • To develop expertise in the field of Assignment Problem by using Hungarian Method and also by using Traveling Salesman concept. • To prepare themselves in understanding the techniques of Inventory Control with various cost concepts. • To inculcate students, the awareness on Network Scheduling problems by using PERT and CPM Techniques. 	<ul style="list-style-type: none"> • Enhance their knowledge on Linear Programming Problem (L.P.P) models through Mathematical, Graphical and Simplex Methods. • Horizon their knowledge in the Transportation Problem by applying North West Corner, Least Cost and Vogel's Approximation methods. • Experiment the Assignment Problem which can be solved by using Hungarian method. • Evaluate the knowledge on various cost concepts involved in the manufacturing industries, by using the inventory control techniques. • Formulate the basic Network Scheduling Model, by using PERT and CPM techniques. 	National
12	ENTREPRENEUR IAL DEVELOPMENT	C827A	<ul style="list-style-type: none"> • To enable the students to understand the concept of entrepreneurship and to learn the professional behaviour on entrepreneurship • To create the awareness about women entrepreneurs and of their 	<ul style="list-style-type: none"> • Obtain knowledge of concepts, functions of entrepreneur. • Enumerate significant changes and trends which create business opportunities and to analyze the environment for potential business opportunities 	National

			<p>empowerment</p> <ul style="list-style-type: none"> • To identify, develop and incubating successful business ideas • To analyse and create project formulation. • To identify the various financial institutions and promotional institutions to entrepreneurs at National and State level. 	<ul style="list-style-type: none"> • Develop successful business ideas • Analyse and create project formulation • Identify the various financial institutions and promotional institutions to entrepreneurs at National and State level. 	
13	INDIRECT TAXATION	C827B	<ul style="list-style-type: none"> • To acquire knowledge on indirect tax system • To gain knowledge on GST and procedures. • To provide a practical perspective of GST Returns. • To identify and analyze online filling GST • To Understand the Customs Act 	<ul style="list-style-type: none"> • Gain knowledge on Indirect Tax system • Acquire knowledge on GST • Assess the registration procedure in GST • Aware of GST E return filling details • Understand the Customs Act 	National
14	COMMERCE AND COMPUTERISED ACCOUNTING	C827C	<ul style="list-style-type: none"> • To establish the knowledge on E-Commerce and E-Business along with its process, potentials, driving forces and regulatory aspects. • To exhibit specialised knowledge on Electronic Data Interchange and Internet Trading Relationships for the betterment of Supply Chain Management. • To develop expertise in the field special features required for the 	<ul style="list-style-type: none"> • Enhance their knowledge on E-Commerce along with its re-engineering process, potential benefits, driving forces and regulatory aspects. • Improve the knowledge on the benefits and drawbacks of Electronic Data Interchange (EDI) system and Internet Trading Relationship business. • Understand the mechanism followed in the Electronic 	Global developmental needs

			<p>Electronic Payment System and different forms of e-payment.</p> <ul style="list-style-type: none"> • To make the students to appreciate the differences between Manual Accounting vs. Computerised Accounting. • To enable the students to prepare the statements of accounting and cash flow statements in the computerised format. 	<p>Payment System and also they will learn E-cash, E-Cheque and currency servers.</p> <ul style="list-style-type: none"> • Acquaint their knowledge on the computerised accounting through the process of creating company, grouping of accounts, creation of ledger, etc. • Develop their knowledge on the preparation of computerised statements like Day Book, Trial Balance, Cash Flow statements, etc. 	
15	STUDY PAPER I SERVICES MARKETING	C829SP1	<ul style="list-style-type: none"> • To understand the conceptual framework of service marketing. • To examine the concept of physical evidence and capacity planning. • To analyse and identify the various factors affecting the pricing decision. • To reflect and enumerate the dimensions of quality • To enhance the marketing skills of students on various services. 	<ul style="list-style-type: none"> • Understand the basics of service marketing and service marketing mix • Comprehend the guidelines for physical evidence and manage the capacity and match demand • Apply the pricing strategy and determine the appropriate price for the service • Evaluate the dimensions of quality and causes of Gaps. • Integrate the service marketing skills on various service sectors. 	National and global developmental needs
16	ADVANCED CORPORATE ACCOUNTING	C927	<ul style="list-style-type: none"> • To enable students to acquire sound knowledge on Holding Company Accounts, • To accumulate knowledge on legal provision related to Banking Company Accounts and to learn 	<ul style="list-style-type: none"> • Accumulate the practical knowledge on consolidation of holding company and its subsidiary Ltd. • Apply the Schedules for Profit and loss account and the legal provisions involved in the 	National

			<p>the advantages of schedule system for the preparation of final accounts.</p> <ul style="list-style-type: none"> • To ascertain various forms of insurance and insurance business and also it brings the knowledge on IRDA regulation in related to Final accounts. • To analyse the importance inflation accounting and price level accounting. Accumulating the gaining knowledge on Methods or Techniques of Price Level Accounting. • To identify the significance of corporate social responsibility through human resource accounting and its responsibility towards staff and to the society. 	<p>preparation of Final Accounts</p> <ul style="list-style-type: none"> • Analyze various schedules of Insurance company's business transactions and to execute the guidelines of IRDA • Appraise and to recall the value of accounting methods adopted in identifying price level changes. • Understand the concept of Human Resource Accounting and Corporate Social Responsibility 	
17	ORGANIZATION AL BEHAVIOUR	C928	<ul style="list-style-type: none"> • To understand the concept of Organisational behaviour and make use of various approaches of Organisational behaviour • To identify biographical and learned characteristics in the formation of individual behaviour • To discover how perception, values and attitudes affects individual behaviour • To learn the classifications of group and to develop group performance also study about 	<ul style="list-style-type: none"> • Acquire the knowledge on the concept of Organisational behaviour, its applications in the global scenario • Evaluate the factors which affect individual behaviour like ability, personality and learning. • Determine the perceptual selectivity and contribution of values and attitude in forming individual behaviour. • Classify group to improve group performance and to evaluate the 	National

			<p>stress and conflict management</p> <ul style="list-style-type: none"> To evaluate the impact of organisational climate and organisational culture 	<p>causes of stress and conflict and strategies to overcome it.</p> <ul style="list-style-type: none"> 5. Compare the impact of various organisational climate and culture on the organisational performance. 	
18	INCOME TAX AND TAX PLANNING – I	C929	<ul style="list-style-type: none"> To provide the basic knowledge of Income Tax Law. To understand the Income tax authorities, TDS and e-filing procedures. To apply the provisions of Income Tax Act in the computation of taxable income from salary. To impart knowledge in computing taxable income under the head house property. To enable the students to compute the taxable income from business and profession. And To make the students to understand the importance of tax planning. 	<ul style="list-style-type: none"> Acquire knowledge of the basic provisions of Income Tax Act Understand with provisions of Income Tax Act on filing of return, Advance tax and TDS Assess the taxable income from salary during the service and after retirement by applying the concepts of tax planning. Anticipate the taxable income from house property and plan the tax liability on income from house property. Integrate the concept of tax planning under the head business and profession and minimise the tax liability. 	National
19	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	C930A	<ul style="list-style-type: none"> To enable the students to understand the importance and aims of logistics and its current trends. To make aware of the various stages of planning and strategies involved in the logistics process. To evaluate the methods of measuring various activities of 	<ul style="list-style-type: none"> Understand the importance and aims of logistics in current trends Bring out the stages of planning and strategies of various activities in logistics. Evaluate the various activities of logistics adopted in the organisations. 	Global developmental needs

			<p>logistics adopted in the organisations.</p> <ul style="list-style-type: none"> • To appreciate the concepts of supply chain management and application of IT on the same. • To analyse the techniques involved in e-financial supply chain management in the bank's perspective. 	<ul style="list-style-type: none"> • Analysing various modern financial supply chain management. • Applying the concepts of supply chain management with help if IT in supply chain management 	
20	EXECUTIVE SKILLS DEVELOPMENT	C930B	<ul style="list-style-type: none"> • To enable the student to know himself and to develop Executive personality • To equip the students with some basic communication skills • To train students to understand themselves and develop better personality traits. • To enable students understand the different types of complexes, inter personal relationships and develop a positive attitude towards Life. • To train and enable students to develop their executive personality skills for better employment opportunities. And to train students to develop their interview skills, and develop team skills and impart communicative skills such as reading, listening and speaking. 	<ul style="list-style-type: none"> • Understand their inner personality and identify various character traits in life. • Various complexes existing in the society and understand the various inter personal relationships. • Develop a keen sense of interest in developing their entrepreneurial skills. • Become more adopt in communication • More skillful in nonverbal communication. 	National

21	STRATEGIC MANAGEMENT	C930C	<ul style="list-style-type: none"> • To inculcate the basics of strategic management. • To know about Industry Analysis. • To understand how to analyse the company and the components involved in the process. • To summarize the strategies practised by the management. • To impart Change Management 	<ul style="list-style-type: none"> • Enhance their knowledge in Strategic Management and implementing and evaluating the practices. • Understand the industry analysis in Macro and Micro environment. • List out the strategies practiced by the management. • Analyse the company's strength and weakness. • Interpret the change management and Response Options. 	National
22	ADVANCED FINANCIAL MANAGEMENT	C1022	<ul style="list-style-type: none"> • To enable students to acquire knowledge on concept of Financial Management and identify the sources of finance. • To understand the factors affecting financial planning, over and under capitalization and to ascertain the leverage of the firm. • To examine the factors affecting capital structure by applying various theories of capital structure. • To calculate cost of capital on debt, preference share capital, equity share capital and retained earnings. • To evaluate the concepts of dividend policies adopted by the corporate in the process of pay- 	<ul style="list-style-type: none"> • Understand the concept of Financial Management and analyse the sources of Finance • Evaluate Financial planning and impact of under and over capitalization and also ascertain leverage of firm • Analyse capital structure and implement theories of capital structure • Estimate Cost of debt, preference share capital, Equity share capital and retained earning • Describe the concept of dividend and computing dividend based on relevance and irrelevance theories. 	National

			out and retention.		
23	LEGAL ASPECTS OF BUSINESS	C1023	<ul style="list-style-type: none"> • To help the students to get acquainted with IT, Intellectual Property Rights, Patent Act and Copyrights Act. • To help to understand FEMA Act and various provisions of the Act. • To analyse various problems of environment and taking prevention and controlling measures of environment • To Illustrate various rights and provision of Consumer Protection Act • To determine various provisions of Competition Act 	<ul style="list-style-type: none"> • Understanding the IT act, Intellectual Property Rights, Patent Act, Copyrights Act. • Inculcating various provisions of FEMA act. • Analising various problems of environment and taking prevention and controlling measures of environment. • Applying any one rights of Consumer Protection Act. • Evaluating the competitions between the companies by examples. 	Global
24	INCOME TAX AND TAX PLANNING – II	C1024	<ul style="list-style-type: none"> • To impart knowledge on provisions related to assessing the taxable capital gain. • To understand the rules on taxability of other incomes and minimise the taxable income through set-off and carry forward of losses. • To develop ideal model of investments and savings based on the concepts of deductions, and to minimise the taxable income of individual. • To acquire knowledge on taxability of income of companies 	<ul style="list-style-type: none"> • Understand with the provisions on computation of taxable capital gain and plan the investments to claim exemption under capital gain. • Familiar with the provisions of Income Tax Act on Income from other source and apply the provisions to adjust the loss under various heads of Income. • Assess the taxable income and anticipate the tax liability • Minimise the tax liability under the concepts of tax planning and deductions. 	National

			<p>and minimum alternate tax.</p> <ul style="list-style-type: none"> To minimise the tax liability without tax evasion and through in-depth knowledge on deductions and tax planning 	<ul style="list-style-type: none"> Compute the taxable income of company and their tax liability. 	
25	INTERNATIONAL BUSINESS	C1025	<ul style="list-style-type: none"> To demonstrate the classifications of international business and the important factors influencing the international business. To exhibit the specialised knowledge on the export and import documentation methods and procedures along with the policies of India. To develop expertise in the field of international trading organisations (like IMF, WTO, UNCTAD, etc) and its roles and functions on international trade. To prepare themselves in understanding the concept, strategies and technologies of Multi-National Companies and its management in international marketing. To inculcate the knowledge on the association between foreign collaborations (including joint ventures) and international trade. 	<ul style="list-style-type: none"> Enhance their knowledge on the classifications and the most important factors influencing the international business. Construct the ideas relevant to export and import documentation methods and procedures along with the policies of India. Enumerate the different international trading organisations (like IMF, WTO, UNCTAD, etc) and its roles and functions on international trade. Understand the concept, strategies and the technologies of Multi National Companies and its management in international marketing. Inculcate the knowledge on the association between foreign collaborations (including joint ventures) and international trade. 	Global
26	INTERNATIONAL MARKETING	C1026A	<ul style="list-style-type: none"> To study and gain the knowledge on international marketing 	<ul style="list-style-type: none"> Enhance their knowledge on International marketing concepts 	Global developmental

			<ul style="list-style-type: none"> • To make the students to understand the international marketing environment • To develop International marketing strategies • To evaluate the various international marketing channels and physical distribution management • To acquire knowledge on branding, pricing policies and their promotion in the international markets. 	<ul style="list-style-type: none"> • Evaluate International marketing environment on the basis of policies, legal, technology, business factors • Create International marketing strategies for exporting product • Appraise International marketing channels strategies and physical distribution management • Assess International pricing and promotional policy assistance and incentives 	needs
27	BANKING AND FINANCIAL SERVICES	C1026B	<ul style="list-style-type: none"> • To have the comprehensive knowledge of modern functions rendered by the banks. • To make the students to familiar with Retail Banking, Provisions of Non-performing Assets and Capital Adequacy Norms. • To explore in Merchant Banking, its services, SEBI guidelines to Merchant Banking and Depository Receipts • To inculcate the in-depth understanding on Leasing and Factoring • To evaluate and analyse the various modes of Mutual Fund and Venture Capital. 	<ul style="list-style-type: none"> • Have an knowledge about ATM, debit card, credit card, Online banking, mobile banking, EFT, ECS, RTGS and NIFT • Discover knowledge in Retail Banking and its Provisions relating to Non-performing Assets, Capital Adequacy Norms. • Comprehend the Merchant Banking, services rendered by Merchant Banking, SEBI guidelines to Merchant Banking and Depository Receipts • Discover the Leasing, Hire Purchase Agreement and Factoring • Analyse and develop the knowledge in the area of mutual fund and venture capital schemes. 	National

28	PROJECT MANAGEMENT	C1026C	<ul style="list-style-type: none"> • To study on the concept of project management and role of project manager • To identify investment opportunities and to formulate project • To evaluate various appraisals of project • To prepare project plan, its schedule and estimation of the cost of project • To manage and execute project and learn to apply control techniques 	<ul style="list-style-type: none"> • Acquire the knowledge on project management and role played by project manager • Analyse investment opportunities and formulate project • Evaluate market, technical, financial, commercial and managerial appraisals of project • Construct the plan and schedule for project and able to estimate the cost of project • Develop and execute the project and also apply various controlling techniques like PERT, CPM 	National
29	PROJECT	C931J	<ul style="list-style-type: none"> • To demonstrate the objectives, hypothesis, scope, problems and limitations of the research work carried on the project. • To exhibit specialised knowledge on the review of literature of a research work based on the project. • To develop an expertise on the research methodology and on the source of collection of information. • To make them understand the techniques of data analysis and interpretation using relevant statistical tools. 	<ul style="list-style-type: none"> • Enhance their knowledge on developing the Objectives, Scope, Problems and Limitations of a research work. • Construct the ideas relevant to the review of literature of a research work, by studying the previously done articles or research works. • Enumerate the different components of research methodology (like design, sample size, sampling, etc.) of a research work or a project work. • Interpret the data that were collected by them for their research work and analyse them 	National

			<ul style="list-style-type: none"> To enumerate the findings, suggestions and conclusions based on the objectives and hypothesis relevant to the subject of the research work. 	<ul style="list-style-type: none"> Discover the findings of the study of a particular research work and could able to give suggestions and conclusions of that research work. 	
30	BUSINESS PROCESS MANAGEMENT	C1028SP1	<ul style="list-style-type: none"> To understand Organizations, Community and Organizational Structure. To identify Organizational Structure Organizational Design To discover Power and Power Outcomes of Leadership To learn Elements of Business Intelligence Applications To evaluate Process of Measurement for Learning and Improvement. 	<ul style="list-style-type: none"> Acquire the knowledge on the Organizations, Community and Organizational Structure Evaluate the Organizational Structure Organizational Design Discover the Power and Outcomes of Leadership Understand elements of business Intelligence Applications Measurement for Learning and Improvement of management Process 	National
31	INCOME TAX PLANNING	C1028SP2	<ul style="list-style-type: none"> To provide the basic knowledge of Income Tax Law. To understand the Income from salary. To impart knowledge in perquisites. To enable the students to understand Gratuity and Commuted pension. To make the students to gain knowledge on Tax planning and TDS 	<ul style="list-style-type: none"> Acquire knowledge of the basic provisions of Income Tax Act Assess the taxable income from salary during the service and after retirement by applying the concepts of tax planning. Impart knowledge in perquisites, Profits in lieu of salary and Provident Fund. Anticipate and to find-out the Gratuity and Commuted pension. Understand with provisions of 	National

				Income Tax Act on filing of return, Advance tax and TDS.	
32	EXPORT AND IMPORT MANAGEMENT	C1028SP3	<ul style="list-style-type: none"> • To understand the basic concepts of international trade environment. • To acquire knowledge on export - import procedures and transactions. • To Learn the Day to Day Accounting for exports and imports • To understand the needs EXIM policy and EXIM Bank. • To import knowledge on Special Economic Zone. 	<ul style="list-style-type: none"> • Acquire the knowledge international trade environment and GATT agreement • Analyse export - import procedures and transactions. • Evaluate day to day Accounting for exports and imports for income tax applicability on exporting firms / companies. • Understand the needs EXIM policy and EXIM Bank. • Develop the knowledge on Export oriented Units and Special Economic Zones 	Global developmental needs

Name of the Programme: B Com

Programme Outcomes at Undergraduate Level

Undergraduates will be able to:

- Discuss their new knowledge and understanding; apply new ideas in order to acquire employability/self-employment.
- Pursue higher learning programmes and become entrepreneurs.
- Recognize moral and ethical values and be socially responsible citizens in the society.
- Apply analytical, technical, problem solving, critical thinking skills, and decision-making skills in solving real life problems in one's life and in the society.
- Direct their own self-learning through MOOC courses, co-curricular activities, industrial exposures and field trainings.
- Develop their own broad conceptual background in Biological sciences, Computing sciences, Languages and culture, Management studies, Physical sciences, etc.
- Demonstrate communication skills both oral and written in personal and academic pursuits

Programme Specific Outcomes

- Acquire skills like effective communication, decision making, problem solving in day to day business activities to fit in any job.
- Pursue Professional Courses like CA, CS, CMA and so on. Also learners will be able to prove proficiency with the ability to engage in such courses.
- Recognize the role of business executives, entrepreneurs, policy makers and other stakeholders in the economic development of the nation and to contribute effectively to nation building.
- Identify business opportunities, evaluate them and set up their own business ventures.
Actively pursue a post-graduation course with a specialization that would match their interest.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Principles of Accountancy	C114	<ul style="list-style-type: none"> The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting To impart skills for recording various kinds of business transactions in the books of accounts. 	<ul style="list-style-type: none"> The students would be able to apply the basic principles of financial accounting and write up the accounts of a sole trading concern. He/she would be able to rectify the book-keeping errors and prepare a bank reconciliation statement. 	National
2	Business Organisation	C115	<ul style="list-style-type: none"> To impart basic knowledge on the essential topics in business organization, different types of trade associations and security markets. To create an awareness among the students of the various ethical issues in business and the corporate social responsibility. 	<ul style="list-style-type: none"> The students would know about the various types of business organizations and their characteristics. The students will have a basic idea of the capital market segments and stock exchanges. The students will have an idea of the rationale and need for ethical business practices and corporate social responsibility. 	Local
3	Financial Accounting I	C214	<ul style="list-style-type: none"> The objective of this subject is to acquaint students with the accounting tools and techniques influencing Business Organizations. To enable the students to learn the functional aspects of Financial Accounting. 	<ul style="list-style-type: none"> The students will know the various methods of calculating and recording depreciation in the books The students would be able to convert the books written on single entry basis (incomplete records) into proper double entry system. 	National

				<ul style="list-style-type: none"> The students would be able to write up the accounts of certain special types of business units like branches, departments and non-trading concerns. 	
4	Banking and Insurance	C215	<ul style="list-style-type: none"> To enable the students to acquire knowledge about basics of Banking and Insurance. To familiarize the students with the modern trends in banking. 	<ul style="list-style-type: none"> After completion of the course the student would have acquired practical knowledge of working mechanism of the banks in India. The students will know the basic principles of insurance industry and about the different types of insurance contracts 	National
5	Financial Accounting II	C322	<ul style="list-style-type: none"> To teach the students about the different types of general insurance policies and the methods of calculating the amount of insurance claims at the time of loss and also to learn about the accounting treatment for hire purchase system. To familiarize the students, of the accounting treatment required at the time of important changes in the constitution of a partnership firm. 	<ul style="list-style-type: none"> The students would be able to prepare a statement of insurance claims for the loss of stock and loss of profit policies. The students will know the accounting principles governing the hire purchase and installment system. The students will become well acquainted with the accounting for the partnership firms. 	National
6	Principles of Marketing	C323	<ul style="list-style-type: none"> To provide basic knowledge of concepts, principles, tools and techniques of Marketing. To make the students understand the importance of the concept of consumer behavior and apply it 	<ul style="list-style-type: none"> After the completion of this paper, the students will able to identify marketing components and fit them in the value chain along with the various marketing strategies. 	Local

			in marketing		
7	Company Law	C324	<ul style="list-style-type: none"> To make the students to understand the law relating to the formation and management of a company To make the students understand the role of a secretary in a company. 	<ul style="list-style-type: none"> The students will have a thorough knowledge on the different types of companies and the law relating to their formation. The students would have acquired knowledge on the basic legal documents to be maintained by a company and their contents The students would be able to know the role of a company secretary with respect to various meetings, resolutions and corporate governance. 	National
8	Corporate Accounting	C421	<ul style="list-style-type: none"> To help students acquire knowledge on accounting for issue and redemption of capital and help them to prepare the final accounts of companies according to the requirements of Companies Act 2013. To familiarize the students of the accounting treatment required at the time of mergers and reconstruction of companies 	<ul style="list-style-type: none"> The students will have a clear understanding on the accounting treatment of issue and redemption of shares/preference shares and debentures, calculation of profit prior to incorporation and its treatment. The students would be able to prepare the final accounts of Joint stock companies in the format specified by the companies Act. The students will know the accounting procedure involved in amalgamation and 	National

				reconstruction of companies and accounting for the same.	
9	Cost Accounting	C422	<ul style="list-style-type: none"> To familiarize the students with various concepts and elements of cost accounting To impart the necessary skills required to measure the cost of production of a product by correctly estimating the various elements of cost 	<ul style="list-style-type: none"> The students will have a thorough understanding of the different elements of costs and they would be able to prepare a cost sheet. 	Regional
10	Business Management	C423	<ul style="list-style-type: none"> To provide the student with an understanding of basic management concepts, principles and practices. To make the students understand the concept of leadership and control 	<ul style="list-style-type: none"> Students would be able to make use of different management principles in the course of decision making in different forms of business organizations. 	Local
11	Advanced Cost Accounting	C535	<ul style="list-style-type: none"> To impart knowledge on techniques of cost Accounting. To develop the skills in process, marginal and standard costing 	<ul style="list-style-type: none"> The students will know about the different methods of costing followed in different types of organizations. The students will know about the techniques of cost control and will possess the basic skills required for using them in organizations 	National
12	Income Tax Law and Practice I	C536	<ul style="list-style-type: none"> To provide basic knowledge of Income Tax Law To equip students with application of principles and provisions of Income Tax Act, 	<ul style="list-style-type: none"> The students would be able to apply the provisions of Income Tax Act and know the residential status of different types of persons 	National

			1961	<ul style="list-style-type: none"> • The students will be able to calculate the taxable income chargeable under the heads salary and house property. • The students will have an idea of the filing of returns and the assessment procedure 	
13	Financial Management	C537	<ul style="list-style-type: none"> • To help the students understand the importance of finance function in an organization and the important decisions taken by a finance manager • To impart the basic practical knowledge of various financial management concepts namely capital structure, cost of capital, working capital management and dividend policies 	<ul style="list-style-type: none"> • The students will be able to understand the role of financial management/manager in a corporate concern. • The students would have an idea of the factors influencing the various key financial decisions like capital structure, working capital, dividend and their implication on the value of the firm 	National
14	Human Resource Management	C538A	<ul style="list-style-type: none"> • To highlight the importance of HRM in an organization • To familiarize the students with the processes and mechanism of managing human resources 	<ul style="list-style-type: none"> • The students would be Familiar with the basic concepts of human resource management, its framework and role in effective business administration. • The students will have a basic knowledge on the procedures and factors involved in recruitment, placement, evaluation, compensation and development 	Regional

15	Advanced Corporate Accounting	C538B	<ul style="list-style-type: none"> • To familiarize the students of the methods of valuing goodwill and shares of a company and the liquidation procedure of companies • To make the students aware of preparing the accounts of holding companies, banking companies and insurance companies 	<ul style="list-style-type: none"> • The students will understand the different methods used in the valuation of goodwill and shares • The students will know legal formats and special items and adjustments pertaining to Banking companies and Insurance companies. • The students will be able to prepare simple consolidated balance sheets of the holding companies 	National
16	Business Logistics	C538C	<ul style="list-style-type: none"> • To understand and use the basic concepts of logistics and supply chain management and the contemporary theoretical and practical developments therein • To understand the complex and inter active nature of participants, functions, and flows of international logistics and supply chain management 	<ul style="list-style-type: none"> • The students will be able to relate the importance of logistics and the latest developments in the field. • The students will know the various components of supply chain management and how they are related. 	Global
17	Computer Fundamentals and E-Commerce	C539A	<ul style="list-style-type: none"> • To make the students to understand the importance of computers in business applications and learn the fundamental aspects of hardware and software components • To equip the students with the basic skills needed for creating and managing spreadsheets and help them to understand the 	<ul style="list-style-type: none"> • The students will understand the evolution of the computers and the recent developments in the information technology arena. • The students will be able to create and edit the spreadsheets and use/write the formulae used for analyzing the same. • The students will be able to use the internet and web based 	Local

			basic applications of internet and e-commerce	applications and understand their functioning	
18	Entrepreneurship	C539B	<ul style="list-style-type: none"> • To enable the students to learn the concept and importance of Entrepreneurship • To make the students aware of the various institutions that help the entrepreneurs in different ways 	<ul style="list-style-type: none"> • After the completion of this paper, student will have the entrepreneurial temper with conceptual input and practical insight as how to be an entrepreneur. • They will have the skills required for writing business projects and know about the various funding agencies and their requirements. 	Local
19	Management Accounting	C637	<ul style="list-style-type: none"> • To impart the knowledge of the various tools of financial statement analysis • To create an understanding about the preparation of budgets and capital budgeting methods 	<ul style="list-style-type: none"> • The students will gain an insight into the tools and techniques used in analyzing the financial statements. • The students will be able to prepare the cash flow and fund flow statements and will be able to evaluate the simple capital budgeting proposals using different methods. • The students will understand the useful of budgetary control in an organization and will be able to prepare simple functional budgets 	National

20	Income Tax Law and Practice II	C638	<ul style="list-style-type: none"> • To expose the students to the various provisions of Income Tax relating to computation of Total Income of Individual. • To introduce to the students various forms meant for filing return of income and prepare them to file return of Income. 	<ul style="list-style-type: none"> • The students will be able to apply the relevant provisions of the income tax Act and calculate the taxable income under the heads business income, capital gains and other sources. • The students will get a thorough knowledge on the provisions relating to the assessment procedure and will be able to file income tax return of the individual assesses. 	National
21	Business Law	C639	<ul style="list-style-type: none"> • To understand the basic structure of Business Law • To enlighten the students' to gain basic knowledge on Information Technology Act 2000 and RTI Act 2005 in India 	<ul style="list-style-type: none"> • The students will be able to understand the premise of the Indian Contracts Act. • The students will understand the different elements of contract, factors related to the performance of contract and different modes of discharge of contract • The students will get acquainted to the special contracts and will be able to explain the important provisions relating to them. 	National
22	Practical Auditing	C640A	<ul style="list-style-type: none"> • To familiarize the students with the Principles of Auditing • To make the students aware of the qualifications and the qualities of an auditor 	<ul style="list-style-type: none"> • The students will be able to describe the nature, purpose and scope of audit including the role of external audit and its regulatory and ethical framework. • The students will understand 	National

				<p>nature of internal audit and describe its role enhancing the overall performance of the management.</p> <ul style="list-style-type: none"> The students will be able to describe and evaluate information system and internal controls to identify and communicate control risks and their potential consequences. 	
23	Indirect Taxation	C640B	<ul style="list-style-type: none"> To provide students with a working knowledge of Principles and Provisions of GST, Customs Law and Foreign Trade Policy. 	<ul style="list-style-type: none"> After completion of this paper, the students will have an insight to the various provisions related to GST and Customs Act and the students will understand policies related to International Trade. 	National
24	Industrial Relations and Labour Laws	C640C	<ul style="list-style-type: none"> To enable the students to learn the concepts of Industrial Relations including trade unions, collective bargaining and various labour enactments. 	<ul style="list-style-type: none"> The students will know about the need for labour laws in India and the various labour laws in existence. The students will know the terms of employment and conditions of employment to be provided to the workers as per the provisions of various statutes. 	Regional
25	Computerized Accounting	C641A	<ul style="list-style-type: none"> To make the students be aware of the benefits of computerized accounting. To equip the students with the skill of using Tally ERP9 accounting package for recording the books of accounts. 	<ul style="list-style-type: none"> The students will be able to understand the importance and need for implementing a computerized accounting system in a business. The students will be able to use 'Tally ERP9' computer package 	Local

				for preparing various financial statements and extracting various reports using it.	
26	Personal Selling and Salesmanship	C641B	<ul style="list-style-type: none"> • The purpose of this course is to familiarize the students with the fundamentals of personal selling and the selling process. • To help the students understand the prospects of selling as a career and what it takes to be a successful salesman. 	<ul style="list-style-type: none"> • The students will be able to identify and understand the psychology of selling and different factors that shape the buying behavior of customers. 	Local

Name of the Programme: M.A Economics

Programme Outcomes at Undergraduate Level

Undergraduates will be able to	
PO1	Demonstrate advanced knowledge in their disciplines.
PO2	Develop specialized skills to plan, analyze and draw conclusions in their field of study.
PO3	Exhibit and expertise in their field of study through project and research activities.
PO4	Prepare themselves to incorporate new techniques in their own discipline and demonstrate excellence in their area of specialization.
PO5	Develop social and ethical responsibility in the transfer and management of knowledge.
PO6	Equip them to face the job market and to become entrepreneurs.

Programme Specific Outcomes at Undergraduate Level

PSO1	Pursue various advanced economic theories into diverse empirical fields.
PSO2	Concede contemporary economic concepts pertaining to discipline of economics.
PSO3	Demonstrate and impart knowledge on structure and distribution of the economy.
PSO4	Create critical thinking and social responsibility among the students.
PSO5	Compare and contrast environmental values, consciousness and making policy analysis
PSO6	Take up careers, research and employability skills in different sectors.

S No	Title of the Paper	Course Code	Course Objectives	Course Outcomes	Relevance
1	Micro Economics – I (Core)	E216	<ul style="list-style-type: none"> To provide an opportunity to learner for developing theoretical skills in economics with analytical ability 	<ul style="list-style-type: none"> Understand economic concepts and tools and analyse their relationships. 	national and global developmental needs
2	Macro Economics – I (Core)	E316	<ul style="list-style-type: none"> To make students to improve their wide capacity in assessing macro economic variables with theories. 	<ul style="list-style-type: none"> Analyse national macro economic policies 	national and global developmental needs
3	Statistics for Economics (Core)	E744	<ul style="list-style-type: none"> To make the students understand the concepts of Statistic and its applications. 	<ul style="list-style-type: none"> Use statistical techniques in economic analysis. 	national and global developmental needs
4	Economics of growth and development (Core)	E745	<ul style="list-style-type: none"> To make the students to understand about economic development and planning. 	<ul style="list-style-type: none"> Relate economic variables contributing for growth and development of economy. 	national developmental needs

5	Demography (Elective (optional))	E746A	<ul style="list-style-type: none"> To educate the students about the inter relationship between economic development and population, along with an exposure to the established theories of Population. 	<ul style="list-style-type: none"> Relate demographic variables to economic development. 	regional, national and global developmental needs
6	History of Economic thought (Elective (optional))	E746B	<ul style="list-style-type: none"> To enable the student to understand how contemporary economics is performing. 	<ul style="list-style-type: none"> Analyse , appreciate and develop economic thinking.. 	national and global developmental needs
7	Economics of Infrastructure (Elective (optional))	E746C	<ul style="list-style-type: none"> To study the role of infrastructure and to understand the issues involved in development of infrastructure. 	<ul style="list-style-type: none"> Analysesectoral relationship and resources. 	local, regional , national and global developmental needs
8	Communication Skills (SK)	E747S	<ul style="list-style-type: none"> To enhance the students to acquire more communicative skills. 	<ul style="list-style-type: none"> Effective business communication 	national and global developmental needs

9	Micro Economics - II (Core)	E315	<ul style="list-style-type: none"> To provide an opportunity to the learner for developing theoretical skill in economics with analytical ability 	<ul style="list-style-type: none"> Understand economic concepts and tools and analyse their relationships. 	national and global developmental needs
10	Macro Economics – II (Core)	E849	<ul style="list-style-type: none"> To make the students to have awareness on Macro Economic Issues and their operations in the Economy. 	<ul style="list-style-type: none"> Analyse national macro economic policies. 	national and global developmental needs
11	Mathematics for Economics (Core)	E850	<ul style="list-style-type: none"> To make the students understand the fundamentals of mathematics and its application in Economics. 	<ul style="list-style-type: none"> Use mathematical tools and techniques in economic analysis 	national and global developmental needs
12	Entrepreneurship training Skills (SK)	E853S	<ul style="list-style-type: none"> This paper provides a wealth of information on entrepreneurship and related issues. 	<ul style="list-style-type: none"> Motivated entrepreneur. 	local, regional developmental needs
13	Managerial Economics (Core)	E851	<ul style="list-style-type: none"> To make the students to equip with advanced managerial concepts in modern business activities. 	<ul style="list-style-type: none"> Apply economic tools in managerial decisions. 	national and global developmental needs

14	Industrial Economics (Elective (optional))	E852A	<ul style="list-style-type: none"> To understand the ways in which economics forces operate within the industrial sectors. 	<ul style="list-style-type: none"> Analyse cost and benefits structure of industries. 	regional and national developmental needs
15	Economics of urbanization (Elective (optional))	E852B	<ul style="list-style-type: none"> To enable the students to achieve a specialized knowledge of urban economics 	<ul style="list-style-type: none"> Analyse causes and consequences of urbanization. 	local, regional ,national developmental needs
16	Economics of Gender and development (Elective (optional))	E852C	<ul style="list-style-type: none"> To emphasize the students on invisibility of women's work and gender issues in organized and unorganized sectors. 	<ul style="list-style-type: none"> Analyse gender discrimination and impact. 	local, regional ,national and global developmental needs
17	Computer Software Packages (SPSS, AMOS) in Economics (CC-1)	E854X	<ul style="list-style-type: none"> To Make the student to 	<ul style="list-style-type: none"> Skilled data analyst. 	national and global developmental needs
18	International Trade (Core)	E933	<ul style="list-style-type: none"> To help the students to acquaint the theoretical foundations 	<ul style="list-style-type: none"> Analyse and predict global trade direction and composition 	national and global developmental needs
19	Public Economics (Core)	E934	<ul style="list-style-type: none"> To enable the students to understand the concepts in public finance and working of the public 	<ul style="list-style-type: none"> Analyse and design tax and expenditure structure. 	Regional and national developmental needs

			economics.		
20	Monetary Economics (Core)	E935	<ul style="list-style-type: none"> To enable the students to understand the basic concepts regarding money and the functioning of a pecuniary economy. 	<ul style="list-style-type: none"> Analyse behavior financial and money market. 	national and global developmental needs
21	Research Methodology (Core)	E936	<ul style="list-style-type: none"> To provide knowledge about the social science research and its relevance in tackling real issues of the society. 	<ul style="list-style-type: none"> Economic research and preparing report. 	national and global developmental needs
22	Data Analysis and Interpretation (SK)	E938S	<ul style="list-style-type: none"> To enable the students to apply SPSS in Economic Research. 	<ul style="list-style-type: none"> Data analyst. 	national and global developmental needs
23	Basic Econometrics (Elective (optional))	E541B	<ul style="list-style-type: none"> To develop the application of econometric methods in economics and business data. 	<ul style="list-style-type: none"> Analyse economic with applied mathematical tools. 	national and global developmental needs
24	Health and Economics (Elective (optional))	E937B	<ul style="list-style-type: none"> To understand the importance of health economics with 	<ul style="list-style-type: none"> Cost benefits analyser of health care. 	local, regional ,national and global developmental needs

			due awareness.		
25	Personal Management(Elective (optional))	E937C	<ul style="list-style-type: none"> To develop an understanding of the management of human resource with special reference to various aspects of human resource management. 	<ul style="list-style-type: none"> Manager HRM 	national and global developmental needs
26	Computer Software Packages (Eviews, R – Programming) in Economics (CC-2)	E939X	<ul style="list-style-type: none"> To make the student to To make the student to have knowledge about R-Programming 	<ul style="list-style-type: none"> Business economic analyst. 	national and global developmental needs
27	Indian Economy Issues and Policy (Core)	E1034	<ul style="list-style-type: none"> To understand and analyze Indian economic problems and policies. 	<ul style="list-style-type: none"> Determine economic variable like inflation, unemployment, poverty, GDP. 	local, regional, and national developmental needs
28	Environmental Economics (Core)	E1035	<ul style="list-style-type: none"> To apply economic theories into the environmental problems to solve the social issues. 	<ul style="list-style-type: none"> Social cost benefits analyst 	local, regional ,national and global developmental needs
29	Indian Public Finance (Core)	E1036A	<ul style="list-style-type: none"> To enable the students to have an overview of the working of Indian public 	<ul style="list-style-type: none"> Analyze and design tax and expenditure structure. 	regional ,national developmental needs

			finance.		
30	Tamil Nadu Economic Development (Core)	E1036B	<ul style="list-style-type: none"> To highlight the economic characteristics and development of Tamil Nadu, 	<ul style="list-style-type: none"> Determine economic variable like inflation, unemployment, poverty, GDP in Tamil Nadu. 	local, regional developmental needs
31	Financial Institutions and Markets (Core)	E1036C	<ul style="list-style-type: none"> To gain knowledge on the structure and functioning of financial institutional and market system in India. 	<ul style="list-style-type: none"> Analyse behavior financial and money market. 	national and global developmental needs
32	Labour Economics and Industrial Relations (Elective)	E1037A	<ul style="list-style-type: none"> To understand the role of labour and their relations in industries. 	<ul style="list-style-type: none"> Labour arbitration. 	regional ,national and global developmental needs
33	Security Analysis and Portfolio management. (Elective)	E1037B	<ul style="list-style-type: none"> To enable the students to know portfolio investment management and security analysis. 	<ul style="list-style-type: none"> Analyst money market and investment decisions. 	national and global developmental needs
34	Co-operation and Rural Development (Elective)	E1037C	<ul style="list-style-type: none"> To make the students to understand the importance of Cooperative system and 	<ul style="list-style-type: none"> Rural cooperative designer. 	local, regional developmental needs

			its role in rural development		
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